



## Newsletter No. 41 – August, 2006

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### **1. Web Site Changes**

The time your directors spend to maintain the WOA is all donated time. Your directors spend this time because we are aware of the challenges facing our industry and the requirement of members for information and communication.

Daryl Holle has carried out the maintenance of our web site for the past few years and has asked to be relieved of the duty, as he is simply too busy. Can we all thank Daryl for maintaining the site for so long?

This provides an opportunity for making changes. Using the members email list, can we invite thoughts from our members and develop discussion on content that our members would find helpful or believe would be beneficial to attracting new members and increased communication.

### **2. New Director**

There have been no nominations for directors. However, you directors have invited Bert Rayner to become a director to replace Dessi Daskalova who resigned last year, as she was unable to devote the time required. We would all like to thank Dessi for her hard work during her time serving as a director and welcome Bert.

### **3. Optimising Nutrients**

Bert Rayner has submitted an article entitled "Nutrient Recycling on Humanity's Menu". The article was written by Julian Cribb, adjunct professor of science communication at the University of Technology, Sydney. Julian discusses the challenges ahead to feed the increasing populations in our throw away society and focusing particularly on Nutrients that are wasted. The article is talking about Australia in particular, the points he raises are common in many countries. Examples given are:

- Of all nutrients applied on farms, up to half are wasted in that they do not go to crops or pastures but are lost to soil lock-up, weeds, erosion, leaching or run-off.
- The industry that processes our food spends \$750 million a year just to dispose of its waste.
- One-third to one-half of all the food that enters our shops, supermarkets, restaurants and homes is thrown away.
- Our cities waste 97 per cent of their sewage effluent and its nutrients.

The writer calculates that if those estimates are sound, in theory it is possible to feed an extra 30 million to 60 million people on an Australian diet with the nutrients they presently chuck into landfills and the ocean.

He highlights the fact that recent drought has made Australians more conscious of the need to be sparing in the use of water, but there is hardly public discussion of reusing that which supports all life: nutrients. The full article is published as a supplement to this newsletter.

We will discuss the issues of optimising nutrients as it affects livestock production, with particular focus on Ostrich.

Recent developments in livestock production nutrition have changed from simply defining nutritional adequacy "as freedom from disease". Increased understanding of the role of micronutrients in livestock rations has enabled livestock to utilise the nutrients in their rations far more efficiently. This optimisation has enabled the animals to grow faster, increase egg, meat or milk production for the same weight of feed intake. In the case of meat production, reduced feed intake is possible through the improved conversion rate of feed to meat and the ability to slaughter at significantly younger ages, therefore requiring fewer ingredients to achieve increased production.

This technology has enabled livestock producers to become increasingly efficient, reduce their costs and increase their profits. The result is better use of the available nutrients in rations and low cost food.

Quote: ***By defining adequacy simply as freedom from clinical deficiency signs, this approach sets its sights dangerously low. It can be likened to a producer who concentrates on a breakeven return when real profits are possible. ....***

***Vitamins are nutrients that regulate the biochemical reactions by which energy and protein are used for health, growth, feed conversion and reproduction. Without vitamins, these biochemical reactions will not occur, and the nutrients present in the feed will not be properly utilized. If the amount of any vitamin in the diet is inadequate to meet the daily requirements of an animal, clinical deficiency signs or disorders due to impairment of these biochemical reactions may occur. The effects of marginal inadequacies will be less obvious, but will include less than optimum health and performance.*** end quote

[source: Optimum Vitamin Nutrition for Optimum Animal Health and Performance [http://www.dsm.com/en\\_US/html/dnpus/an\\_opt\\_vit\\_nutrition.htm](http://www.dsm.com/en_US/html/dnpus/an_opt_vit_nutrition.htm)]

Past newsletters have discussed the potential of ostrich to become as efficient as pig and poultry as a provider of low cost meat protein. In the light of the discussion on making better use of available nutrients, our industry needs to be adopting these techniques on a global scale. Ostrich have the ability to improve significantly the utilisation of available nutrients than is currently the norm.

Optimisation of available nutrients brings about increased production, reproduction and profitability. In the light of this particular discussion, should the industry continue down the route of inefficient production and low profitability?

#### **4. Daryl Holle**

Improved nutrient efficiencies bring about increased egg production, improved meat yields and younger slaughter.

The International ostrich industry first became aware of the work of Daryl Holle at the end of 1996 with the introduction of the Internet. Early in 1997, we were reading the farmer benchmark trials that reported bird weights of 95kgs at 7 months (213 days) and feed conversion at 2.56:1. Those same birds averaged 145kgs Liveweight with feed conversion from day old to 12 months (365 days) of 3.94:1, see table 1.

**Table 1 - Blue Mountain Farmer Benchmark Weight Gain Trial 1996/1997**

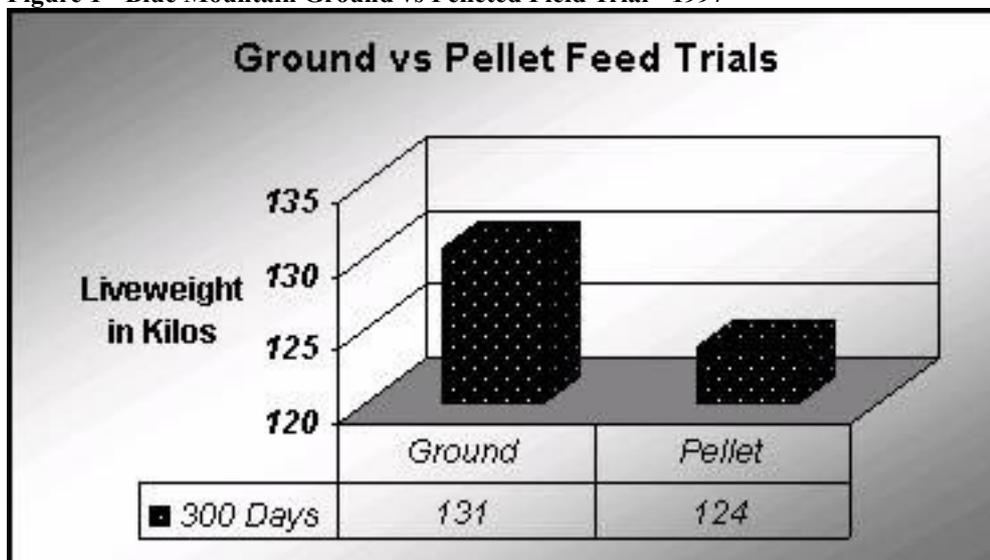
Age (Mth)	Total Feed kgs	Total Gain	Conversion Ratio %	Conversion Rate
1	4.65	5.71	1.23	0.81
2	17.67	16.76	0.95	1.05
3	45.61	37.38	0.80	1.24
4	83.71	55.61	0.66	1.51
5	130.22	71.66	0.55	1.02
6	186.03	80.31	0.43	2.32
7	245.01	95.74	0.39	2.56
8	319.87	102.09	0.32	3.13
9	384.75	110.71	0.29	3.48
10	446.01	122.05	0.27	3.65
11	507.26	133.39	0.26	3.80
12	568.51	144.28	0.25	3.94

[Source: Potential Meat Yield of Ostrich – Blue Mountain Bulletin No. 81  
<http://www.blue-mountain.net/bulletin/bull81.htm>]

The important factor here is that in 1997 very little meaningful information was available. In that environment a key factor that excited me to this particular trial was the fact that each month reported with a clear confidence that the outcome was a forgone conclusion and the field trial was simply a process to document the results and provide our industry with meaningful benchmark figures.

Another study shortly after compared birds fed exactly the same rations, but one was pelleted and the other was fed ground, Figure 1. Note the liveweights of 131kgs and 124kgs and the age of just 300 days.

Figure 1 - Blue Mountain Ground vs Pelleted Field Trial - 1997



[Source: "Ground v Pelleted Field Trial - <http://www.blue-mountain.net/feed/p0001987.htm>]

As a small producer operating in South Africa I have personally proven and documented (Influences of Ostrich Skin Quality . . . Age or Nutrition? – Blue Mountain Bulletin No. 79) that skins produced from birds perceived as too young are very acceptable when the birds are produced according to the systems developed by Daryl Holle. Those same birds immediately recorded 50% average increase in meat yield over current industry averages and that was before any genetic development program had been put in place.

This proves the excellent feed efficiency of ostrich when raised under the right management conditions, with tremendous improvements achievable as the industry develops the genetic

base through natural selection. Daryl Holle has proven Ostrich to have the potential to be as feed efficient or better than Pigs and Poultry.

This type of livestock production technology is required to enable Ostrich to develop into a viable industry. Without it, each country continues to struggle trying to build a viable industry and most will never reach that goal as profitable productivity is missing from the equation.

## **5. South African Avian Influenza Update**

The most recent news reports infection on a neighbouring farm to the initial outbreak and more than 8,000 birds culled. This farm is the farm that supplied the chick breeder that had the initial outbreak. The cull included birds of all ages including 700 breeders. It emphasises again the importance of very strict bio-security.

This has not affected the current meat export ban, which remains in place for just the two zones.

The most recent posting by the OIE can be found at [http://www.oie.int/eng/info/hebdo/AIS\\_10.HTM#Sec2](http://www.oie.int/eng/info/hebdo/AIS_10.HTM#Sec2) . This report also has links to the previous outbreak.

## **6. Contributions**

As always, we ask for contributions. Please let us know what activity is happening in your area or any interesting articles that are published in your region.

**Any comments or suggestions, please post either to the members list [woa@world-ostrich.org](mailto:woa@world-ostrich.org) or Craig at [secretary@world-ostrich.org](mailto:secretary@world-ostrich.org)**

**Ask not only what the WOA can do for you but also what you can do for the WOA.**

## **Supplement:**

### **Nutrient recycling on humanity's menu**

THE ability of humanity to feed itself through the steepest increase in food demand in history lies in something most communities throw away: nutrients.

In the next 40 years, according to the UN Environment Program, world food output must rise 110 per cent to meet the demands of population growth and improving diets in places such as China, India and Latin America.

This will require more food yearly than has so far been produced in the whole of history. Yet ponder the following of Australia's situation:

- \* Of all the nutrients applied on our farms, up to half are wasted, in that they do not go to crops or pastures but are lost to soil lock-up, weeds, erosion, leaching or run-off.
- \* The industry that processes our food spends \$750 million a year just to dispose of its waste.
- \* One-third to one-half of all the food that enters our shops, supermarkets, restaurants and homes is thrown away.
- \* Our cities waste 97 per cent of their sewage effluent and its nutrients.

If these estimates are sound, in theory it is possible to feed an extra 30 million to 60 million people on an Australian diet with the nutrients we presently chuck into landfills and the ocean.

Recent drought has made Australians more conscious of the need to be sparing in our use of water, but there is hardly public discussion of reusing that which supports all life: nutrients.

We are the most prodigal generation there has been. Our great-grandparents, who carefully forked their compost heaps and manured their fields, would consider a society that buys new nutrients each year, then throws them away, to have lost its reason.

The world supply of nutrients is not yet critical, so why worry? In the past 30 years, the price of fertiliser has risen by an average 1000 per cent: about twice the rate of oil price increases.

What's going to happen in the next 40 years when world food output has to more than double?

Nutrients may become expensive and even scarce commodities, especially as some of them are being used to grow transport fuels and therefore replace oil.

Australia has an excellent record in learning to manage nutrients on farms. The dairy industry in particular has done much pioneering work on the nutrient cycle to minimise the loss of nutrients down the creek.

CSIRO has done good work on the reuse of sewage nutrients to grow things, and Melbourne Water likewise, yet most of our nutrients are still trashed.

Work on recycling food waste from processing, retailing or end consumers has hardly begun.

US environmental scientist Peter Raven recently remarked that humans use or destroy 45 per cent of all terrestrial bioproductivity.

If he's even close to right, there is going to be colossal demand for nutrients in the coming decades.

Australia, a lean and hungry continent, could distinguish itself by becoming the first nation to seriously attempt to close the nutrient loop, to reuse our nutrients again and again before they finally make their way to the deep ocean.

Some ways we could do this:

- \* A national strategy for capturing and recycling nutrients in urban sewage treatment plants into fertilisers and soil amendments.
- \* A campaign to recycle or compost waste food in the catering industry and homes and a ban on sending food to landfill.
- \* The development of algae farms and other advanced bioprocessing techniques for reprocessing waste into fertilisers, biofuels, stockfeed, fine chemicals, bioplastics and so on.
- \* Wider on-farm use of perennial crops, deep-rooted crops, agroforestry and strip-farming techniques to intercept nutrients in groundwater and recycle them into timber, particle board, fruit, charcoal, flowers, bio-pharmaceuticals, fodder and stockfeed, electricity and biofuels.
- \* Use of instream aquaculture and algae culture to harvest nutrients in rivers, reservoirs and lagoons.
- \* The creation of farmable wetlands to harvest nutrients from surface run-off and convert them to aquatic crops of economic value.
- \* Design standards for farms, roads, buildings, urban developments and so on that minimise nutrient losses and allow for capture and reuse.
- \* Strategies for remobilising or phyto-mining nutrients trapped in aquatic sediments.
- \* Bio-farming using tailored suites of soil micro-flora and micro-fauna to mobilise trapped nutrients and increase their availability to crops and pastures.
- \* Harvesting of algal blooms in lagoons and estuaries and reprocessing them.
- \* Breeding of less nutrient-dependent crop and pasture cultivars.

\* Research into organic farming methods to identify those with proven potential to conserve, recycle and mobilise nutrients.

\* Development of extensive marine grazing systems that enable sustainable wild harvest of fish, shellfish and algae inshore to recapture nutrients.

\* Public education on the importance of nutrient conservation.

Above all, we need a national scientific plan and an attitudinal shift from our culture of waste. We recycle aluminium cans, steel cars, plastic containers, glass and paper. Why do we hardly reuse nutrients? To do so would undoubtedly save and make money. The additional food exports alone could earn an extra \$25 billion to \$50 billion a year.

There is an epic scientific challenge in this and Australian scientists - strong in agriculture, soil science, biotechnology and natural resource management - are well equipped to tackle it.

Solve the challenge of nutrient reuse and Australia may just help humanity pass the population peak into a managed decline instead of the catastrophic collapse that is the usual fate of species whose populations have outrun their resources.



## Newsletter No. 42 – September, 2006

1. **Introduction**
2. **Report from Kingdom of Saudi Arabia (KSA)**
3. **Directors Comments**
4. **WOMRAD**
5. **Web Site**
6. **AGM and Meeting in Vietnam**
7. **Contributions**

### 1. **Introduction**

Rayan Hayder, manager of The Arabian Ostrich Company in KSA has sent us a long report of the industry in KSA. This report will form the focus of this news letter.

### 2. **Ostrich Production in KSA & its challenges**

#### **Introduction:**

The Ostrich production in KSA, has suffered tremendously in the past decade because of the lack of knowledge in the field and the improper dissemination of information from various sources in the industry, with the sole purpose to sell Ostriches to the Saudi Market under the false pretext that Ostrich is "the Goose that lays the golden eggs". The lack of business morals by many traders seeking to get rid of their breeders birds, found in the rich Saudi investors the opportunity to make use of their financial strength to invest in Ostrich production, without providing them with proper technical support and Marketing advice in this field. After more than ten years since the establishment of the first commercial Ostrich farm in KSA, the Saudi producer is still struggling to survive and maintain his investment.

#### **History of Ostriches in KSA**

In the year 1943, the Syrian Ostrich (*Struthio camelus syriacus*) that inhabited the north of Saudi Arabia, in addition to Syria, Jordan, Iraq and even western Iran, was hunted down and became extinct. This small sized bird (the smallest Ostrich subspecies) was known for its beautiful feathers and hardiness to withstand the harsh weather in that region. With the modernization of the kingdom, the Government started creating new laws and reservations to ensure the survival of many endangered species. The most important institution is the high Commission of Wildlife Conservation and Development currently led by his highness Prince Bandar Bin Saud, in an attempt to support and protect the heritage of his ancestors.

In the early 1990's, the Ostrich industry was booming with emphasis on breeders market and leather as good sources of profit. Eventually the proposals started pouring on the Saudi investors and by end of 1995, the first commercial Ostrich production farm was established in partnership with "France Atruche" and in the following years, many projects followed in many areas of the Kingdom. All of these projects were managed by overpaid foreign consultants, eventually after a couple of years the downfall of the industry in the world left the Saudi businessmen suffering the lack of markets and the unavailability of a united body to support their work and guide them out of this crisis.

Currently in KSA, there are seven major projects with an average of two thousand breeders or more in each farm. Each project has its complete system already set with large hatcheries and

Abattoirs. Nevertheless, none of these projects is currently capable of covering his operating cost even with the tremendous efforts they are instigating. As for the total number of farms, the Ministry of Agriculture claims that there are around 40 projects with 500 birds or more and many still without proper permit papers.

### **Current market situation:**

The Saudi economy is booming and depends mainly on the oil business, which accounts for 95% of its exports with a production of nine million barrels per year. The GDP increased from 1999 to 2003 by 31% (from \$161 billion to \$211 Billion). Currently, with the higher oil prices we expect more increase. In 2003, the value of the import market of food and beverages was \$3.9 billion. The consumption has increased from 2002 to 2003 by 13%. Although Saudi Arabia is a large producer of meat, reaching in 2003 a total production of 456,000 tons of chicken meat alone, the country also imported more than 350,000 tons of frozen chicken meat.

The Saudi population has an annual growth of 3.5% with roughly 70% of the population under 30 years of age. The Saudi food market is known to be traditional, with the population purchasing their food from wholesale markets; this trend has shifted to modern Hypermarkets and western influenced imported consumer goods.

The Saudi Consumer is becoming more aware of his health and is slowly shifting from the traditional heavy cooking to diet products. Although the Market for health and diet is not as developed as in Western countries, it is increasing rapidly. In the midst of all this huge population of 24 million Saudi and 7 million expatriate workers, Ostrich meat should in fact find its market share.

### **Ostrich meat market:**

The sales of Ostrich meat are currently limited to large supermarkets and whilst the Saudi consumer is starting to be aware of this delicate meat, but the turn over rate is still very low. The major factors affecting its development relates to several factors:

 **Poor Marketing strategy:** The Ostrich producers in Saudi Arabia do not have the adequate team to instigate proper promotion and marketing for their meat, they started to introduce the product to the supermarkets prior to any market research or professional assistance.

 **Inadequate advertising campaigns:** The lack of effort to promote on a national scale the healthy attributes of the Ostrich meat as the new low fat red meat made it more difficult for the consumers to accept it.

 **Variation in meat quality and prices:** This variation on meat quality and prices is the major factor that hinders the development of sales; the ostrich meat displayed in supermarkets varies tremendously from one producer to another in color and tenderness. Furthermore, many lack the correct branding, packaging and labelling to give the needed assurance to the consumer. Many companies failed to maintain sales because of the negative impact of their product mainly with the growing awareness of the Saudi consumer. Furthermore, the price variation between one producer and another has a very negative impact on the meat sales and sometimes reach 30% in difference, which the consumer is unable to understand.

 **Lack of cooperation between producers:** This hinders any possibility to establish standards for the ostrich industry; nevertheless, the WOA at this stage will be able to play a larger role in developing such future cooperation.

 **Limited export deals:** Although Saudi Arabia has joined the WTO, still the export of meat and live birds is limited to Gulf countries and Asia since there is no access to EU countries except for tanned Ostrich skins.

 **Limited Governmental support:** The Ostrich producers failed to win the support of the Ministry of Agriculture and many governmental agencies, because of the absence of an active association that can act on behalf of the industry as a whole to get the same level of support as other Agriculture sectors.

### **Ostrich Industry and its potential role:**

During the last 3 years, a few pioneering Ostrich producers started realizing that the industry must move forward and learn from past mistakes to ensure a future role in the market. Thus, we can observe the following slow changes:

 **Ostrich Abattoirs with HACCP and ISO 9000 certifications:** Provide the consumer a sense of food safety and quality assurance.

 **Ostrich meat branding:** A better exposure and display in meat sections inside Hypermarkets, furthermore, the meat is included in weekly flyers in colored promo packs.

 **Ostrich meat processing:** Currently we can find in stores new Ostrich products like Burgers, Franks, Roast and Ostrich ham. Such diversity helps in having long shelf life products in attractive packages for a wider consumer choice.

 **Specialized restaurants in Ostrich meat:** By the end of 2004, a new line of restaurants opened in Riyadh City, Capital of KSA that specializes in different meals made solely of Ostrich meat. Such work is still in progress and requires more development.

 **Ostrich chicks and eggs export to foreign countries:** Because of the lower cost of production mainly in labor, fuel and feed. Saudi Arabia is in a better situation to export chicks and eggs to some countries. Such attempts will not persist if the quality produced is not consistent and competitive.

 **Ostrich and Crocodile tannery in KSA:** Although, the production is in its early beginnings, nevertheless, one Saudi Company succeeded in creating the first tannery in the Gulf. The vast experience of the South Africans was a major factor in developing this project and succeeding in winning the support of most of the producers in the kingdom that have created a fair market for salted skins.

In concluding, I need to stress again on the importance of a united body that will help and promote the welfare of the Ostrich Industry. Perhaps I am accused of being biased when I try to promote the objectives of the WOA, but during my long struggle in this field, I never found the substitute.

ENG. Rayan A. Hayder  
AOC Project Manager  
WOA Director

### **References:**

- I. The Ostrich by Dr. Horbańczuk
- II. The Ministry Of Agriculture in Gassim, KSA
- III. The Danish Embassy in Saudi Arabia newsletter
- IV. ESSA food and Agriculture indicators in Saudi Arabia (source FAO and World Bank)
- V. Food Market in Southeast Asia Data Center

### **3. Directors Comment**

The answers are then pretty simple and elementary as we just have to adopt principles already proven in mainstream livestock production. This is difficult to accomplish while our industry remains fragmented. The overview answer has always been to convert ostrich to a livestock industry based on production agriculture technology with an aggressive and well supported infrastructure to handle all the inner workings right through to the consumer. That is the aim of the World Ostrich Association.

The answers are pretty simple and elementary as we simply have to adopt principles already proven in mainstream livestock production. Accomplishing this while our industry remains fragmented and too few managers of ostrich operations with experience of modern production agriculture makes it most difficult to get started with a meaningful effort to solve the situations. The overview answer has always been to convert ostrich to a livestock production agriculture technology with an aggressive and well supported infrastructure to handle all the inner workings right through to the consumer. That is the aim of the World Ostrich Association.

The introduction of two things will lead to the success of ostrich:

- Modern livestock production technology
- Modern market planning with a good support infrastructure

When both of those items come together properly, ostrich will become the industry we all know it can be.

To date when the market planning and support infrastructure is there---the livestock production technology is not, so it all fails. When the production technology is there---the market planning and support infrastructure is not, so again it all fails again.

We can place our hands on the wound and know the correct treatment, but it requires sufficient people involved to understand this to implement that treatment successfully.

#### **4. WOMRAD**

In January 2005 we put forward the idea of WOMRAD, a commercial company to bring these things together in a collaborative effort. Over the months we have, through the newsletters, identified different areas that WOMRAD can implement with cooperation of all participants. The following are areas identified over since January 2005 that WOMRAD can introduce and implement. Some items you will recognise as now in place:

- Reduce Production Costs
- Implement Quality Standards
- Introduce Best Practices
- Branding and Quality Marks
- Marketing Support
- Monitor Market Trends and Disseminate the Information
- All benefit through pooling resources
- Implement solutions to improve health and production
- Set achievable high production goals
- Introduce Benchmarking
- Support members to produce Quality and Consistency of supply
- Put in Place Quality Assurance Programs
- Research and Training
- Build a Value Chain Approach

The meeting our members from Vietnam are hosting next month <http://www.world-ostrich.org/vietnam.htm> is an opportunity to discuss all these issues and develop the strategies required to implement the treatment. We hope to see many of you in Vietnam.

#### **5. Web Site**

The updated web site is now up and running. Please let us know if you have any ideas on items you would like to see, or developments. Also please let us know if you notice any glitches, links not working etc.

#### **6. AGM**

The Fourth Annual General meeting of the World Ostrich Association to is be held at 33 Eden Grange, Little Corby, Carlisle, England on Tuesday, 19th September 2006 at 5:00pm BST (British Summer Time, GMT+1). A simultaneous broadcast to the WOA Chatroom enables all WOA membership to participate in the meeting on-line.

All members should have details of your User Name and Password to enable you to have access to the Members only pages on the web site. Please email the secretary if you require a reminder. The following link provides access to the reports and voting form <http://www.world-ostrich.org/member/agm2006.htm>.

#### **Agenda**

1. The Chairman's Welcome Address

2. The Chairman's Report
3. The Financial Statement for the year ended 30th June 2006 (requires your vote)
4. Election of Directors – there are no nominations so the standing directors Craig Culley, Rayan Haydar and Daryl Holle) are therefore re-elected
5. The Officers for the coming year
7. Any Other Business (please see note below)

Please note that whilst the meeting is physically taking place at the registered office - the meeting broadcast 'on line' through the Chat room (<http://www.world-ostrich.org/member/chatroom.htm>), enables every member may to take part. In order for all to participate, to ensure the meeting runs smoothly and work within the limitations of an Internet Chat room, there are a few changes from the normal process for such a meeting. The limitations of an Internet Chat room, which is restricted to typing only, require all reports read prior to the meeting to save time.

If any have questions or need clarification prior to voting, please email the secretary or send a question to the members' list: [woa@world-ostrich.org](mailto:woa@world-ostrich.org).

### **Voting**

The form for voting is at the web site <http://www.world-ostrich.org/member/agmvote6.htm>

This is on a secure site and you will require your username and password.

Please follow the instructions and work through the form being very careful not to press enter as you move down the form.

You can submit your votes any time.

Cut off time will be 3.00 pm BST (GMT+1), 2 hours prior to commencement of the meeting.

There will be no votes accepted at the meeting.

The Chairman will announce the result of the votes at the meeting.

### **Any Other Business**

If you have any points that you would like to raise, please put them on the comments form at the end of the voting form.

The chat room environment does not work well for discussions. Therefore the Chairman will announce any requests for items to be included under 'Any other Business' but discussions will be taken to the Members list and carried out during the week following the meeting. Those attending the meeting in Vietnam on 25th September will have an opportunity to discuss any issues raised at a physical meeting.

The meeting in Vietnam falls within a week of the AGM, so those attending the seminar in Vietnam can meet and discuss those issues during the WOA members' only meeting held on the eve of the seminar.

### **7. Contributions**

As always, we welcome contributions and articles from your area. Please send them to [editor@world-ostrich.org](mailto:editor@world-ostrich.org).

**Any comments or suggestions, please post either to the members list [woa@world-ostrich.org](mailto:woa@world-ostrich.org) or Craig at [secretary@world-ostrich.org](mailto:secretary@world-ostrich.org)**

**Ask not only what the WOA can do for you but also what you can do for the WOA.**



## Newsletter No. 43 – October, 2006

1. Introduction
2. The Benefits of Building a Value Chain
3. Practical Examples of Value Chains
4. Clothing Industry to use Chicken Feathers
5. World's Largest Ostrich Egg
6. Contributions

### 1. Introduction

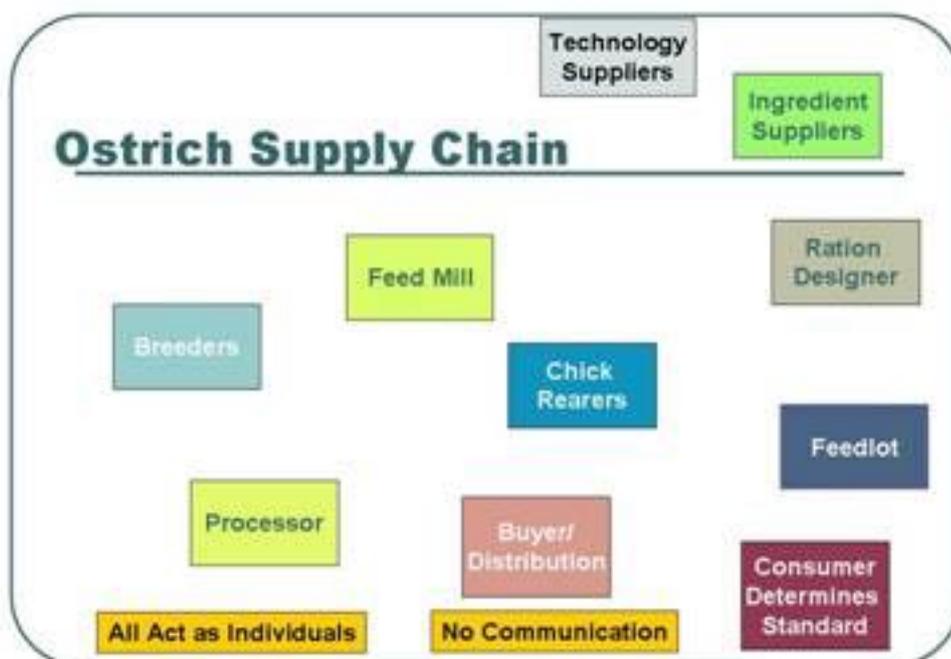
Increasingly producers and buyers are encouraged to develop value chains in recognition of their contribution to increase value, efficiency and therefore profitability. This month's newsletter will focus on the principles of this approach; and how it works in practice.

### 2. The Benefits of Building a Value Chain

To answer this question, we first need to understand the differences in a Supply Chain, a Horizontal Chain and a Value Chain.

#### What is a Supply Chain?

A supply Chain is where each element of the process to the end consumer is defining their section of the process as the product.



For example, the technology companies, such as machinery, chemicals and seed suppliers, supply the arable farmer. The arable farmer buys for the best price and sells for the best price but his efficiency is dependent on those technology companies that supply him.

The grain buyer might be a grain trader, it may be a livestock farmer, or it may be a commercial feed mill. They buy at the best price and sell at the best price. They all work independently of each other.

The technology companies supporting the livestock producers are vets, pharmaceutical companies, premix companies, equipment manufacturers and so on.

Livestock producers can be specialist breeders, rearers, finishers or they may do the whole process. They sell to the processor.

Each section is a supplier to the next, each taking their own profits but all operating totally independently of the other and with no communication and coordination or feedback.

### **What is a Horizontal Chain?**

A Horizontal Chain is a group of Producers working together to consolidate supply. So why is this NOT a Value Chain?

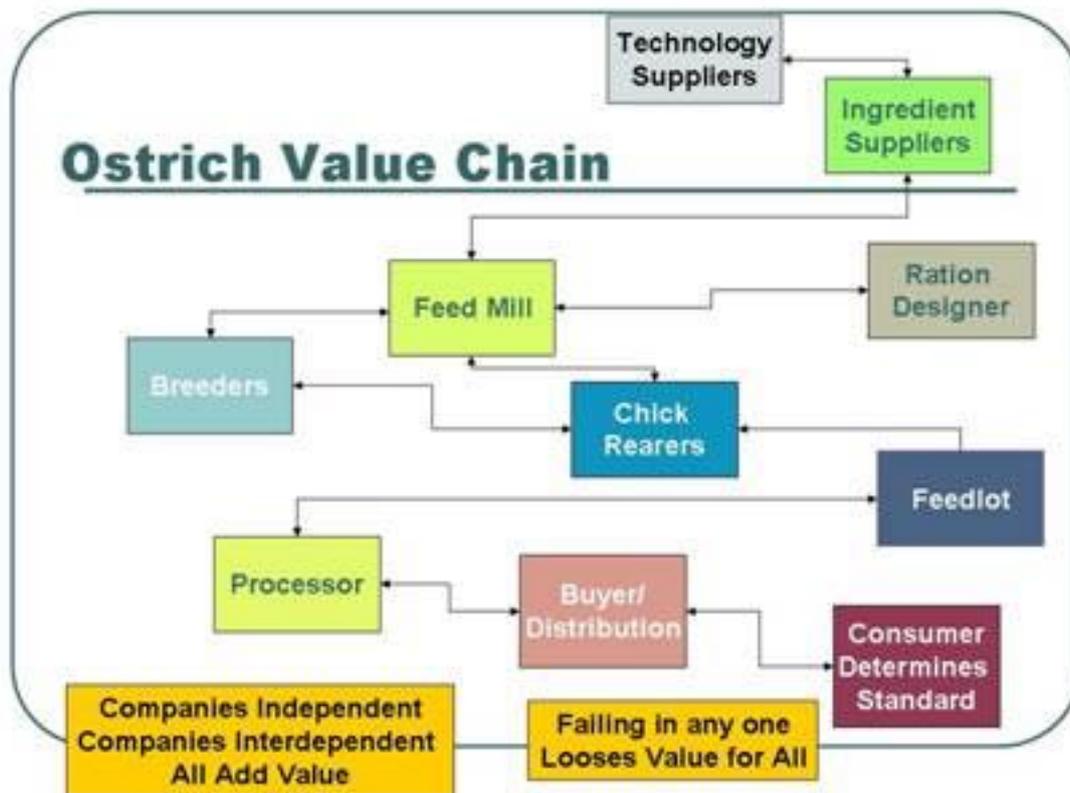
The missing link is Quality Control.

### **What is a Value Chain?**

A Value Chain is where there is collaboration between all processes in the supply chain to ensure that there is no leakage of value through poor performance of one link in that chain.

A Value Chain is an alliance of enterprises collaborating vertically to achieve a more rewarding position in the market. Collaboration builds value and reduces costs. Customer needs drive the value chain, as each customer demands certain standards.

Companies in a value chain are legally independent operations, but become interdependent because they have common goals and work collaboratively to achieve them. They work together over the long term, discussing issues and troubleshooting problems together. It is more than just long-term contracting.



Each member of a value chain is a buyer from the previous step and a supplier to the next step.

Each company can be independent of the other, but each company is interdependent on the other. Each member adds value at the end of the chain by contributing to customer satisfaction.

Changes in agriculture over the past few decades have meant that Vertical Integration in agriculture is essential for economic success. A further reason is the increasing requirement for full traceability. Building a "Value Chain" is a method of achieving a Vertically Integrated operation incorporating many separate businesses working together with a common goal through collaboration and interdependence whilst retaining independence. That common goal optimises the value for all in the chain.

A Value Chain is full vertical integration that improves quality, increases efficiency, enables differentiated products and improves profitability.

### 3. Practical Examples of Value Chains

The following are some practical examples of successful value chains. The first example could be likened to Ostrich. They produce canola oil. Canola oil entered a market that was already well established with more traditional oil seeds such as sunflower and soya. They had to find a way to differentiate their product to penetrate the market. Ostrich is attempting to penetrate a very competitive and highly efficient meat market, competing against species that are long established and known to the consumer.

- Dow AgroSciences' Nexera canola brought a value-added trait to market through an identity preserved (IP) value chain. Nexera canola was specifically designed to consistently deliver Natreon oil. This oil offers the stability and health profile desired by consumers. Greater stability removes the need for the oil to be hydrogenated, thereby improving frying performance and shelf life while eliminating trans-fats in foods. New legislation for trans-fat labelling in the United States and Canada has contributed to exponential growth in end-use demand for Natreon oil.

Key benefits of this value chain include unique marketing opportunities, guaranteed markets, opportunity to extract greater value from a generic, commodity market, defence against competing global crops (soybean), and ability to manage risk. You can read the full details of the success their approach at <http://www.agfoodcouncil.com/serve/chainstory7.html>

- Warburtons is a UK based bakery that purchases their wheat through just 2 grain elevators in Canada and they operate as a value chain with the participating producers. Constant communication happens in this value chain, to continue the value they have created through coordination and to ensure the grain is identity preserved. For Warburtons the value chain has enabled them to continue to produce consistent, high-quality bakery products. The full details of this chain can be viewed at: <http://www.agfoodcouncil.com/serve/chainstory8.html>
- The Red Meat Forum, set up by the Meat and Livestock Commission, based in the UK, to improve efficiencies in the supply chain has been focusing on development of Value Chains. They have recently published studies of 4 value chain initiatives. Three of these studies are with the supermarket chain ASDA, owned by Walmart, and the other is with the retailer, Marks and Spencer, that focuses on the top end of the food market. All studies can be viewed from <http://www.redmeatindustryforum.org.uk>

The following is taken from one of those studies as a summary of the objectives:

- Matching rewards for farmers to improved lamb quality using new quality based pricing techniques that build on the current Lamb Link supply base
- Using different haulage arrangements that both improve the supply of animals to the abattoir and deliver efficiency gains
- Applying efficiency improvements in the cutting and packing lines with better visual management and the roll-out of a programme of "total preventative maintenance".
- Working to reduce the discrepancies between actual sales and orders placed on Welsh Country Foods
- Establishing a Supplier Association to develop a new way of working that embeds the ethos of collaboration and continuous improvement

Further good material on this subject can be accessed from the following links:

Smart Marketing, Cornell University: [http://hortmgt.aem.cornell.edu/pdf/smart\\_marketing/gloy9-05.pdf#search=%22Agriculture%20Value%20Chain%22](http://hortmgt.aem.cornell.edu/pdf/smart_marketing/gloy9-05.pdf#search=%22Agriculture%20Value%20Chain%22)

Value Chain Partnerships for Sustainable Agriculture (VCPSA): <http://www.valuechains.org/>

Alberta Value Chain: <http://www.agfoodcouncil.com/serve/chainindex.html>

It is regrettable that the meeting in Vietnam lacked sufficient support that our hosts felt the need to cancel as it provided us all with an excellent opportunity to discuss how we could implement this approach. It is hoped this opportunity will be reintroduced at either the same or a different venue in the near future.

#### **4. Clothing Industry to use Chicken Feathers**

An interesting report published this week discusses the use of the development of new technology and the motivation for that technology and long term is something that could benefit our industry.

World consumption of natural and synthetic fibres amounts to 67 million tons annually, used not just in clothing, but in carpets, vehicles, construction materials and a host of other everyday applications. Satisfying the increasing global demand for fibres could prove challenging in the near future because of the limited availability of cultivable land, as well as the increasing price and decreasing availability of petroleum.

Developing technology to produce these fibres from renewable and biodegradable resources also satisfies the increasing recognition for environmental awareness. You can view the full report of this initiative, driven by the University of Nebraska, at [http://www.livescience.com/othernews/060911\\_rice\\_chickens.html](http://www.livescience.com/othernews/060911_rice_chickens.html).

### **5. World's largest egg laid in Sweden**

The following article was published on 22<sup>nd</sup> September 2006 and can be viewed on line at: <http://www.thelocal.se/article.php?ID=4993>

The small town central Swedish town of Borlänge is ready to go into the record books. The world's largest egg — just over 2.5 kilograms — is now the prized possession of Gunnar and Kerstin Sahlin.

The record-size ostrich egg was rushed to the post office to be officially weighed after it was laid on Wednesday at the Sahlin's ostrich farm in Stora Tuna.

"It is fantastic," said Kerstin Sahlin, according to Dagens Nyheter. "We are still a bit wound up over this. We didn't think we would get such a big egg this year. When it is bad weather the ostriches pause and wait to lay their eggs. But it has been such a long, warm fall."

The pair once held Europe's record for the largest egg with an egg weighing 2.3 kilograms. The previous world record was an ostrich egg from the Netherlands that weighed 2.484 kilograms. Ostriches are the world's largest birds and routinely lay eggs weighing 1.5 kilos.

The Sahlins are not sure what they will do with the egg. "We are thinking about baking a giant cake," Kerstin Sahlin said, adding that they might make ice cream with it.

### **5. Contributions**

As always, we welcome contributions and articles from your area. Please send them to [editor@world-ostrich.org](mailto:editor@world-ostrich.org).

**Any comments or suggestions, please post either to the members list [woa@world-ostrich.org](mailto:woa@world-ostrich.org) or Craig at [secretary@world-ostrich.org](mailto:secretary@world-ostrich.org)**

**Ask not only what the WOA can do for you but also what you can do for the WOA.**



## Newsletter No. 44 – November 2006

- 1. World Ostrich Congresses**
- 2. Leather Grading**
- 3. Breeder Production**
- 4. Science and Technology of Livestock Production**
- 5. Looking through the Archives – Breeder Production Goals**
- 6. Setting our Goals High Enough**
- 7. Transitioning to Commercial Production**
- 8. Contributions**

### **1. World Ostrich Congresses**

October saw two conferences, one in Belgium, one in Brazil and both conferences have shared the same name - XIII World Ostrich Congress.

Rayan Hayder, one of our Directors, was scheduled to present a paper in Brazil based on his article in September's newsletter, <http://www.world-ostrich.org/member/news42.htm>. The ill health of Ray's father has forced him to offer his apologies, as he was unable to travel to Brazil. We send him our good wishes and hope his father is making a good recovery.

We would all appreciate reports from any members who have attended either of these conferences.

### **2. Leather Grading**

This month we have completed the World Ostrich Association leather grades and published them on the web site <http://www.world-ostrich.org/woaleather.htm>. Premium and Super Premium are two additional grades not included in the NOPSA Leather Grading that has been our industry standard. These new grades more accurately reflect customer demand and encourage production to higher standards.

Studies carried out by the South African researchers proved the younger the birds at slaughter the higher percentage of Grade 1 skins achieved. Scars and blemishes determine grades rather than weight, thickness or follicle development. That study also reported the follicles insufficiently formed and blamed the young age of the birds as the reason, but there is evidence that genetics may also contribute to follicle style and size.

There is further evidence, verified by a study I personally carried out in South Africa<sup>[1]</sup>, that method of rearing controls the age of maturity of the follicles. The significance of producing acceptable skins at younger age indicates the ability to achieve skins with fewer blemishes and scars and therefore it makes sense to introduce these new grades to improve standards and prices.

Nutrition and management are the major factors influencing age of slaughter, scaring or blemishes. Overcrowding, batch size, fencing, handling methods, transport are all management factors that influence scaring and blemishes. We still see many skins ruined by poor handling at slaughter and storage.

We have also published a document to identify the areas of management that influence the quality of the skins. <http://www.world-ostrich.org/woaskinqual.htm>.

There are currently no classifications for follicle size and development even though buyers vary in their requirements, some preferring larger, heavier skins with large follicles, others prefer lighter weight skins with small follicles and others like to roll their skins to flatten the follicles. These items remain subjective to the individual buyers and sellers. We can develop follicle classifications and quantify other elements as volume increases with industry growth.

The greatest benefit of improving standards of production to produce better quality finished products is that the systems required to achieve those standards also reduce the costs of production to enable commercially viable meat production.

Earlier slaughter requires less feed, less infrastructure and faster return on working capital. These factors significantly reduce production costs.

### 3. Breeder Production

Management of the breeder herd is the foundation for improving standards of production. At the beginning of the month, we discussed the results of the report in World Poultry and the numbers in Table 2 of that article. The full article is available to download by clicking on the following link - [http://www.world-ostrich.org/member/download/WP\\_22.8\\_7.pdf](http://www.world-ostrich.org/member/download/WP_22.8_7.pdf).

Readers may remember that those numbers demonstrated again, the huge variation in eggs laid per hen and conversion of those eggs to day old chicks and slaughter birds.

Our member Michael Gross, who produces and slaughters Ostriches in the Philippines, suggested that the numbers reported for the Philippines were inaccurate and we can confirm that Michael is not the only member to suggest that numbers in their own region may not be accurate. We are aware of the problems of achieving accurate production figures.

Michael went on to report the variability of egg quality that he sees between the different farms he incubates eggs for under contract. I asked Michael to quantify the variations between farms. He split the results into three groups. Table 1 shows the details. Note that the percentage of eggs to chicks is 'chicks hatched', not chicks that reach slaughter or maturity.

**Table 1 - Egg Production Comparisons**

	Farms	Hens	Av. Eggs	Av. Chicks	% Eggs to Chicks
Group 1	5	29	55	25	45%
Group 2	10	38	25	6	24%
Group 3	15	59	7.5	1	13%
	<b>30</b>	<b>126</b>	<b>29</b>	<b>11</b>	<b>37%</b>

Readers may remember Michael stating that the worst performers were simply feeding vegetables. Table 1 illustrates that when there is no production that feed is the most expensive feed of all, no matter what the cost per tonne.

This highlights a problem that replicates in every country becoming involved in Ostrich. Unlike other species, smaller ostrich farmers cannot simply go to their local feed company and buy feed that provide the basic nutritional needs for ostrich, let alone feed with productive characteristics.

Working in small volume to provide the right feed is expensive, particularly when importing all major ingredients, as in the Philippines. A certain volume is required to achieve ingredients at reasonable cost to prevent tying up valuable working capital for an extended period, as happens when turnover is slow.

When forced to feed incorrectly, production is uneconomic because bird production is so low, resulting in the costs per unit of production too high to be competitive and commercially viable. The above table also shows that at worst there is no production. Inconsistent production influences negatively marketing efforts because the supply is unreliable.

What is the solution? Sufficient resources are required to develop the required infrastructure to coordinate food provision, production, slaughter and marketing. The more who can work together, the greater the economies of scale and pooling of marketing costs.

#### **4. Science and Technology of Livestock Production**

The science and technology of livestock production is a broad multidisciplinary field that encompasses many aspects and interrelationships between all the parts to make the whole. The following are some of the different elements that must all be in place to make the whole and there are many elements to each section:

-  Crop Production (e.g. Seeds, Crop Nutrients, Disease Control)
-  Livestock Feed (e.g. Nutrient Levels, Ingredient Types, Vitamin and Mineral Interrelationship to each other and the other ingredients in the rations)
-  Feed Management (e.g. Feeding Times, Feeding Rates, Freshness)
-  Farm Management (e.g. Records, Biosecurity, Environment)
-  Veterinary (e.g. Preventative medicine, such as Vaccination Programs)
-  Genetics (e.g. Use records to identify and select to optimise egg laying, progeny high growth rate, good feed conversion)
-  Testing Methods and Result Analysis (e.g. Identifying the true value of inputs and developing correct responses to them)
-  Other support (e.g. Handling systems, transport, benchmarking)
-  Products (e.g. Production methods, slaughter methods, processing methods)

Ostrich production is no more than 15 years as an industry looking towards meat production as the primary product, but still recognising the value of leather and other by-products. During this period, new countries have started production in small numbers with small farmers purchasing breeders to build a business in isolation and limited support. Initially the market is for breeders selling to other farmers. As identified above, a certain infrastructure, and strong market, is required to be in place to enable economies of scale for all the elements above, even to support a strong breeder market.

Nutrition of the animals is at the top of the list. Every element is critical to the whole, but as in all commercial livestock production, no matter how good every other element is, correct Nutrition is the foundation to achieve high production goals. Modern agriculture is about precision. Nutrition alone cannot achieve those production goals; precision agriculture is dependent on all other aspects that make up the whole.

The production goals set in the WOA Benchmark Targets, <http://www.world-ostrich.org/targets.htm>, are very achievable and required for commercial viability. To achieve those goals the first step is for the nutrition program with a design capable of sustaining those levels of production and then supported by all the management factors required for modern precision agriculture.

#### **5. Looking through the Archives - Breeder Production Goals**

In the early 90's a number of feed companies in the United States produced Ostrich rations with significantly higher nutrient values capable of sustaining reasonable production goals than are experienced generally throughout the industry today. There is sufficient evidence to indicate production levels were excellent, although still extremely variable for many reasons, including the inexperience of producers, as all were new to ostrich, and many with no

production livestock experience. There were a good number of reports of hens achieving in excess of 100 eggs per annum. The highest number reported was by Karen Hicks [2] quoting a hen producing 167 eggs in one season.

A leading South African Ostrich nutritionist is on record at a conference held in California in 1997 making the following statement:

Quote **"if the feed formula is correct and birds are getting the nutrients they need, they will produce 20 chicks average per hen and the chicks will have a 20% mortality rate"**. End Quote

He strongly indicated that a well-designed feed formula would have those production parameters and that he designs his feed formula to support that production goal. Why would a nutritionist design production goals for just 20% of the potential production and accept any mortality? This does not make scientific or commercial sense.

Clearly to design rations for such low production goals results in severely nutrient deficient breeders, poor production for producers and low profitability for all, as the published figures continue to indicate is the case.

Many books and publications have published the nutrient levels reported by this nutritionist and fellow scientists as correct for ostrich and assumed proven to support production goals to optimise the genetic performance potential. Many nutritionists and feed mills followed these guidelines.

## **6. Setting our Goals High Enough**

Newsletter 25, <http://www.world-ostrich.org/member/news25.htm> asked the question "Are you setting your Goals High Enough?" Returning to the archives, I remember listening to a talk from a nutritionist at an International Conference telling the audience:

Quote: **"Your breeders eat nearly 1 tonne of food per annum and therefore that food must be cheap"**. End quote

Stated in that way producers fail to look beyond the "price per tonne" of that feed, just make it as cheap as possible, totally ignoring production targets or even the birds most basic needs for good health. The key is to develop feed to maintain them in good health and optimise production targets; then produce it at the lowest cost possible and that is where economies of scale enter the equation.

Which target is more cost effective?

- 1 hen producing 100 chicks per annum

or

- 5 hens to produce 100 chicks per annum

Farmers achieving the first option save the following costs:

- Capital costs of additional breeders
- Infrastructure required to keep those additional breeders
- Feed for the additional breeders
- Labour costs to maintain those additional birds

Once started on the right track, it will take some years to reach an average production goal of 100 chicks per annum, but it is clear from results in the early 90's that this is an achievable goal. It is clear that it is essential to raise production goals, even if still operating in a breeder market.

## **7. Transitioning to Commercial Production**

We know from communication we receive privately and sourcing product to supply the markets we currently have, that producers of all size of operation continue to seek guidance.

Understanding the production issues is critical as the marketing of all agricultural products starts on the farm. Some examples of farm aspects that are marketing issues:



Production



Traceability



Product Uniformity and quality



Animal Welfare (an import issue in an increasing number of markets today)



Costs of Production (e.g. underweight birds increase processing costs)



Meat Residues

Consumer concerns on the safety of their food are putting increasing pressures on standards operating in slaughter plants, adding to processing costs.

These additional market requirements such as traceability, hygiene measures, veterinary inspections, slaughter plant building standards etc. increase costs and collaboration to develop economies of scale helps keep those costs to a minimum. Today, it is increasingly challenging for smaller operators in any specie to work in isolation and that is why it is even more difficult for smaller operators in a new livestock production sector, as Ostrich is. The value chain approach <http://www.world-ostrich.org/member/news43.htm> is proving a successful method to keep these costs at a minimum while enabling companies to remain independent. We have access to a funding mechanism that we can discuss with any groups, or larger companies that if appropriate, can enable the provision of adequate resources.

## **8. Contributions**

As always, we welcome contributions and articles from your area. Please send them to [editor@world-ostrich.org](mailto:editor@world-ostrich.org).

**Any comments or suggestions, please post either to the members list [woa@world-ostrich.org](mailto:woa@world-ostrich.org) or Craig at [secretary@world-ostrich.org](mailto:secretary@world-ostrich.org)**

**Ask not only what the WOA can do for you but also what you can do for the WOA.**

[1] Influences of Ostrich Skin Quality . . . Age or Nutrition? <http://www.blue-mountain.net/bulletin/bull79.ht>

[2] Ratite Reproduction, Proceedings of the Conference of the Association of Avian Veterinarians, New Orleans, pp.318-325, K.D. Hicks



## Newsletter No. 45 – December 2006

1. **New Look Newsletter**
2. **Agricultural Outlook**
3. **Farm management**
4. **Commercialisation of Small Holder Agriculture**
5. **International Supermarkets**

### 1. **New Look Newsletter**

This newsletter introduces a new look. Please let me know if you experience any difficulties downloading or reading. This move is to overcome the some spam filters blocking delivery of the newsletters published in the previous format.

### 2. **Agricultural Outlook**

The web site of the FAO is always an excellent source of information. They have recently published the Agricultural Outlook 2006 to 2015. This is a joint publication by the Organisation for Economic Co-operation and Development (OECD) and the Food and Agriculture Organization of the United Nations (FAO). The report benefits from the commodity, policy and country expertise of both organisations. This annual report analyses world commodity market trends and medium term prospects for the main agricultural products. It shows the influence of economic developments and government policies on these markets and highlights some of the risks and uncertainties that may influence market outcomes. In addition to OECD countries, the market projections in the report cover a large number of other countries and regions including the agricultural giants of India, China, Brazil and Russia as well as Argentina, South Africa and several least developed countries.

A short version of the report is available for download and the full version can be ordered from this web page: [http://www.agri-outlook.org/document/12/0,2340,en\\_36774715\\_36775671\\_37040780\\_1\\_1\\_1\\_1,00.html](http://www.agri-outlook.org/document/12/0,2340,en_36774715_36775671_37040780_1_1_1_1,00.html)

Their statistical database has gone through a major upgrade though the transition to the new database is not yet quite complete. This web site is a great source of information that is important to keep in touch with agricultural market and production trends.

### 3. **Farm Management**

One section of the FAO web site makes this introductory statement under the heading of Farm Management:

Quote: ***Powerful driving forces are changing farming systems across the world. Globalisation and market development are opening up new opportunities for farmers and local markets are challenged and sometimes overwhelmed by lower priced imports; the result is rapid commercialisation of smallholder agriculture in many parts of the developing world.***

***Urbanisation is increasing the number of people for whom food must be produced by farmers, increasingly delivered through supermarkets. As a consequence, farmers***

**are intensifying existing patterns of production, diversifying into new lines, seeking off-farm work, expanding business size and even existing agriculture in an attempt to improve their livelihoods and escape poverty.** end quote

This statement makes two very important references that we will focus on in this newsletter as understanding them well helps to explain the challenges facing developing our industry.

#### **4. Commercialisation of small holder agriculture**

Producers have tended to go in two different directions over the past few decades, driven by the “green revolution” and the effect of globalisation and changes in market delivery.

The progressive farmers have adopted the new technologies and management systems, consolidated and produce in volume with increasingly efficient methods of production. These efficiencies are a combination of:

- Production technology inputs (e.g. fertiliser, weed killers, vitamins, minerals, pharmaceuticals)
- Management systems to support that technology (e.g. machinery, computers, records, systems, biosecurity)
- Genetic improvement in livestock, fruit, vegetable and grain production (e.g. winter hardy seeds, high yielding grains, fast growing pigs, high yielding dairy cows)

The result of introducing these efficiencies in production is increased yields, reduced unit costs of production, and greater consistency of products required by the buyers of these supermarket giants.

Figure 1 is an illustration from the USDA Farm Policy 2001 to illustrate how markets have changed over a very short period. Note how in a 10 year period selling has moved from 5% selling direct to processors on contract to nearly 70% in the US. It is likely that this figure has moved even closer to 100% by now. We see similar trends in other regions and across most produce.



**Figure 1 - Changes in Marketing Methods**

#### **5. International Supermarkets**

Newsletter No. 20, Item 3, discussed the increasing power of the supermarkets and their impact on the agricultural market place.

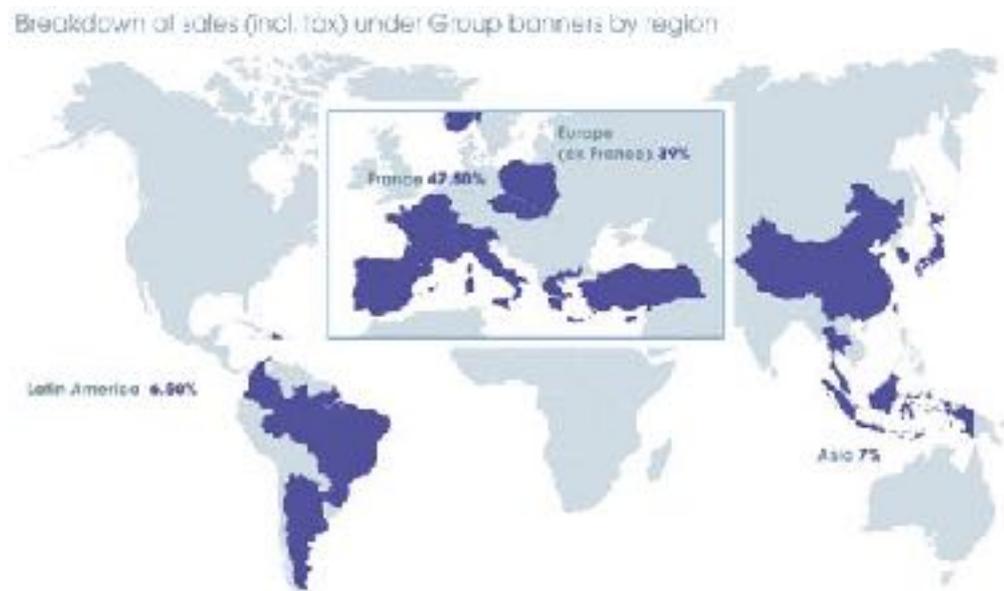
Focusing on just 3 of the major International supermarkets illustrates how they are developing globally and remember they purchase globally from the most efficient producers capable of supplying the volumes they require. The "green revolution" has made this rapid growth possible enabling production of food at significantly reduced costs in real terms and available to increasing numbers of people.

### **WalMart**

WalMart, founded in 1962, is the largest retailer in the world and a US owned corporation. Outside the United States, they wholly own companies in Argentina, Brazil, Canada, Puerto Rico, and the United Kingdom but recently sold their retail operations in South Korea and Germany. They have joint ventures in Japan, Guatemala, El Salvador, Honduras, Nicaragua and Costa Rica.

### **Carrefour**

Carrefour, founded in 1959, is a French owned supermarket chain, described as the leader in Europe and 2<sup>nd</sup> worldwide.



**Figure 2 - Carrefour areas of Operation**

News item published on 20<sup>th</sup> November, 2006.

Quote:

***"Bharti ties retail knot with Wal-Mart***

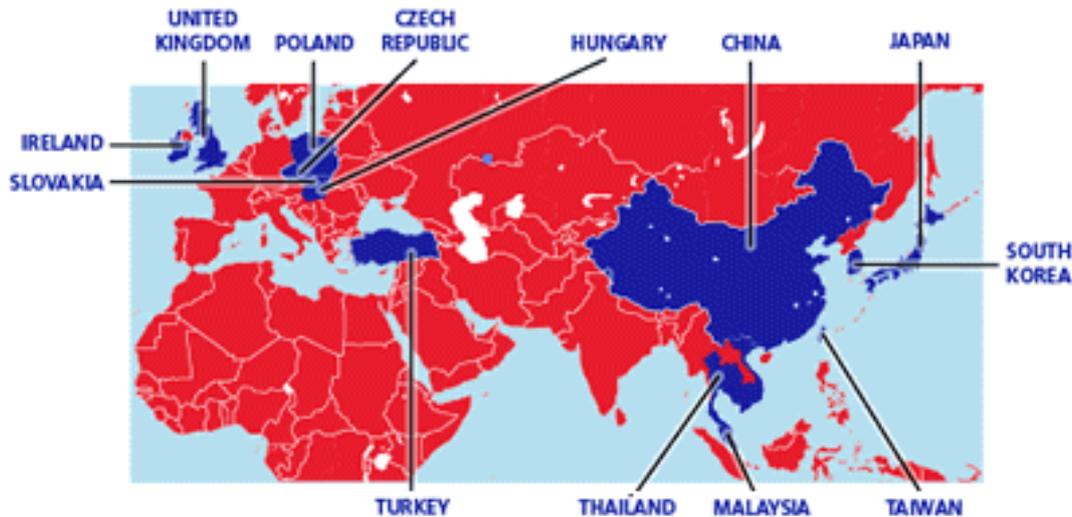
***In a scoop appearing in NDTV, telecom major Bharti has finally tied the retail knot with the world's largest retailer, Wal-Mart.***

***Carrefour, the other contender was left in the lurch as a result of aggressive bidding by the former. To get around archaic Indian FDI rules, Bharti will take up the front-end retail operations while Wal-Mart will power the back-end supply chain. For retailing rights, Bharti will pay a royalty to Wal-Mart. As a strategy, an agreement is being sought with a large foreign real estate group for large investments in real estate that will be required.***

***The deal seems to have the blessings of the Government and industry minister Kamal Nath even promised more liberalized norms for foreign companies investing in the supply chain. Wal-Mart already sources goods worth \$1.5 billion. The deal is likely to change the face of modern Indian retailing. The news has already paled into relative insignificance, Reliance's recent Hyderabad launch".*** Source: <http://www.rvgonline.com/>

### **Tesco**

Tesco, founded in 1919, is the largest British supermarket chain. Figure 3 illustrates their international growth. In addition, they are on target to enter the United States in 2007.



**Figure 3 - Tesco areas of Operation**

A news item published on 6<sup>th</sup> October, 2006

Quote: ***“Tesco & Carrefour exchange stores  
In an unusual but astute business move, Tesco and Carrefour have agreed to swap stores and their operations located in Slovakia and Taiwan.*”**

***As part of the deal, 11 Carrefour stores in the Czech Republic and 4 stores in Slovakia will be transferred to Tesco for Euro189mil. In exchange, Carrefour will receive 6 Tesco stores and 2 sites in Taiwan for Euro132mil.***

***The swap provides Tesco with the opportunity to grow its businesses in the highly competitive Czech and Slovak markets and exit the Taiwanese market where it is lacking critical size.*** Source: <http://www.rvgonline.com/>

This clearly shows how we are operating in a rapidly changing marketplace.

The statement in Item 3 referenced small producers diversifying. Many diversified into Ostrich production before development of markets, before identification and development of performance genetics and with no clear leadership. As can be seen, this move into diversification came at a time of dramatic change in the global agricultural marketplace.



## Newsletter No. 46 – January 2007

1. **Seasons Greetings**
2. **January 2006**
3. **WOA Publications**
4. **Marketing**
5. **Country Liaison Reports**

### 1. **Seasons Greetings**

Your directors wish you all a happy holiday season and prosperous 2007.

We are a small industry and reviewing the achievements for 2006, we can see that the World Ostrich Association has some importance within our industry. The newsletters have many articles worthy of a second reading. This newsletter will highlight some of the discussions and achievements and encourage you when rereading the newsletters to note how different aspects interrelate to each other.

### 2. **January**

The newsletter last January discussed 3 subjects of significant importance to our industry – Published Papers, Benchmark Ostrich Production Targets and Avian Influenza.

#### ***Published Scientific Papers***

We discussed the papers presented during the World Ostrich Conference in Madrid and their continued failure to approach ostrich research in an up to date manner that supports commercial production.

#### ***Ostrich Benchmark Production Targets***

Benchmarking is an essential management tool for producers to evaluate their performance against measurable targets. January's newsletter reported the development of benchmark targets for Ostrich, with the final document published with the February newsletter. These benchmark targets are an important instrument and set very achievable targets. It is crucial to aim for these targets to achieve commercially viable production.

#### ***Avian Influenza***

The spread of H5N1 was not as devastating as feared, but remains a serious threat. The H5N2 strain that hit the industry in South Africa continued to be a challenge for their industry for most of the year, with normal meat exports finally resumed in November.

The WOA published the Avian Influenza Guidelines for Ostrich in January.

### 3. **WOA Publications**

The WOA now has a number of publications to support its members and a commercial ostrich industry in addition to the above 2 mentioned documents.

Another publication produced during the year is the "Guide on how to value Ostrich". This document is an extremely important document as it puts into context the importance of the "productive value" of farmed Ostrich. The document raises the importance of farm records – a

basic for all livestock production, not just to satisfy traceability, but also to assess genetic performance and the commercial viability of the production.

We also discussed in April the importance of understanding the "productive value" of Alfalfa (lucerne) and how to calculate that value. World Ostrich Association member, Blue Mountain, published a document on this subject that they have made freely available to Ostrich producers.

The WOA already have "Carcass Grading", "Meat Yield Classifications" and "Factors Influencing Meat Quality". We added "Leather Grading" and "Factors Influencing Skin and Leather Quality" later in the year.

All these documents are available for down load at the web site, with the exception of the Alfalfa document, which is available at the Blue Mountain Ostrich web site.

#### **4. Marketing**

Developing the markets continues to be high on the agenda of concerns for many members. The grading systems are an essential marketing tool. Many articles throughout the year discussed different aspects of markets and marketing and how grading fits into marketing. In July, we discussed the market potential, the barriers to achieving that market potential and the opportunities for those overcoming those barriers.

We know talking to many of our members that poor production continues to be a major barrier, resulting in insufficient production to service markets and/or costs of production too high as a direct result of the poor production.

#### **5. Country Liaison Reports**

One reason given for joining the World Ostrich Association is to learn about the industry and activities in other countries. Your directors pass on information as we receive it, but regular reports from those on the ground in your own country are always welcome. We received two such reports during the year. The first from Iran in January, containing excellent information future plans. The second in September from Saudi Arabia, reporting many of the problems other countries have experienced.

In October, the articles discussed ways other industries have enabled smaller producers to increase value to compete in the market place through the development of value chains.

We will continue to report on different aspects of agriculture and the markets as they affect our industry. We will always welcome reports from your own region.

We wish you all a happy and successful 2007.



## **Newsletter No. 47 – February 2007**

- 1. Developing Markets**
- 2. South Africa**
- 3. United States**
- 4. Australia**
- 5. Israel**
- 6. Turkey**
- 7. Projections of Global Meat Production - 2050**
- 8. Summary**
- 9. Comparative Annual Meat Tonnage (graphic)**

### **1. Developing Markets**

Market development is the single most important issue to achieve a successful transition from breeder markets to commercial production. Over the years, I have personally received a number of messages from people and companies starting out in Ostrich. One of their first statements references: "as ostrich is new to our country, there is no market, so we plan to export our meat." Many assumed there are mature markets in other parts of the world, when in fact Ostrich meat is a new meat everywhere. Most ostrich meat is currently consumed in the EU, but when measured against the mainstream meat industries ostrich production remains very low and fragmented.

Many of you will have seen the diagram in Figure 1, at the end of this newsletter. This diagram illustrates that total world production of ostrich meat in 2003 was only 30% of the production of an average beef feed lot. See [Newsletter 7 Item 3](#) for full details. We do not have accurate ostrich production figures today, but looking at that chart, we can all recognise that it no longer is an accurate representation of current world production, which is probably only 50% of the figures at that time. There are many reasons for this, but one is dependency on export markets rather than building local markets first to provide a sound foundation. This month's newsletter will discuss the experiences of a few countries.

### **2. South Africa**

Single channel marketing of Ostrich products in South Africa was the main driver for the development of Ostrich production outside of the country. The marketing organisation strictly controlled production for the supply of skins to the exotic skin market as the primary product. Therefore no market for the meat was developed. This led to the distribution of Ostrich and the development of breeder markets, at first in Israel, the United States, Northern Europe - including the United Kingdom - and Australia, before extending to almost every country in the world today as these countries floundered in the transition from breeder market to commercial production.

The first country to market the meat actively was Israel. Until deregulation and break up of the single marketing system, South Africa exported only the Fan Fillet, with most meat sold to Switzerland. The local meat processing companies purchased the secondary cuts and trim to use the meat as meat was a by-product to the skin industry, exporting finished leather mainly to Asia and the US.

Many South African producers pushed for deregulation of the industry to have an opportunity to increase production and grow the markets. Deregulation took place in 1994, with the European market targeted for the meat, rather than develop their domestic market first.

There was limited knowledge about the meat and no import protocols were in place. New slaughter facilities require the necessary approvals. Farm production systems were unproven and many remained using extensive systems, resulting in huge variations in meat quality from one farmer to another. No meat charts or muscle identification were in place. These all had to be developed and that takes time and money. All these factors are essential to marketing and apply to all countries, not only South Africa.

Building new markets requires sustainable, consistent supplies. Consistency of supply is achieved by incorporating production methods that ensure production is not disrupted by low egg production, poor hatchability, high mortality etc. and the ability to service the market without interruption.

South Africa suffered a number of bans on exporting the ostrich meat, initially because of outbreaks of Newcastle Disease and then at the end of 1996 Congo Fever became an issue blocking exports for 6 months. Protocols for handling such events take time to develop with a new industry, as there were no parameters in place to make judgements. These export bans caused disruption in supply to their markets and the value of the bird paid to farmers.

The Congo Fever ban took the heat from the developing production, with many leaving the industry. With no development of local markets for the meat, the industry put in place a policy to cut back production at the beginning of 1998 to enable the skin market to recover, as the skin market remained the primary product. The foot and mouth outbreak in the UK in 2000 put pressure on demand for alternative meats, with high demand for ostrich. Production grew until Avian Influenza hit and once again stopped the flow of meat exports. The industry today probably is half the size it was before Avian Influenza. That is due to a combination of heavy culling and poor producer returns.

Had South Africa focused on the local meat market first, it would be possible to develop it free of such interruptions; however growing the industry did not suit an industry focusing on the exotic market for skins as the driving product. <http://world-ostrich.org/member/news29.htm>.

### **3. United States of America**

In 1996 the US was at the end of the Breeder market needing to change fast to make a successful transition to commercial production. In that year, Daryl Holle gave a presentation to the Central United States Ostrich Association in Omaha, Nebraska, with most of the major players present and all clearly aware of the positives of these amazing birds.

His presentation that day covered 8 points required to successfully convert from a breeder market to slaughter industry and create the awareness that this had to be actively pursued with a sense of urgency:

**Point 1:** Generate awareness of the need and open discussions on how to achieve

**Point 2:** Generate understanding of ingredient costs versus ingredient value

**Point 3:** The need to produce uniform quality of product for the consumer

**Point 4:** Understand the need to produce feed of higher production output as essential to economic ostrich production and success

**Point 5:** Market Ostrich for what it is - a 99% lean, boneless, highly nutritious, red meat that commands a premium price

**Point 6:** Invest in creating a local market for all products

**Point 7:** Build business plans based on development of local markets, not export markets

**Point 8:** Put together a large group of dedicated people to create a system that will:

- ensure uniformity of product
- develop high volume output at the lowest cost possible per unit

- put in place adequate financing
- run on sound business lines

The presentation concluded with a prediction that if these things did not happen, the ostrich industry was likely to fail in the U.S. History tells us what happened; none of those points were followed resulting in the near total collapse of the US industry and many countries since have followed the same route.

#### 4. Australia

A report on the Australian industry written by Chris Tuckwell, published by the RIDC (Rural Industries Research & Development Corporation) states 120,000 ostriches farmed in Australia in 1997, with projected slaughter numbers of 100,000 by 2,000. You can review the report at <http://www.rirdc.gov.au/pub/handbook/ostrich.html>. We know now that the Australian industry did not achieve those slaughter numbers.

The Australian Ostrich Association set up the Australian Ostrich Company (AOC) as the marketing arm for their new industry as they recognised the need for a central organisation. Their marketing focus was the export market. Newcastle Disease in poultry in the country shut down the export market for a considerable length of time and lacking a strong domestic market developed for the meat, there was no market for the meat.

The company also ignored the importance of ensuring consistency of product and producer production methods that ensured high production, cost effective output. This is demonstrated in "Benchmarks for New Animal Products Emu & Ostrich Production" published by the RIDC, <http://www.rirdc.gov.au/reports/NAP/00-136.pdf>, illustrating again the tremendous variation in production from farm to farm.

#### 5. Israel

Israel led the way in marketing of the meat as a source of valuable revenue for the bird, but the value of the skins was the foundation of their industry. The Jewish religion is the only religion that does not allow Ostrich meat to form part of the diet, as it is not Kosher and hence not possible to develop a local market. Therefore, when the recent Avian Influenza outbreak in the region prevented the export of the meat, this has resulted in severe problems for their industry.

#### 6. Turkey

Please welcome Dr. Asli Artvinli as the Country Liaison for Turkey. Dr. Artvinli has written a detailed report on the current situation in Turkey. The report will form a supplement to this newsletter <http://www.world-ostrich.org/member/news47turkey.htm>

#### 7. Projections of Global Meat Production - 2050

Dr. Thomas Elam published this article in August 2006. The article discusses the doubling of meat demand by 2050 and what is required to achieve it. You can read the full article by clicking on this link. <http://www.cgfi.org/cgficommentary/ProjsGlobalMeatProd82106>. Below is the discussion on the implications. His focus is improving understanding of the need to make current agricultural land more productive to achieve the additional meat. Ostrich can contribute to this given their efficient use of feed, when that feed contains productive ingredients and ration design enables them to optimise the utilisation of those ingredients. Point 2 and point 4 in Item 3 USA, reference the need to understand these two important factors and their importance in commercial production.

An additional, very important factor with Ostrich in this discussion is the high lucerne (alfalfa) content of their diet. Not only is lucerne highly productive containing many nutrients, it is also a valuable crop in any crop rotation program. Lucerne fixes nitrogen in the soil, helping the soil to remain productive whilst limiting the requirement for artificial chemicals.

**Quote: *Implications: With no more, and perhaps less, productive farmland available over the next 50 years, this projected growth in meat production represents a major challenge to both farmers and the environment. More meat means more feed and forage will need to be produced, and more land will be required for housing the***

***additional animals that will be on farms. In addition, more production of all crops will be needed, including those used for direct human consumption and for industrial uses.***

***To support the higher animal product production level of 2050 it is required that feed crop yields will need to more than double if we are to increase meat production in line with increases in GDP and population that will almost certainly happen over the next 45 years. To achieve this level of yield increases implies that agricultural research aimed at increasing feed crop yields should be a high priority.***

***Failure to substantially increase crop yields in line with the meat production projections will result in increased pressure to push crop production onto more of the world's fragile lands that are not being farmed today. If feed crops production is pushed onto marginal land the result will be a degraded environment, increased soil erosion, increase water pollution, reduced wildlife habitat, and increased use of chemical and fertilizer inputs.***

***The only environmentally responsible way to accommodate the world's increasing demand for meat is to produce increased amounts of feed crops without using more land. The only way to accomplish that is to substantially increase yields. End quote***

## **8. Summary**

Every member of our association is concerned about how to develop their markets and make a successful transition to a prosperous commercial slaughter industry.

Attempting to build our industry based only on exporting product, experience has proven is disastrous because disease can shut down exports overnight. When an industry is buoyant based on local market supply, then export markets can enhance market opportunities.

Disease outbreaks never shut down the US industry from exporting, so why then did it still fail? The industry failed to pay attention to uniformity of product or consistency of supply in a unified manner to develop the national market. Instead, it became fragmented into low volume preventing any from making fair returns. Processing companies purchased birds regardless of age and quality to slaughter and export the meat.

There will be some readers suggesting that they have to export because prices are too low in their country. While volumes are low, costs are inevitably higher in whatever country we are operating; operating in low volume requires higher selling prices.

At this stage of our industry, Ostrich meat is not a commodity. Ostrich meat is a niche product in very limited supply. Our target markets is high-income consumers willing to pay good prices provided the product is quality and worthy of the higher prices. Most all countries have these potential customers. They are demanding customers, requiring top quality consistent product. As volume increases, economies of scale help reduce costs to enable prices to come down and expand the range of the target markets.



collaboration between universities and the industry. These three ostrich farms constitute the basis of ostrich industry in Turkey (1).

Table 1. Regional distribution and the population of ostrich farming enterprises in Turkey.

Regions	Number of farms	Number of ostrich breeder	Number of ostrich chick	Total	%
Marmara	73	1081	2259	3340	33
Central Anatolia	47	967	1628	2595	26
Aegean	54	843	1507	2350	24
Mediterranean	14	278	418	696	7
Southeastern Anatolia	23	447	173	620	6
Black Sea	16	240	65	305	3
Eastern Anatolia	3	43	41	84	1
Total	228	3899	6083	9990	100

Source: Ak and Cimik (2002)

Ostrich farming in our country is facing very important issues especially in organising, slaughtering, processing and marketing products. Therefore, the market of ostrich products in Turkey has not been set up yet (1). Most of the farmers have realised that it needs a long-term investment to obtain a satisfactory conclusion. Consequently, there has been a decrease in the number of large and small ostrich farmers in Turkey since 1995. The number was approximately 500 in its rapidly growing years; today's number is only around 150.

### Issues of Ostrich Farming in Turkey

Ostrich producing enterprises in Turkey are generally small family businesses (1). Areas of almost half of the farms are 10 thousand m<sup>2</sup> or below. Percentage of enterprises with an area of 60 thousand m<sup>2</sup> or more is only 12%. The small size of enterprises is an important factor affecting the opportunity to use various services and efficient operation (1).

It has been estimated that more than half of ostrich farms in Turkey have neither conducted any feasibility survey nor received any training on ostrich farming before establishment. Only 2% of ostrich enterprises have been estimated to have benefited from incentive during establishment (1).

An important part of ostrich farms should be defined more as hobby and recreation sites rather than commercial farms. Number of enterprises with 40 and more reproduction species is only 14% of the total number (1).

While 62% of ostrich farms operate as trios, 38% operate in the form of colonies. 53% of enterprises allocate insufficient area per a breeder, below 250 m<sup>2</sup> (1). At almost half (40%) of enterprises' egg yield per a female is below 40. Low reproduction characteristics of animals used for reproduction and failure to provide suitable environmental conditions for such animals leads to a considerably low egg yield at ostrich farms. Number of ostrich farms with 60 and more eggs per female is less than 10% of the total number (1).

Almost half of reproduction species at ostrich farms in Turkey are not numbered, no necessary records can be regularly kept (1). Although an important number of farmers stated that they kept efficiency records, such records are usually very general things related with farming and are not the type that would provide opportunity for breeders' evaluation and selection (1).

$\frac{3}{4}$  of ostrich farms in Turkey have been estimated to have incubators to place produced eggs for incubation themselves. Half of ostrich farms in Turkey report low fertility rate (below 60%) (1). According to the estimates, low characteristics of ostriches allocated for reproduction and failure to provide suitable environment conditions for such birds leads to low egg yield and fertility rate at ostrich farms (1).

The most important issues faced by ostrich farmers in Turkey can be listed as follows according to their importance (1):

1. Marketing	20%
2. Lack of Technical Knowledge	15%
3. Veterinary and Health	11%
4. Feed quality and prices	9%
5. Incubation	7%
6. Other	38%

Lack of interest toward organizing is observed among ostrich farmers. The only agency uniting ostrich farmers in the country is still the Foundation of Ostrich Farmers, which is legally incorporated in 2001, Bursa (1). There are 71 members of this foundation and 80% of these members are farmers. The main objectives of the Foundation of Ostrich Farmers are to provide solidarity among the ostrich farmers, to make any attempts throughout ostrich industry by preserving all the rights and benefits of the farmers, to enhance their knowledge by organizing congresses, conferences, panels or courses, and to promote domestic and foreign relations about the industry. There is also a knowledge about a cooperation established in the district Salihli of Manisa, which is supported by and works in the dependence of the Ministry of Culture and Tourism.

During the first years when the farming was yet newly started, important problems have been faced in slaughtering (1). Slaughtering of breeders outside slaughterhouse has led to important damage to the animal skin, at the same time creating a risk for meat consumers. By-products such as bones, fat, nails, etc. couldn't be used when animals had been slaughtered out of slaughterhouse. There is only one ostrich slaughterhouse available in Kayseri, which performed contractual production and slaughtering at the moment (1). They had experienced problems in obtaining ostrich for slaughter. There is no knowledge about this slaughterhouse if it is still active or not. However, with the newly issued legal regulation, a first-class livestock slaughterhouse can be used for ostrich slaughtering. Furthermore, there is some important and hope-arising progress towards assessing ostrich products (such as meat, skin, egg and egg shell). However, absence of any organization in slaughtering and product processing is a setback for the development of this farming branch. Absence of an organization makes it more difficult to market its products (1).

Because ostrich farming is a new type of animal farming in our country, the number of researches conducted on this area is limited. Insufficient priority given to ostrich farming and ostrich diseases in training programs makes the number of specialists available on this subject very scarce (1).

### **Conclusion**

Ostrich industry in Turkey may develop if the important problems such as organizing, supervision, health, care and nutrition, incubation, slaughtering, product processing and marketing are resolved urgently (1).

### **Reference**

1. Ak, I. Karaman, S. Ostrich Breeding in Turkey: Problems and Opportunities. XII. World Ostrich Congress, 14-16 October 2005, Madrid. p: 341-346.



## **Newsletter No. 48 – March 2007**

- 1. Australia and New Zealand**
- 2. Analysis and Discussion**
- 3. Processing Costs**
- 4. Principles of Productive Agriculture**
- 5. Maximising Performance, Reducing Production Costs**
- 6. Bird Flu Turkeys – England**

### **1. Australia and New Zealand**

Our thanks to Bert Rayner for writing the following report from Australia and New Zealand.

Production has dropped significantly over the past few years.

As in all producing countries, no one has yet farmed ostrich to their full potential. Various reasons apply to all countries

- a) lack of consistent markets
- b) lack of 'production agriculture' principals
- c) lack of consistent quality produced

Cost of processing per bird is roughly as follows:

Australia +/- USD 75.00  
New Zealand +/- USD 95.00

Both Australia and New Zealand have only three major breeding farms each. Australia has one abattoir processing birds and New Zealand two. Estimates of production would be 7,000-11,000 birds in each country.

With correct nutrition and farming methods, the industry can re-build in the region but it requires drastic action.

Australia has the current problem of the worst drought in 100 years and feed prices have doubled in 12 months.

### **2. Analysis and discussion**

Bert identified 3 major issues, but all 3 interrelate and are interdependent on each other. Consistent markets are dependent on a consistent supply and products of marketable quality and consistent quality.

As an industry, we continue to produce extremely variable muscles sizes, meat colour and unreliable supplies. Pig, Poultry and Beef production has become extremely efficient over the past few decades, with producers able to provide the markets with the products they demand. That is in contrast to producing the products and then expecting the market to take it regardless.

Just last week I received communication from a producer in his third or fourth season. He was concerned because he has a market for his produce, but his hens are not laying eggs. The

ability to produce consistency in supply and product is an essential part of the marketing plan of any livestock business.

### 3. Processing Costs

This is an opportunity to discuss slaughter and processing costs. Processing is made up of a number of processes and it is important to know which processes are included and at what stage of the process the meat is packaged when costs are quoted to avoid confusion:

- Slaughter
- Deboning
- Muscling Out
- Deskinning/Demembrating
- Portioning and other value adding

Other factors that influence processing costs:

- Volume – world production of ostrich remains at a fraction of single production units in other specie.
- Regular throughput
- § South Africa has some of the lowest ostrich slaughter costs, yet a major complaint of the managers was producers cancelling booked delivery of birds at the last minute leaving a plant with reduced numbers at best or no slaughter for the day at worst.
- § Ostrich is seasonal
- Interruption to other slaughter
- § Many are slaughtering very low volumes in multi-specie plants. Management of these slaughter plants will expect to slaughter those birds with sufficient return to make it worth their while.
- Slaughtering takes virtually the same amount of time regardless of meat yield, therefore the greater the meat yield, the lower the costs per kilo.

### 4. Principles of "Production Agriculture"

Bert referenced the need to adapt to "production agriculture" principles, this is essential to achieve the consistent markets, product quality and supply cost effectively. Our industry can learn from the mainstream industries and adapt the principles to ostrich. A number of years ago I attended an international conference where a nutritionist's opening statement was:

"Your ostrich breeders consume nearly one tonne of feed every year - that is a lot of feed - you need to ensure it is cheap."

In contrast I made the statement also as a speaker on Ostrich nutrition:

"Given their production potential, your breeder birds eat very little so you need to ensure that feed carries sufficient nutrients to support their production potential."

The important element is to ensure the breeder feed is "productive" and able to support the full genetic egg production potential of the hens and production of strong semen in the males. That in turn results in:

- High fertility, with excellent hatchability - thus reducing significantly the costs of incubation and overall costs of day old chicks (see figure 1)
- Strong chicks require less heat in cold weather or reduced cooling in hot climates
- Strong chicks have an improved immune system
- Strong chicks convert feed at a faster rate and therefore achieve slaughter weight with quality skins months earlier
- Strong chicks converting feed efficiently produce increased meat yields
- Increased meat yields reduce processing costs per kilo
- Chicks maturing earlier have increased percentage of Grade 1 skins

The above are all possible provided the chicks also receive feed of “high productive value” and accompanied by high standards of management

With all these factors correctly in place, the birds are able to optimise their genetic potential and that enables the implementation of genetic improvement programs – thus enabling an upward spiral of improving performance.

These are the principles of “production agriculture” that has enabled the mainstream livestock specie to become so efficient in recent decades and produce low cost meat.



**Figure 1 - Chick Feed Cost Comparisons**

[Source: Cutting The Costs of Production [\[1\]](#)]

### 5. Maximising Performance, Reducing Production Costs [\[2\]](#)

This is the title of an article written for Pig producers when under pressure from reduced prices. This is a direct quote from the first paragraphs and illustrates the focus of production agriculture is improving efficiency to cut costs, not to simply find a low cost per tonne solution:

**Quote: "As prices of corn and soybeans have increased and market hog prices continue to drop, swine producers are forced to find additional ways to reduce total production costs. The first place to focus is on growth performance (average daily gain, and feed efficiency) and the management factors that impact performance. If growth performance is poor then less profit or more losses will occur during these times of low market prices". End Quote**

Editor comment: Ostrich growth performance currently is well below its potential and these newsletters have continually reported the high losses, not only from chick mortality, but also from low conversion of eggs to chicks.

**Quote: "This article will try to provide some helpful tips to ensure that maximum performance can be achieved in order to minimize profit losses during these times of small profit margins.**

**First, one must look at feed quality. All pork producers have participated in the Pork Quality Assurance program sponsored by the National Pork Board; however, a feed quality assurance program should be implemented as well. Feed quality issues that need to be monitored include grinding or particle size, diet formulations, feeder adjustment, and storage.**

**Feed costs can be as much as 70% of the total production costs and when market prices are low, profitability depends on minimizing feed costs. Anything that**

***improves feed efficiency will be more economical in times of high feed costs.” End quote***

Editor comment: note again the emphasis on minimizing feed costs through improving feed efficiency. This is the basis of production agriculture, reducing costs through improved efficiencies not simply going for something carrying a lower cost per tonne.

***Quote: "Producers should monitor particle size and keep the average size at 700 to 800 microns with less than 5 % variability. Many times, if particle size is not determined frequently, it will creep up to 1,000 microns as the grinder screens wear. This may increase feed cost for a producer by \$.50 to \$1.00 per pig due to poorer feed efficiency". End quote***

Editor comment: This statement illustrates the degree of precision now being applied in these industries that is also required for Ostrich production. [Click here to read the whole article.](#)

## **6. Research Review and Future research**

Last year we put together a review of some research papers that have had a strong influence in our industry. This is available to any member interested in reading. Please email me privately at [editor@world-ostrich.org](mailto:editor@world-ostrich.org) and I can give you a link to download.

## **7. Bird Flu Turkeys – England**

The beginning of February witnessed the outbreak of H5N1 Bird Flu in Turkeys here in England. [Newsletter No. 47](#) discussed the problems of dependency on export markets when starting ostrich production. The company in this outbreak also have a slaughter plant in Hungary and run trucks daily between Hungary and England. It is considered that the infection came as a direct result of this traffic and a break down in biosecurity controls.

The outbreak not only cost the company at the heart of the outbreak a significant amount of money from the disruption, it also seriously affected many other businesses and highlights the dangers of depending only on export markets. Readers can view full details of the outbreak along with current trade restrictions at <http://www.defra.gov.uk/animalh/diseases/notifiable/disease/ai/latest-situation/index.htm>.

[1]Cutting Costs of Production – Daryl Holle and Fiona Benson - <http://www.blue-mountain.net/research/cutcosts.htm>

[2]Maximizing Performance, Reducing Production Costs, By Marcia S. Carlson and Thomas J Fangman, University of Missouri - <http://www.thepigsite.com/articles/6/production-and-mgmt/679/maximizing-performance-reducing-production-costs>



## Newsletter No. 49 – April 2007

1. **Developing countries are developing a taste for beef (article)**
2. **Meat Quality**
3. **Grain Prices Rising**
4. **South Africa – missed opportunities**
5. **Coping with Water Scarcity**
6. **Meat Consumption Comparisons by Region**
1. **Developing countries are developing a taste for beef**

The following short article appeared in the meatingplace.com daily newsletter on 3/13/2007. John Gregerson of Meatingplace.com wrote the article.

Quote: ***A study by the Brazilian Beef Industry and Exporters Association suggests that developing countries are primed to become the primary consumers of beef in years to come.***

***The study estimates that by 2030, developing nations will consume about 350 million tons of the product annually, as compared to the 100 million tons that developed countries will.***

***Among the big buyers: Arab countries.*** End Quote

This reinforces the opportunities for Ostrich given their environmental benefits as an efficient producer of red meat, when reared correctly.

Newsletter No. 40, <http://www.world-ostrich.org/member/news40.htm>, discussed market potential and current meat consumption in the different regions. The newsletter highlighted the increased opportunities for Ostrich as an alternative efficient meat producer to Pork, amongst population groups unable to eat Pork. A copy of Figure 2 from that newsletter is at the end of this newsletter and supports the findings of the Brazilian Beef Industry study.

There are many opportunities for Ostrich. To achieve these opportunities in each region requires a large company, with good leadership, adequate resources and an understanding of how to apply "production agriculture" to ostrich production.

### **2. Meat Quality**

The WOA have published a document, "Factors Influencing Meat Quality". The document covers 10 sections that indicate how many things influence the quality of meat. The influences are the same for any meat production specie and cover many factors throughout the production chain. The following graphic comes from the book "Garth Pig Stockmanship Standards" and illustrates well just how many production factors influence meat quality.



Nutrition, in excess of 60% of the input costs of any commercial livestock production, is at the very top as it has the greatest influence. Many of the factors referenced are dependent on the correct nutrition. A breakdown in any one of those factors influences the quality of the meat as received by the consumer.

A visitor recently published this message to the American Ostrich Association public forum on their web site. The message illustrates again the importance of consistent quality, especially when introducing a totally new meat specie to the marketplace.

Quote: ***I recently purchased several cuts of ostrich. I am writing an article on ostrich and would feel bad if I didn't at least try to put a positive spin on it. But I cooked the filet to medium as I read was necessary for ostrich and I couldn't take how tough it was. The roast was almost inedible. I tried again by pressure cooking it like I do with tough beef cuts. It just broke down into smaller tough pieces. I haven't touched the ground ostrich. What am I doing wrong? Any cooking suggestions or recipes would be appreciated. Thank you.*** End quote

One factor missing from the above graphic is 'age at slaughter'. It is very possible that this lady purchased meat from an old breeder bird. There are many reasons why meat can be tough.

The WOA has produced a Carcass Grading System that requires understanding and utilisation for all actively involved in our industry. Grading a product differentiates quality and enables the setting of prices according to quality. Grading also enables our customers to identify the level of quality they are purchasing.

### **3. Grain Prices**

Well reported are the increasing concerns over the price of grains as the production of biofuels gains in momentum. This is a problem for all livestock production and again places ostrich in a strong position. There are two reasons why this is so:

#### **Feed Efficiency**

The mainstream livestock species are at the top end of their production efficiency cycle after many years of improved production systems and genetic improvements to increase feed and production efficiency. Ostrich have yet to start commercial levels of production utilising efficient production methods and optimising the current genetic potential. Applying the principles of "Productive Agriculture" to ostrich production, the room for improvements in ostrich production are very significant and illustrated in the Benchmark Target Figures (see <http://www.world-ostrich.org/targets.htm> ).

## **Alfalfa (Lucerne)**

Meat production from pigs and poultry comes primarily from grain diets. Around 40% of a productive ostrich ration is Quality Alfalfa, thus enabling efficient meat production with reduced input from Grains. In addition, Alfalfa has environmental benefits as an important element in crop rotations, as it fixes nitrogen in the soil for the benefit of grain crops following.

## **4. South Africa – missed opportunities**

Reports are coming from South Africa that more producers are leaving the Industry. The extended closure of their export markets during the AI outbreak put their industry under pressure and now the escalating grain prices have increased that pressure. These increases in grain prices has been made worse by a Rand that has depreciated against the US Dollar by more than 20% and more than 30% against Sterling and the Euro.

Had the South African ostrich producers adopted the principles of "[Production Agriculture](#)", as discussed in Newsletter No. 48, immediately following deregulation in 1993, they could now be extremely efficient. The South African producers would now be able to produce meat more competitively than the other meat producing species within the country, combining the excellent feed efficiency of Ostrich with the reduced dependency on grains.

## **5. Coping with Water Scarcity**

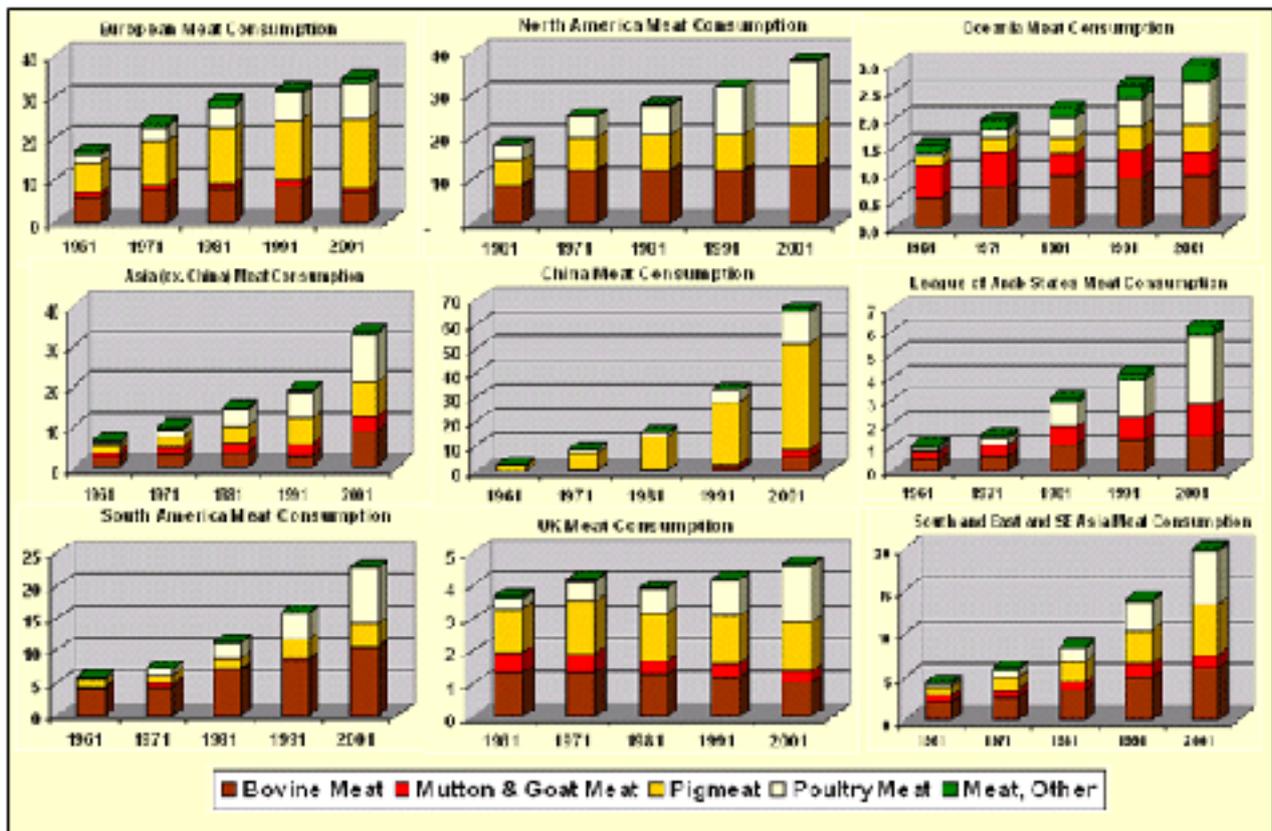
The main reason given for increased maize prices in South Africa is a shortage of water. This is becoming increasingly serious as a world problem. Australia is now recovering from a devastating 5 year drought. The FAO made "Coping with Water Scarcity" the theme of this years "World Water Day" on the 22<sup>nd</sup> March 2007. <http://www.unwater.org/wwd07/flashindex.html>

The FAO report that Agriculture is the number-one user of water worldwide, accounting for about 70 percent of all freshwater withdrawn from lakes, rivers and aquifers. Since 1950, the area of the earth under irrigation has doubled and water withdrawal for agricultural, domestic and industrial purposes has tripled. It takes 1,000-3,000 litres of water to produce just one kilo of rice and 13,000 to 15,000 litres to produce one kilo of grain-fed beef.

These statistics emphasise the need to ensure that the use of the water for agriculture is in the most productive manner possible. This again emphasises the role Ostrich has to play as an efficient converter of feed to meat, when produced utilising the principles of "production agriculture".

## **6. Global Meat Consumption**

Below is a graphic illustrating the comparative meat consumption in different regions and supports the findings of the Brazilian Beef industry discussed in item 1 above.



Data Source FAO.

**Countries within region as defined by FAO:**

<b>Europe</b>	<b>N. America</b>	<b>Oceania</b>	<b>Asia</b>	<b>League Arab States</b>	<b>South America</b>	<b>East and SE Asia</b>	<b>South Asia</b>
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Austria Belgium Belgium - Luxembourg Denmark Finland France Germany Greece Ireland Italy Netherlands Portugal Spain Sweden United Kingdom	Canada United States	Australia Fiji Islands French Polynesia Kiribati New Caledonia New Zealand Samoa Solomon Islands Vanuatu	Armenia Azerbaijan, Republic of Bangladesh Brunei Darussalam Cambodia China Cyprus Georgia India Indonesia Iran, Islamic Rep of Israel Japan Jordan Kazakhstan Korea, Dem People's Rep Korea, Republic of Kuwait Kyrgyzstan Laos Lebanon Malaysia Maldives Mongolia Myanmar Nepal Pakistan Palestine, Occupied Tr. Philippines	Algeria Comoros Djibouti Egypt Jordan Kuwait Lebanon Libyan Arab Jamahiriya Mauritania Morocco Palestine, Occupied Tr. Saudi Arabia Sudan Syrian Arab Republic Tunisia United Arab Emirates Yemen	Argentina Bolivia Brazil Chile Colombia Ecuador Guyana Paraguay Peru Suriname Uruguay Venezuela, Bolivar Rep of	Brunei Darussalam Cambodia Indonesia Korea, Dem People's Rep Korea, Republic of Laos Malaysia Mongolia Myanmar Philippines Thailand Timor-Leste Vietnam	Bangladesh India Maldives Nepal Pakistan Sri Lanka
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## Newsletter No. 50 – May 2007

1. **Scientific Referencing**
2. **Feeding Broiler Breeders for Chick Quality**
3. **Newly Hatched Chicks and Early access to Feed**
4. **Breeding for Meat Quality and High Yield Products**
5. **How Animal Welfare Affects Shopping in Europe**

### 1. **Scientific Referencing**

Quote: *References are very much a double-edged sword, or perhaps a bazooka. In the wrong hands, they can do far more harm than good. And in the, essentially, unchecked system that we now have, one careless reference can end up taking on a life of its own. It gets stuck in the medical information 'machine' replicating itself like some malevolent computer virus, gradually infecting all data and turning it into useless mush.* End Quote<sup>[i]</sup>

A medical doctor, Dr. Malcolm Kendrick, made this statement discussing issues as they affect our health, but the statement is true in many fields of science. Over the years, we have warned of the problems scientific referencing has created in our ostrich industry.

Research in ostrich production only started in the late 1980s. We witnessed a number of scientists entering the industry, as Ostrich appeared to offer excellent career prospects as a new industry, developing globally. During the early to mid 90s, there was a proliferation of papers published by scientists. Very few were peer-reviewed, and even if peer-reviewed, any hypothesis or experimentation had not had the test of time to prove the accuracy in practice.

As Ostrich developed into new countries, the scientists in these countries would look for any information published on ostrich as they assumed the published data was proven accurate. The practice of referencing in this way has contributed to the ongoing publications of misinformation as it applies to ostrich.

### 2. **Feeding Broiler Breeders for Chick Quality**<sup>[ii]</sup>

Aviagen is one of the largest poultry companies in the world. All are aware of the tremendous advances made in the efficiency of poultry production. The article discusses nutritional aspects to achieve high production on chicken that of course do not apply to Ostrich. However, the introduction is just as relevant in ostrich production.

Quote: *For a chick to fulfil its genetic potential as a broiler chicken, it is imperative that it has the best possible start in life.*

*For successful broiler production, a chick requires good bodyweight, with excellent nutritional reserves at day old. It needs to be in excellent health with a fully functioning immune system. From this starting point, providing the broiler with suitable environment and nutrition will enable optimal performance to be achieved.*

*The developing embryo and the hatched chick are completely dependent for their growth and development on nutrients deposited in the egg. Consequently, the physiological status of the chick at hatching is greatly influenced by the nutrition of the breeder hen.*

***In reviewing breeder nutrition, it should be remembered that nutrient supply to the broiler breeder is a sum of two parts, namely nutrient content of the diet and quantity of feed supplied to the breeder birds. Both parts need to be balanced to ensure correct daily nutrient supply.*** End Quote

The importance of adequate breeder nutrition can never be underestimated, it is critical to the success of chick rearing and the commercial viability of any livestock production industry.

Quote: ***"It is also very important to realise that the cost of feeding the breeder appropriately to ensure good nutritional status of the chick is very low when viewed on a per chick basis and compared with the total feed cost of raising a broiler to slaughter weight. Calini (2006) calculated that the cost of breeder feed contributing to the production of a chick is equivalent to only 7% of the total feed cost for a broiler grown to 2.5Kg. This illustrates the value of ensuring the best possible nutrition of the breeder.*** End quote

The lack of adequate nutrients provided to our Ostrich breeders currently a significant problem with Ostrich production. It is the number one reason that conversion of eggs to chicks is very poor, chick mortality high, food conversion poor and too many days taken to reach slaughter weight – adding significantly to costs of production.

The paper "Cutting the Costs of Production"<sup>[iii]</sup> demonstrates how the breeder feed costs per chick can be more than halved even if the cost per kilo of breeder feed is doubled to provide adequate nutrients from the right sources. This is the impact of Ostrich's low daily intake of feed and their high production potential when the nutritional base of the feed is formulated in a "production livestock" manner.

For our industry to become competitive, all producers must recognise the need to feed breeders adequately to achieve the full genetic potential.

### **3. Breeding for Meat Quality and High Yield Products<sup>[iv]</sup>**

This is another article written by a major poultry genetic specialist company. The introduction states:

Quote: ***At Cobb, we understand how the quality of these traits impacts on our customers' profits and for the last two decades we have invested millions of dollars in developing a higher yielding broiler, with breast meat yield increasing 6% of live weight. Our research and development team will continue progressing to keep pace with demands for increased yield and meat quality as well as various aspects of fillet shape, all in an effort to increase white meat yield and sizing yields for our customers.*** End Quote

This is discussing the increased weight of breast meat as a percentage of liveweight because it is more valuable than the leg and wing meat. Take the Fan – OS1046 as an example with Ostrich as a high value muscle because its size makes it a very versatile muscle. This muscle currently varies enormously and the longer, deeper framed birds will produce a much larger Fan than birds of a more torpedo shape and poor frame development. The article "The Potential Meat Yield of Ostrich"<sup>[v]</sup> proves that as an industry, we can more than double the current average meat yields of ostrich and we can do it in many fewer days to slaughter than is the current average.

### **4. Newly Hatched Chicks and Early access to Feed<sup>[vi]</sup>**

Quote: ***The small intestine of the newly-hatched chick is immature and undergoes significant morphological, biochemical, and molecular changes during the 2 week post-hatch.***

***The timing and form of nutrients supplied post-hatch is critical for development of intestines. It has been shown that early access to feed accelerates the rate of yolk utilization and enhances growth of the intestinal tract.***

***Usual hatchery practices result in a 24-72 hr transition between hatching and placing of chicks on the farm. The delayed access to feed can lead to a depression in intestinal function, which may negatively affect subsequent performance of birds.***

***Studies have also shown that providing developing embryo with exogenous nutrients (in ovo feeding) may enhance intestinal tract development and lead to higher body weight in ovo fed chicks.*** End quote

The issues raised in this discussion are:

- The importance of chick access to feed as soon as possible after hatch
- The reduced performance of chicks as a direct result of the delay when provision of feed is delayed due to the time taken from hatching to transfer to rearing farm.
- Studies proving that improved breeder feed to enhance embryo development in the egg may lead to higher body weight in chicks at hatch.

These issues are all very relevant for Ostrich production and confirm again the critical importance of adequate breeder nutrition.

## **5. How Animal Welfare Affects Shopping in Europe**

As countries become increasingly wealthy, the methods of production and welfare of the animals providing the food we eat become increasingly important. As a result, the EU funded a major study – The Welfare Quality® study. The results are now published and show that across Europe, a large majority of consumers find farm animal welfare important. This ranged from 69% of respondents in the Netherlands, 73% in the UK, 75% in France to 83% in Hungary and Sweden. Norway and Italy scored the highest, with 84% and 87% respectively.

Copies of the full study are available at <http://www.welfarequality.net/everyone>.

[i] "The Death of the Reference", Dr. Malcolm Kendrick, <http://www.thincs.org/Malcolm.htm>

[ii] "Feeding Broiler Breeders for Chick Quality", by Aviagen <http://www.thepoultrysite.com/articles/793/feeding-broiler-breeders-for-chick-quality>

[iii] "Cutting the costs of Production", Fiona Benson and Daryl Holle, <http://www.blue-mountain.net/research/cutcosts.htm>

[iv] "Breeding for Meat Quality and High Yield Products", By Dr Danny Lubritz, Cobb geneticist <http://www.thepoultrysite.com/articles/803/breeding-for-meat-quality-and-high-yield-products>

[v] "Potential Meat Yield of Ostrich", Fiona Benson, <http://www.blue-mountain.net/research/potmeatyield.htm>

[vi] "Newly Hatched Chicks and Early Access to Feed" by Mojtaba Yegani, <http://www.worldpoultry.net>



## Newsletter No. 51 – June 2007

1. **FAO Statistical Year Book**
2. **Ostrich Production News**
3. **Feed Costs**
4. **Optimum Egg Quality – a practical approach**

### 1. **FAO Statistical Year Book**

The FAO Statistical Year Book for 2005/2006 can be viewed at [http://www.fao.org/statistics/yearbook/vol\\_1\\_1/index.asp](http://www.fao.org/statistics/yearbook/vol_1_1/index.asp) and [http://www.fao.org/statistics/yearbook/vol\\_1\\_2/index.asp](http://www.fao.org/statistics/yearbook/vol_1_2/index.asp). The Yearbook comes in two sections. The first section includes extensive statistical data on Resources, Production, Trade, Consumption, Prices, Distribution and Welfare. The second yearbook covers profiles for every country. The profiles include general information about the country such as population, GDP, Imports and exports. They also include summaries of resources, the distribution of the resources, production and prices.

The FAO have also updated their online database and have some excellent statistics available for downloading. You can access the database at <http://faostat.fao.org/>.

### 2. **Ostrich Production News**

A recent edition of World Poultry has included two items on Ostrich. One related to production in Zimbabwe and the other production in South Africa.

#### **Zimbabwe**

There is a small item reporting a drop in production in Zimbabwe from 55,000 slaughter birds in 2000 to only 6,000 slaughter birds last year.



## Figure 1 - Zimbabwe Production Figures

Figure 1 illustrates the production as reported in the article. The drop in production is reported to be caused by a number of factors including higher mortality, high veterinary costs and feeding costs.

Those who have visited Zimbabwe recently will know their agriculture industry as a whole has been decimated by the current political situation. Their industry is working under extremely difficult conditions.

### South Africa

The focus of the article from South Africa was the importance of meat revenue. Reading the article highlights again the importance of understanding value chains as discussed in Newsletter No. 43 (<http://world-ostrich.org/member/news43.htm>) as it is a discussion on producer production costs and revenue achieved.

The article is focusing also on the importance of the export meat market for the South African producers and highlighting the difference in meat revenue on the domestic market compared to the meat revenue on the international market. The article quotes producer price paid per kilo of carcass weight.

South Africa still slaughters birds in excess of 365 days of age and has failed over the years to understand the commercial importance and benefits of reducing days taken to slaughter. Table 1 is a simple illustration to highlight the importance of days taken to slaughter and meat yield.

Column 1 in Table 1 contains the figures as quoted in the article for meat sold on the domestic market at a carcass price of €1.50/kg. The price quoted for export is €2.20. On those yields and costs, the margin remains negative. The rearing costs are as quoted in the article.

Implementing production management techniques, including nutrition able to support the full genetic potential of the current birds and genetic improvement, improved yields are very achievable. Column 2 illustrates the reduction in loss per bird with increased meat yields. However, South Africa continues to slaughter at 365 days and greater. Correct nutrition not only increases meat yields, it also enables fewer days required to slaughter – when combined with the right management techniques. Column 3 assumes reduction of days to slaughter from 365 to 300 days. Now the bird is commercially viable for the producer, even on the perceived lower price paid for the meat to go onto domestic market.

	Actual	Possible	300 Days
Liveweight kg	90	110	110
Carcass kg	43	55	55
Meat Yield kg	28	36	36
<b>Producer Revenue per bird</b>	<b>EUROS</b>		
Skin	€75	€75	€75
Meat	€65	€83	€83
Feathers	€7	€7	€7
<b>Total Revenue per bird</b>	<b>€146</b>	<b>€165</b>	<b>€165</b>
Less Slaughter Fee	€18	€18	€18
Rearing Cost	€161	€161	€113
<b>Margin per bird</b>	<b>-€32</b>	<b>-€15</b>	<b>€34</b>

Slaughter Fee/kg	€0.64	€0.50	€0.50
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**Table 1 - Comparative Margins per Slaughter Bird as Discussed in Article**

The article complained of harsh grading for the skins by the tanners. The South African scientists proved that younger slaughter resulted in improved grades.

Note also the improvement per kilo in the slaughter costs when meat yield is increased.

### 3. Feed Costs

Feed costs in livestock production are the largest of all the input costs, but the costs that have direct control of the production and product quality. There are continued concerns expressed by the mainstream livestock production species on the increasing costs of corn (maize) because of increasing ethanol production. Whilst there has been some easing of pressure due to creative reformulation of rations, there are warnings that this is limited without putting production at risk.

Recent reports also suggest that corn (maize) production in Brazil and Argentina are up by some 14 million metric tonnes on last year, with local prices in Brazil close to US\$120 per metric tonne. In contrast, the reports are that prices in Asia have risen to US\$230 per metric tonne, putting severe pressure on profits because of local populations' inability to pay increased prices for the meat. More on this subject can be viewed by clicking the following link: [Feed Costs - lull before the storm](#)

This creates further opportunities for Ostrich as productive ostrich rations use as much as 40% alfalfa. As mentioned before, Ostrich are at the beginning of the genetic improvement with very significant room for improving efficiencies whilst current mainstream production species are at the top end of their genetic ladder.

### 4. Optimum Egg Quality – A practical approach

The Poultry Web site has an excellent e-book on line under this title. The principles of producing quality eggs are the same for all egg layers, but it is important to remember that the nutrient levels differ between species, with ostrich requiring higher levels than normally recommended in chicken and turkey rations. Readers can access the front page of the book at <http://www.thepoultrysite.com/ourbooks/1/egg-quality-handbook/>.

The book includes a page on Optimum Vitamin Nutrition (OVN). This is another article on optimum vitamin nutrition. [http://www.dsm.com/en\\_US/html/dnpus/an\\_opt\\_vit\\_nutrition.htm](http://www.dsm.com/en_US/html/dnpus/an_opt_vit_nutrition.htm). A quote from the article:

Quote: ***Vitamins are nutrients that regulate the biochemical reactions by which energy and protein are used for health, growth, feed conversion and reproduction. Without vitamins, these biochemical reactions will not occur, and the nutrients present in the feed will not be properly utilized. If the amount of any vitamin in the diet is inadequate to meet the daily requirements of an animal, clinical deficiency signs or disorders due to impairment of these biochemical reactions may occur. The effects of marginal inadequacies will be less obvious, but will include less than optimum health and performance.*** End quote

Poor quality ostrich eggs continue to be a major cause of poor conversion of eggs to chicks and high chick mortality. Poor quality ostrich eggs continue to be a major reason for sub-optimal feed conversion of growing chicks, too many days to slaughter and inability to optimise the full genetic growth potential of the birds. Ostrich respond remarkably well to Optimum Vitamin Nutrition, when all other management factors are in place correctly.

With increasing pressure on feed ingredient supply and costs, adequate vitamin inclusion in correctly balanced rations is essential to ensure optimum utilisation of all nutrients in the rations.



## Newsletter No. 52 – July 2007

1. **On Line Magazines**
2. **Marketing Starts on the Farm**
3. **The Importance of Attention to Detail**
4. **History of Feedstuff Availability**
5. **Communication**

### 1. **On Line Magazines**

There is a wealth of information freely available today, in the mainstream livestock industries, thanks to the Internet. Information on ostrich is limited because we do not yet have commercial volumes of production or commercial production performance. However, we can learn a great deal from the information available to other species, as the basic principles of livestock production are the same for all species.

Magazines such as Feed Management, Poultry International, World Poultry and Feed International are all freely available. Other excellent web sites are The Pig Site and The Poultry Site. There are excellent articles in these magazines where the principles discussed also apply to Ostrich. For ostrich production to become commercially viable, detailed attention needs to be paid to every detail of management, understanding the economics of production livestock agriculture and knowing exactly what:

- breeder costs to produce one slaughter bird (not egg)
- feed conversion from per slaughter bird
- lean meat yield
- days taken to slaughter
- cost per kilo of meat

The document "Ostrich Benchmark Performance Targets" (<http://www.world-ostrich.org/targets.htm>) provides achievable benchmark guidelines as measurements of performance.

### 2. **Marketing Starts on the Farm**

The headline of this link is "Ethical food store opens with £12 ostrich eggs" <http://www.telegraph.co.uk/news/main.jhtml?xml=/news/2007/06/06/nfood106.xml>. When I visited the store last weekend there were no ostrich eggs and Rhea eggs were £25.00. The Rhea eggs were yellow in colour, instead of a good off-white colour.

This particular store's marketing differentiation is their very high standards of animal welfare and all produce free from the many negatives that have increasingly become associated with food production in recent years. Their standards demonstrate clearly how marketing today starts on the farm and is a partnership from the farm to the plate. Readers can view their standards at <http://www.wholefoodsmarket.com/products/meat-poultry/qualitystandards.html>.

[Eurepgap](#) is a global standards certification scheme that many major buyers utilise. Newsletters [10](#), [23](#) and [42](#) have discussed the importance of quality marks and introduction of best practice.

One problem with ostrich production is that many become involved with no vision for the market. Producing meat and placing it in store with the hope of finding a market later is unlikely to work in today's market place because, as can be seen with the increasing use of accreditation and quality standard schemes, you need your market established first. You need to know what your market demands and then produce to the standards they require. This is more challenging with Ostrich, as it is a new market in every country, with many buyers interested, but little understanding of the product.

### **3. The Importance of Attention to Detail**

The June edition of Poultry International includes an article that is a review of different papers presented during the year covering nutrition and feeding. The full article can be viewed at <http://www.poultryinternational-digital.com/poultryinternational/200706/>. We will discuss a few of the topics discussed and how they apply to ostrich.

#### **Formulating Organic Feeds:**

There is an increasing demand in the market place for organic grown produce. To formulate for optimum health and production requires high quality ingredients and in some cases supplements of certain amino acids to maintain the best possible balance, not directly obtainable from the ingredients. The author discusses trials between conventional diets and organic diets using a range of organic supplements. They found that all the organic diets, with one exception, produced statistically poorer results when measuring bodyweight and feed efficiency. Mainstream industries have decades of research data and genetic improvements to enable them to carry out such trials.

With ostrich, we are at the beginning. No meaningful genetic improvement programs are yet in place. The starting point for genetic improvement is ensuring that the nutrition is adequate to support the genetics. A guide to whether your nutritional program is adequate is seen in performance of the birds and the benchmark target figures are the first place to check. If birds are not gaining muscle, produce too much fat (a certain amount of fat is essential), take too long to reach slaughter – then the first place to start is the nutritional program. It is more important to get these basics correct at this stage of our industry, than worry about producing for the organic market.

#### **Drying Temperature of Maize**

The importance of ingredient quality in livestock production cannot be overemphasized. A review of the drying temperature of maize resulted in clearly defining that maize dried at too high a temperature reduces the feeding value of that maize. The destruction of enzymes when drying maize at high temperatures is the reason given for the loss of feeding (productive) performance of the maize.

In this discussion it is worth reminding readers that what may be a minor error in with mainstream livestock specie, can be significant to ostrich. This is because of the low daily intake of feed and the increased nutrient density required by ostrich.

#### **DDGS (Distillers Dried Grain with Solubles)**

This is a by product of the Ethanol industry. Note is made of the fact that the quality of the product can vary depending on the ethanol plant, but the consistency of the product from the same plant is very stable. One of the secrets to successful feeding is paying great attention to minimising the variables as much as possible.

#### **Summary**

These are just 3 examples of the attention to detail that is required to optimise production from feed rations. Feed is the single most important input cost in livestock production. The feed controls Production, Reproduction and Product Quality – it controls the whole economics of the farm. Ostrich are extremely sensitive to variations, so it is extremely important that all aspects of management are as tight as possible, with close attention paid to every detail.

### **4. History of Feedstuff Availability**

We regularly reference the long period that poultry and other mainstream industries have developed to their current high standards and efficiencies in production. [Feed Management](#)

[January 2007](#) published an interesting summary of feedstuff availability in poultry rations by decade.

-  **Before 1900** - Barley, buckwheat, corn, granite gut, liquid mill products, oats, oyster shell, table scraps, wheat
-  **1900 – 1910** - Bonemeal, green bran, linseed meal, wheat bran, wheat middlings
-  **1910 – 1920** - Alfalfa meal, corn gluten feed and meal, dried buttermilk, brewers dried yeast, fish meal, ground limestone, meat scraps, sprouted grasses
-  **1920 – 1930** - Cod liver oil, dried skim milk
-  **1930 – 1940** - Dried whey, manganese sulphate, milo, soybean oil meal
-  **1940 – 1950** - Deactivated animal sterols, dicalcium phosphate, liver meal, riboflavin supplements
-  **1950 – 1960** - Antibiotic feed supplements, antioxidants, arsenic compounds, distillers dried solubles, feather meal, fermentation solubles, inedible animal fat, methionine, vitamin B12 supplement
-  **1960 – 1970** - Complete vitamin supplements, complex trace minerals mixtures, lysine

All these improvements have assisted poultry producers to become increasingly efficient. The list stopped at 1970, but the impact of vitamin supplements, the complex trace minerals and other supplements included in premixes, have had a very significant and positive impact on the continual improvements in performance. In fact, they have revolutionised the economics of livestock production.

These supplements and premixes improve year on year – they are now the engine of all livestock production rations. Increasing attention to feedstuff quality has really boosted the effectiveness of those inventions. During the same period, arable farmers have been forced to improve what they were doing and produce a higher yielding product through healthier plant production, and that in turn gave livestock another boost and blended wonderfully with these inventions.

Most important is the fact that all these nutritional improvements when supported by excellent feed and farm management have made possible the continual improvements in genetic performance. This applies to all production livestock.

Recently I visited my brother's farm. They were in the process of building a new dairy as the old dairy has become too small. I watched the cows exiting from the old milking parlour, they took up the full width of the doors and the largest cows had to stoop to exit. At the time of installation, 30 years ago, those doors allowed ample width and height for the cows to exit. The increased size enables increased milk production, but that additional production requires the correct nutritional support or the cows simply do not get back in calf and have a very short productive life. Many dairy herds have doubled production over that period. The improvements in the nutritional supplements formulated to work with the nutrients provided by the main ingredients, enable improved utilisation of all nutrients and overall greater feed efficiency.

What is the impact on Ostrich of these improvements? Figure 1 illustrates the difference in a breeder hen maintained on a high mixed grain diet that is low in protein and vitamin and mineral supplementation and a hen fed a diet with a reasonable balance of lucerne, grains and protein ingredients with high supplemented vitamin and minerals.



**Figure 1 - Comparative Breeder Hens**

These photographs show clearly the differences in body condition and overall look of well being between the two hens. The hen on the right is likely to be more productive and able to pack more nutrients into her eggs than the hen on the left.

### **5. Communication**

The member's mailing list is available for any member to post messages and develop discussions. If any member would like further clarification, you may not agree with or simply would like to make a comment on any item in the newsletter the member's list is an excellent resource.

To post a message on the member's list you can either send the email to [woa@world-ostrich.org](mailto:woa@world-ostrich.org) or simply click "reply-to" a previous message. Just remember to send the email from your registered email address or the Majordomo software will not recognise you as a member.



## **Newsletter No. 53 – August 2007**

- 1. The Greatest Threat to the Industry**
- 2. Report of First International Ostrich Meat Congress**
- 3. Marketing Starts on the Farm**
- 4. Carbon Monoxide Meat Packaging**
- 5. Eliminating Variability**
- 6. Brazil Export Meat to Europe**

### **1. The Greatest Threat to our Industry**

A major buyer for Ostrich meat, who has always strived to obtain quality meat, made this statement to us:

***"The greatest threat to our industry is the poor quality ostrich meat we continually see"***

The buyer of a major supermarket chain informs us they are not interested in placing ostrich meat on their shelves again as a direct result of past negative experiences, proving just how true that statement is. Those negative experiences included consumer resistance and the refusal of the supplier to change their methods of production to meet the customer needs. The supplier implied that the skin is the primary product and they were unable to make those changes, as the changes would have a negative effect on the skins.

Item 2 is a report of the "First International Ostrich Meat Congress" that took place at the end of February 1997 in Oudtshoorn. The ostrich list was new and very active at the time. Prior to going to this conference, I asked members of the list for their thoughts on the slow development of the markets, as it was an excellent channel of communication within the industry.

I returned home from the congress excited as the issues list members had raised were discussed since they were clearly concerns of all those on the front line marketing and I hoped would continue to be addressed. 10 years on, the industry faces the same challenges. If anything, it is worse.

Item 2b discusses the dangers of bad consumer experiences. Hearing a major buyers complaining of the same thing 10 years later indicates that as an industry this serious threat remains a major issue that the industry continues to fail to address on a large enough scale.

### **2. Report of First International Ostrich Meat Congress – February, 1997**

Published on the ostrich list on 3<sup>rd</sup> March 1997

Last week NOPSAs - The National Ostrich Processors Association of South Africa (NOPSAs) hosted The First International Ostrich Meat Congress in Oudtshoorn. There were 120 delegates from 21 countries. The week should be seen as a major event in the history of the Ostrich Industry. It was not a week of delegates simply sitting and listening to a number of papers presented by various speakers - but as an opportunity for those attending to contribute in general discussion.

Three major areas were covered - The Meat (the individual muscles, their names, grades by tenderness etc.), Marketing Strategy and Hides. The delegates were also given a tour of the Abattoir, Tannery and various farms in the area.

#### **a. The Meat**

As a result of the confusion in the market as to the names and degree of tenderness of different muscles it was agreed that an internationally accepted standard should be set. An international subcommittee was formed. Before we departed, the Catalogue numbers of each muscle and Latin names had been agreed. The grading of several muscles and some trade names are still to be agreed. There is to be a further meeting of the sub committee to be held in Europe to finalise these matters.

Dr. F. Mellet of Stellenbosch University reported on the pH values of the meat and the Anatomy of the muscles. He noted that the Ostrich shows characteristics of Birds, Mammals and Reptiles.

The statement was made by one speaker that the industry is rapidly moving from the Hides as the primary product, with the meat the by-product to The Meat as the primary Product with the hides the by-product.

#### **b. Marketing Strategy**

A good deal of time was attributed to this important subject. Some statistics were presented on current numbers of birds being slaughtered, number of approved export abattoirs, numbers of birds etc. However, it was noted that these were compiled with limited data. Statistics were also shown on the dramatic growth of the Turkey and Chicken Industries in relation to the total meat market. It was noted that it would take 15million slaughter birds to satisfy 15% of the European market alone. The conclusion there is plenty of room for every one and great potential for growth.

There was an excellent presentation covering what the housewife/consumer is looking for, what makes the consumer buy the product and how to create an International awareness. Great emphasis was also given to the fact that there will be many people over the next few years buying Ostrich for the first time. If the product is not good and that first experience is a bad one - that consumer may well never try the product again. It was noted that there has been an inconstancy in the product in the past, which must now be addressed. This inconsistency is most probably a combination of the variety of ages of slaughter birds, the effects of diet, variety in classification between countries of the various muscles etc.

The price, presentation and colour of the meat were also aspects mentioned. The health aspects were seen as a major priority - the speaker highlighted the fact that we have a free range meat, that the market wants animals reared on feed free of meat source proteins, routine antibiotics, growth hormones etc.

An International Ostrich Association will be formed to promote the industry. It will prepare the International Meat Buyers Guide along with other sales literature, videos etc. It will generate and sustain general public awareness campaigns. The funding will be a combination of levies, profit from sale of promotional materials and any other means that may seem appropriate from time to time. Some of the funding will go towards research and development. The levies will be collected by the National Associations - part to be handed across to the International Association with some retained by the National Associations to promote within their individual country as each country has its own unique culture.

Delegates were warned that any bad press or experience regarding Ostrich will reflect on the industry - the consumer does not think of where that Ostrich was - simply the name Ostrich. It is essential to work together to ensure the quality and consistency of standards.

### **c. Ostrich Leather**

Whilst this was primarily an Ostrich Meat Congress, this important product was certainly not ignored. The current grading of Ostrich skins was covered in detail. Mr. Kriek of the KKLK informed the delegates that the industry often complains that the grading is too kind to the producer - but it has been agreed to retain the standard for the next 2 years at least. It was acknowledged that there are a number of new producers now in the market and there will be a learning curve to achieve the required quality.

Discussion took place on the effect of slaughter age on the hide. It was acknowledged that the 10mth skin of a well-fed bird is very acceptable and that the 14mth slaughter age has arisen to satisfy the requirements of the feather trade. There was considerable discussion on the potential effect on price of an increasing number hides and of lower grade skins possibly coming onto the market. Examples were given of uses of these hides, which no other leather could compete with, therefore allowing the hides to retain a high value. An analogy was made with the wine industry. You will have your very high value wines, the plonks and many in-between – all made from the one product - the Grape.

All delegates visited the Tannery and were shown a large range of skins - of differing grades. A good deal of excellent discussion took place between the delegates during this visit.

The Congress was closed by the South African Minister of Agriculture - Mr. D. Hanekom. He passed on the message to the South African Industry that he offered his full support to the development of the industry. He also announced that legislation is now going through to allow the Import and Export of genetic material.

#### **Footnote:**

Note the fact that this was 1997 and it was accepted then that skins from 10 month birds (42 weeks old) are acceptable and that the feather industry was driving the later slaughter. Slaughter birds as late as 60 weeks is simply not commercially viable for a producer producing good quality meat.

### **3. Marketing Starts on the Farm**

At the time of this conference, my husband and I were involved in marketing the skins and hoped to build a meat supply business into the UK. One has to have supplies in order to build a marketing business. We started farming ostrich in a small way while awaiting establishment of slaughter facilities in our area (Cape Town, Western Cape ), so enabling increased supplies to become available. We had become aware of the rearing problems producers experienced, not only in South Africa but also in all countries rearing ostrich at that time. It required "hands on" experience to gain a better understanding because "Marketing starts on the Farm".

To supply a market requires:

- A reliable supply of the product
- A product of the right quality
- Uniformity in quality
- Uniformity of muscle sizes

Whilst handling of the birds in transport, during slaughter and the meat after slaughter all influence the quality of the meat, the quality starts on the farm. This applies equally to the skins, fat/oil and feathers.

Erratic egg laying, hatchability and chick survivability all influence the ability to ensure reliability of supply. They also significantly influence the costs of production.

Added to these issues today are full traceability, residues in the meat and animal welfare (how the animals are reared), all very important to buyers and consumers. Increasingly various quality assurance certification schemes enforced by buyers include these requirements.

These aspects all start on the farm and require addressing as critical to any marketing plan. Marketing livestock products is a partnership between producer, processor and buyer.

#### **4. Carbon Monoxide Gas in Meat Packaging**

The [Meatingplace.com](http://Meatingplace.com) web site published the following article on 19<sup>th</sup> July. Membership is required to read the full article, but it is free.

Safeway pulls product packaged in CO By [John Gregerson](#) on 7/19/2007 for **Meatingplace.com** Congress asked, and Safeway complied.

The nation's largest retail chain announced Wednesday it will no longer stock meat packaged in carbon monoxide gas, a substance that enhances the "bloom" of fresh product.

The action is in response to a letter Reps John D. Dingell and Bart Stupak, both Michigan Democrats, wrote Safeway in June requesting that it pull CO-enhanced meat product from its shelves. Dingell and Stupak also reportedly wrote to three meat processors that supply the product, requesting they discontinue it.

In a letter to Dingell and Stupak, Safeway Senior Vice President Michael McGinnis indicated that while the retailer believes the format is safe, owing to the fact that it contains only trace amounts of CO, it may nonetheless "have raised concerns with customers who do not have the benefit of the background on this process and may be confused."

Stupak told reporters Wednesday that the process is "deceptive," since consumers use color to evaluate the freshness of meat product.

Safeway indicated that only a "limited selection" of its meats are packaged in CO. All such product was pulled from shelves Tuesday, save for lamb and veal, which will be pulled from shelves on July 27.

#### **Footnote:**

The use of Carbon Monoxide Gas in meat packaging is in widespread use in the meat industry, but coming under increasing pressure on safety issues. The nutrition technology that most us know as "Vitamin E Beef" also produces meat that brightens with oxidation and provides a similar visual benefits and extended shelf life as the CO packaging technology and just one example of how "Marketing Starts on the Farm".

A few references:

Taken from [the Alberta Government web site](#):

#### ***Does vitamin E influence meat quality?***

*Vitamin E helps to maintain the bright pink or red color and taste of meat. This improves customer acceptance of meat on the shelf. When meat starts to oxidize, discoloration and off – flavors, or off – odors develop in the meat. Animals fed high levels of vitamin E prior to slaughter improves the shelf life of meat up to two days.*

#### ***Will I be able to market finished steers without supplemental vitamin E in the feeding program?***

*In Alberta, one major packer will not bid on fat cattle for slaughter unless the animals have been fed 50,000 International units of vitamin E prior to slaughter.*

The following is the summary of the paper entitled: ***Effect of supplemental dietary vitamin E on the color and case-life of top loin steaks and ground chuck patties in various case-ready retail packaging systems.***

*This research shows that vitamin E supplementation has significant effects in reducing the oxidative processes that create undesirable characteristics in case-ready beef. Vitamin E supplementation was shown to maintain color and visual acceptance scores for longer periods of display in both Peelable VSP packaged top loin steaks and Barrier Foam packaged ground chuck patties. Extending the storage and display life of case-ready beef products, vitamin E has the potential to help beef compete better with other case-ready protein sources. The combination of case-ready packaging and vitamin E supplementation can help beef products become more appealing and convenient to today's retail consumer.*

## 5. Eliminating Variability

The Pig Site recently published an article on the subject of tackling uniformity under the title [Dealing With Variability in the Finishing Barn](#). The article illustrates other areas of marketing that start on the farm.

A few excerpts:

**Quote:** *Variation is becoming an increasingly important topic of discussion in the pork industry. Differences in growth impact the time that is required to empty a pen, or a room, or a barn and still meet the needs of the packing industry for uniform carcasses.*

*Pork producers look with envy at the broiler industry, which empties its barns in a single day, while we take 3 to 5 weeks to accomplish the same end. In the broader scheme of things, variability is both a curse and a blessing to our industry. That being the case, management of variability becomes an essential key to success in pork production. **End quote***

### **Quote: What is variability?**

*First, what is meant by variability, and how much variability typically exists within a herd. Variability is defined statistically in many ways. One common term is "standard deviation." Standard deviation is a measure of the amount of variation that exists about the average of a group of pigs. It is defined such that one standard deviation about the mean will include about 66% of all pigs within that group; two standard deviations will include 95% of the pigs, and three standard deviations will encompass more than 99% of all of the pigs.*

*For example, if a pork producer recorded the weight of all of his pigs at 140 days of age (20 weeks), the average might be 95 kg and the standard deviation 11 kg. In this example, 2/3 of the pigs would weigh between 84 kg (95 – 11) and 106 kg (95 +11). More than 95% of the pigs would weigh between 73 kg (95 – 11- 11) and 117 kg (95 + 11+ 11). When one talks about reducing variability, one is really talking about reducing the standard deviation.*

*Sometimes, people prefer to use the term "coefficient of variation" or CV; it is the standard deviation expressed as a percent of the average. In the above example, the CV would be 11.6% ( $[11/95] \times 100$ ). In typical pig populations, the CV is commonly in the range of 8 to 12%.*

*Two fundamental approaches exist. The first would be to manage the environment in such a way as to minimize variability, and the second would be to manage the pig to minimize the impact of variability on net income. In other words, one approach would be to seek ways to minimize variability, and the second would be to manage whatever variability exists within a herd. **End Quote***

Uniformity in size of carcass is important and our ostrich industry must start to address this issue. Apart from supporting the marketing effort by supplying the customer with uniform carcasses, there are clearly significant financial benefits in achieving a finished animal of 117kg instead of 73kg over the same period and for the same feed intake.

## 6. Brazil Export Meat to Europe

This month Brazil reported restricted export of Ostrich meat to Germany while they continue to put in place their residue control plan, programmed to take till the end of 2009 to complete. Residue control includes controlling and testing for such things as drugs, antibiotics and hormonal growth promoters.

Many ostrich projects commence with the intention of exporting. It is important to recognise the costs of developing and implementing the required controls demanded by importing countries.



## **Newsletter No. 54 – September 2007**

- 1. Translation**
- 2. Marketing Starts on the Farm**
- 3. Food Safety/Consumer Health**
- 4. Traceability**
- 5. Animal Welfare**
- 6. Residues**
- 7. Quality**
- 8. Disease Control**
- 9. Reliability of Supply**
- 10. From Farm to Fork**

### **1. Translation**

Your directors are aware that language is a barrier that prevents many accessing the information the WOA provide. We have researched different options to translate the information on the web site. We first looked at automatic on line translations, but it does not yet include Arabic. In addition, there is no way to edit poor translations.

We have opted for a program that provides us with 13 languages that can be translated from English. The downside is that every translation requires handling manually. Over the next few weeks, we will translate all the public pages, and progressively add past newsletters.

Effective immediately we will make all newsletters available in the major languages. One benefit of using this system, rather than the fully automatic system, is we have the option to edit poor translations. We will ask volunteers amongst our membership to check the pages in your own language for accuracy and provide us with improved translation.

### **2. Marketing Starts on the Farm**

Establishing a market for their products is critical to the success of any business. With livestock, it used to be that you would raise your animal and when it was finished, take it to market. Today that is all changing very rapidly, not just in the EU but also in many importing countries.

Consumer demand today for greater food security and improved animal welfare makes it increasingly difficult for buyers to source livestock in this manner and still able to offer these securities.

The legislation now in place in the EU and many other countries makes it increasingly challenging to provide the full traceability for animals purchased at livestock markets. Buyers today also seek greater consistency and uniformity as well as security of supply.

To achieve their requirements the larger meat buyers purchase on contract and lay down stringent rearing standards, over and above those laid down by legislation. These rearing standards are not possible to monitor when they have no direct access to the animals while on farm because the first time they are seen is at the market.

These are some of the areas controlled on farm and if not in place, many buyers will not buy the meat.

- Food Safety/Consumer Health

- Animal Welfare
- Residue Monitoring
- Quality
- Disease Control
- Reliability of Supply

This clearly demonstrates why marketing starts on the farm. If all these things are not in place on the farm, then the market is limited if available at all.

It is not very easy to place these factors in any particular order of importance because a failure in any one area can halt market availability even if the farm is perfect in all other areas.

This month's newsletter will focus on these issues and discuss the role of the WOA in establishing protocols, where appropriate, with greatest focus on the areas that are important at farm level.

### **3. Food Safety/Consumer Health**

In meat production examples of areas that are important to food safety and consumer health are:

- Unwanted residues in the blood and meat:
  - Antibiotics
  - Growth Hormones
  - Heavy Metals
  - Pesticides
  - Drugs
- Bacteria infection
- Bruising
- Disease of any nature

A visit to the government web sites indicates how important these issues are today. The increase in globalisation of agriculture and intensification of livestock production has combined to increase the risks to consumers of contaminated product. Appendix 1 provides references to some web sites that cover these issues.

### **4. Traceability**

The ISO (International Organization for Standardization), which develops voluntary international standards for products and services, defines traceability as the "ability to trace the history, application, or location of that which is under consideration." Under EU law, "traceability" means the ability to track any food, feed, food-producing animal or substance that will be used for consumption, through all stages of production, processing and distribution.

Full traceability is becoming increasingly important in the major markets. With livestock, as can be seen, this is not simply from the slaughter plant to the point of sale, but also where born, where grown, what they have eaten throughout their lives, all medical history including treatments. To achieve this records are required on such things as:

- Unique Animal identification
- Location of birth
- Location during rearing
- Feed fed throughout their life
- § To trace any potential contamination
- § Use of prohibited ingredients at any time
- § Supplying feed companies are required to maintain full records of ingredient sources in each batch of feed made
- Health records
- § Diseases
- § Treatments

- § Vaccinations
- Transport

Traceability is a way of responding to potential risks that can arise in food and feed, to ensure that all food products are safe to eat. It is vital that when national authorities or food businesses identify a risk they can trace it back to its source in order to swiftly isolate the problem and prevent contaminated products from reaching consumers. In addition, traceability allows targeted withdrawals and the provision of accurate information to the public, thereby minimising disruption to trade.

Past food crises such as dioxin contamination and BSE, have illustrated the particular importance of being able to swiftly identify and isolate unsafe foodstuffs in order to prevent them from reaching the consumer.

## **5. Animal Welfare**

The markets of Europe, Britain and North America are becoming increasingly concerned over animal welfare. The British Domesticated Ostrich Association is working with DEFRA and the RSPCA to lay down basic standards here in Britain .

We have created a set of welfare codes that can be used as a foundation for:

- governments seeking guidance to develop their own codes
- buyers wanting to set codes
- certification organisations

The codes will be available on at <http://www.world-ostrich.org/woawelfare.htm>. We will amend and update as experience and data becomes more available.

## **6. Residues**

The following quote from the EU web site: [http://ec.europa.eu/food/food/chemicalsafety/residues/index\\_en.htm](http://ec.europa.eu/food/food/chemicalsafety/residues/index_en.htm) illustrates the importance now placed on having the right procedures in place to ensure meat is free of residues.

### ***Quote: "Residues of Veterinary Medicinal Products - Introduction***

***During their lifetime, animals may have to be treated with medicines for prevention or cure of diseases. In food producing animals such as cattle, pigs, poultry and fish this may lead to residues of the substances used for the treatment in the food products derived from these animals (e.g. meat, milk, eggs). The residues should however not be harmful to the consumer.***

***To guarantee a high level of consumer protection, Community legislation requires that the toxicity of potential residues is evaluated before the use of a medicinal substance in food producing animals is authorised. If considered necessary, maximum residue limits (MRLs) are established and in some cases, the use of the relevant substance is prohibited. The evaluation procedure is laid out in Council Regulation (EC) 2377/90 of 26 June 1990.***

***Directorate-General Enterprise is responsible for the rules governing medicinal products and the evaluation of residues of pharmacologically active substances used in veterinary medicinal products and for establishment of MRLs in the EU.***  
***End Quote***

Countries will have their own rules and regulations to monitor residues within the meat to protect their consumers. In the EU, each country residue-monitoring plan is expected to follow the EU regulations: [http://ec.europa.eu/food/food/chemicalsafety/residues/control\\_en.htm](http://ec.europa.eu/food/food/chemicalsafety/residues/control_en.htm). This page provides information for those countries outside the EU wishing to supply the EU. [http://ec.europa.eu/food/food/chemicalsafety/residues/third\\_countries\\_en.htm](http://ec.europa.eu/food/food/chemicalsafety/residues/third_countries_en.htm).

Residues in the meat result from inputs at the farm, and emphasise the importance of the correct controls on the farm. These inputs include feed, water and all medication, internal and external.

## 7. Quality

The aspects of meat quality that are controlled at farm level are discussed in greater detail in the [WOA Factors Influencing Ostrich Meat Quality](#)

- Age of the animal
- Nutrition
- Management Systems

In meat quality, the Nutrition is the most important as the rations fed control the colour, taste, texture and odour of the meat. They control the animal's ability to handle stress, and the time required to bring an animal to slaughter. The younger the animal is slaughter ready, the more tender the meat.

Management systems are also extremely important in controlling meat quality, because any failure in management can result in insufficient feed intake, insufficient water intake, disease control and stress levels. Insufficient water intake, presence of disease or parasites and stress all result in reduced feed intake and impact on the quality of the meat.

The condition of the animal's liver and colour of the fat are key indicators of the animals overall health and quality of the meat. The feed the animal receives directly controls liver condition and fat colour.

## 8. Disease Control

The importance of good biosecurity to minimise the risks of disease cannot be over emphasised. Historically Newcastle Disease (NCD) and Avian Influenza (AI) are probably the diseases that have caused the most disruption to supplies.

An outbreak of NCD or AI in ostrich and/or poultry can shut down movement locally and exports overnight. AI ended the Israeli Ostrich industry, even though it was not present in their ostrich flock as they were totally dependent on the export market for meat sales as the local population are unable to eat ostrich meat. Over the years NCD and AI has severely affected the South African industry because they had built their meat sales on the export market. Australia has also experienced total closure to exports for an extended period because of NCD in poultry.

Chick Mortality has also caused many difficulties in continuity of supply:

Quote ***"Chick mortality is a serious destroyer with devastating and varied financial implications. For the last two decades, in all surveys and opinion polls, the vagaries of chick mortality have been listed as enemy number one."*** End Quote [1]

There are a number of reasons for chick mortality and these should be clearly understood to ensure correct management to minimise these losses.

Disease disrupts the supply to the market.

## 9. Reliability of Supply

Recently we have been speaking with a buyer whose ostrich sales halved because his supply chain was unreliable and restaurants took ostrich off their menus. Restaurants set their menus very often for 6 months at a time and once let down markets are harder to recover.

Supermarkets will not tolerate empty shelf space. Unreliable supplies will result in lost contracts. Disease is one of the major causes of lack of supply, either as a result of export bans or as a result of high chick mortality.

One other major cause for lack of supply witnessed in Ostrich over the years is the unreliability of egg numbers laid and conversion of those eggs to day old chicks and then survival to slaughter. Farm management systems must be in place to optimise the numbers of eggs laid and the conversion of those eggs to slaughter birds to ensure continuity and reliability of the supply to the market.

### **10. From Farm to Fork**

All major importing countries have increasingly strict requirements and as can be seen these start with very strict controls on the farm. If the farm production systems are not in place, the meat has limited markets. The EU introduced the concept "From Farm to Fork" as a phased program in 2002, other countries and buyers are doing the same. Marketing starts on the Farm.

[1] The South African National Agricultural Marketing Council "Report on the Investigation of the effects of Deregulation of the South African Ostrich Industry" page 33. <http://dms.namc.co.za/published/20040416-1212.pdf>

#### **Appendix 1**

#### **Government Web sites relating to Food Safety at Farm Level, Animal Welfare and other issues at Farm Level:**

From Farm to Fork – safe food for Europe 's consumers  
<http://ec.europa.eu/publications/booklets/move/46/en.pdf>

EU Food Safety Index  
[http://ec.europa.eu/food/index\\_en.htm](http://ec.europa.eu/food/index_en.htm)

White Paper on food safety:  
[http://europa.eu.int/comm/dgs/health\\_consumer/library/pub/pub06\\_en.pdf](http://europa.eu.int/comm/dgs/health_consumer/library/pub/pub06_en.pdf)

The European Commission's agriculture and food website:  
[http://europa.eu.int/comm/agriculture/foodqual/index\\_en.html](http://europa.eu.int/comm/agriculture/foodqual/index_en.html)

The European Union Farm Animal Welfare:  
[http://ec.europa.eu/food/animal/index\\_en.htm](http://ec.europa.eu/food/animal/index_en.htm)

The European Food Safety Authority website:  
<http://www.efsa.eu.int>

The European Union - The rapid alert system for food and feed website:  
[http://europa.eu.int/comm/food/food/rapidalert/index\\_en.htm](http://europa.eu.int/comm/food/food/rapidalert/index_en.htm)

USDA - Food Safety – From Farm to Fork  
<http://www.ars.usda.gov/is/pr/2006/061023.htm>

USDA – Food Safety on the farm:  
[http://www.ars.usda.gov/research/publications/publications.htm?SEQ\\_NO\\_115=179308](http://www.ars.usda.gov/research/publications/publications.htm?SEQ_NO_115=179308)

Canada Agriculture – Challenges Facing Canadian Agriculture  
[http://www.agr.gc.ca/cb/apf/pdf/bg\\_con\\_cons\\_e.pdf](http://www.agr.gc.ca/cb/apf/pdf/bg_con_cons_e.pdf)

Canada Agriculture – Canada 's Farm Animal Welfare Infrastructure  
<http://www.inspection.gc.ca/english/anima/heasan/transport/infrastructuree.shtml>

Canadian Agriculture – Animal Welfare Codes of Practice  
[http://www.agr.gc.ca/cb/apf/pdf/consultanim\\_01\\_e.pdf](http://www.agr.gc.ca/cb/apf/pdf/consultanim_01_e.pdf)

New Zealand Agriculture – Animal Welfare  
<http://www.biosecurity.govt.nz/animal-welfare/codes>

DEFRA – UK – Animal Welfare

<http://www.defra.gov.uk/animalh/welfare/farmed/on-farm.htm>

European Union – Traceability

[http://ec.europa.eu/food/food/foodlaw/traceability/index\\_en.htm](http://ec.europa.eu/food/food/foodlaw/traceability/index_en.htm)

USDA - Traceability

<http://www.ers.usda.gov/AmberWaves/April04/Features/FoodTraceability.htm>

<http://www.ers.usda.gov/Briefing/Traceability/>

Canada – Red Meat Traceability

[http://www.agr.gc.ca/pol/pub/series-rpt-collect/pdf/red-rouge\\_e.pdf](http://www.agr.gc.ca/pol/pub/series-rpt-collect/pdf/red-rouge_e.pdf)



## Newsletter No. 55 – October 2007

1. Translation
2. EurepGap becomes GLOBALGAP
3. Veterinary Health Plans
4. Nutrition and Health
5. AGM Reminder

### 1. Translation

Last month we announced the introduction of translation of our newsletters and certain web pages. Progress is a little slower than we hoped. We are going through an evaluation process and extremely grateful to the members reviewing these translations. We are experiencing some poor translations of some languages.

### 2. EurepGap becomes GLOBALGAP

We regularly discuss the increasing importance of assurance schemes, codes and standards in food production. To illustrate further the impact of globalisation in the production of food, [EurepGap](#) has now become [GLOBALGAP](#). This is the press release announcing the change of title and logo.

Quote:

***Bangkok, 7th September 07 – Using its eighth annual conference being held in Thailand this week as an appropriate platform, EUREPGAP has announced it is changing its title and logo to GLOBALGAP.***

***The decision has been taken to reflect its expanding international role in establishing Good Agricultural Practices mutually agreed between multiple retailers and their suppliers.***

***In ten years since its inception - initially targeted at Europe - the voluntary organisation has seen its influence spread and led to the creation of identical criteria adopted as far afield as South and Central America, Africa, Australasia, and most recently Japan and Thailand.***

***Established equivalent schemes such ChileGAP, ChinaGAP, KenyaGAP, MexicoGAP, JGAP (Japan) and most recently ThaiGAP, are backed by national governments, retailers, producers and exporters.***

***"Currently GLOBALGAP covers over 80,000 certified producers in no less than 80 counties with others expected to follow," explains Chairman Nigel Garbutt. "It has meant that through the adoption of good agricultural practices subject to regular independent monitoring that committed producers regardless of their scale can compete on an equal footing.***

***"The reason for the name change is that it now makes common sense to clarify our far wider role at a time when both producers and retailers are operating on an international level across national boundaries.***

*Kristian Moeller Secretary GLOBALGAP added, "By positively aligning ourselves in this way, it allows us to identify and fit more closely and more clearly into the global supply chain."*

*"The re-naming will be accompanied by a significantly improved website which will meet the information needs of our increasingly wider range of stakeholders."*

### **3. Veterinary Health Plans**

The Veterinary Health Plan (VHP) is a requirement of most Farm Assurance Schemes and retailers "codes of practice".

The VHP is a document agreed between the farm's vet and the farm management working in partnership. The plan involves regular visits by the farm's own vet. The recommendation is the same vet carries out these visits to maintain consistency.

VHPs need to address a number of areas to achieve those objectives, such as:

- flock security/biosecurity
- basic performance parameters
- the monitoring of body condition
- general ostrich welfare
- basic disease control programmes
- recording, monitoring and controlling disease on the farm
- the use of medicines, vaccines, their safety and their recording

This newsletter will focus on the veterinary health plan as it applies to ostrich, as most vets will admit that information on ostrich is limited. The way to approach the development of an Ostrich specific plan is to look at the plans designed for other species and then adapt them to ostrich. These plans are living documents under continual review to improve and update with experience.

#### **3.1. Flock Security**

The ability to supply markets on a consistent basis is paramount to success of any business. The most influential management area that controls consistent supply in livestock production is the control of disease. Consistency of product quality is also extremely important, but only relevant once the security of supply is under management control.

The role of the VHP is to help identify weaknesses in farm production that influence the ability to limit the impact of disease.

#### **3.2. Basic Performance Parameters**

These are examples with ostrich of some of the basic performance parameters that provide an indication as to the success of the management systems to deliver good health and welfare as well as profit:

- egg fertility
- feed conversion
- egg hatchability
- deaths
- hatching difficulties
- injuries
- breeder culling rates
- incidence and type of lameness
- percentage chick to slaughter/breeder
- metabolic diseases
- medicine use and reason

The [WOA benchmark targets](#) are very achievable performance parameters.

#### **3.3. Monitoring Body Condition**

Currently there are very few references on how to establish optimal body condition of ostrich.

Figures 1 below illustrate the extremes currently experienced in the industry. The hen on the left is very thin with poor feather quality when compared to the hen on the right. You will notice also, how little muscle this hen has across her back by comparison to the hen on the right.

The hen on the left had a ration that was mainly grain based, with limited vitamins and minerals. The hen on the right received rations that are of high nutrient value with high levels of vitamins and minerals.



**Figure 1 – Comparative Hens**

Apart from visual inspection, the way to physically assess the body condition of ostrich:

Quote: *When the backbone at the highest place on the bird's back is protruding above the surrounding flesh, the bird is too thin. When the backbone at the highest place on the bird's back is indented below the surrounding flesh, the bird is too fat and needs decreased feed—or a different feed formulation. The optimum Body Condition is when the backbone at the highest point on their back is perfectly even with the surrounding flesh* End Quote [\[1\]](#).

### **3.4. General Ostrich Welfare**

At the most basic level, this covers the internationally recognised five freedoms. These basic freedoms are:

- Freedom from hunger and thirst
  - By ready access to fresh water and a diet to maintain full health and vigour
- Freedom from discomfort
  - By providing an appropriate environment including shelter and a comfortable resting area
- Freedom from pain, injury or disease
  - By prevention or rapid diagnosis and treatment
- Freedom to express normal behaviour
  - By providing sufficient space, proper facilities and company of the animal's own kind
- Freedom from fear and distress
  - By ensuring conditions and care which avoid mental suffering

Top of that list is freedom from hunger. The current poor production results – variable egg production and low conversion of eggs to slaughter/mature birds, is a key indicator that the industry in general is failing to achieve that first freedom through the inadequate supply of the right nutrients in the diet.

### **3.5. Basic Disease Control Programs**

Strategies, procedures and the recording of general policies fall into this category.

- cleansing and hygiene policies including disinfectants used
- § Buildings
- § Pens
- § Water Troughs
- § Feed Troughs
- pest control (including rodents and birds)
- parasite controls (internal and external)
- hospital and isolation pens
- casualty slaughter

The written plan describing these policies forms part of the VHP.

### **3.6. Recording, Monitoring and Controlling disease on farm**

Good records are the key to not only monitoring disease issues but also performance trends as the two are closely linked. A drop in production is a sign of possible disease problems. Another cause for a drop in production, and/or more serious health problems, can be a feed problem. Feed problems can be such things as a bad ingredient, sudden change of ingredient, poor mixing or insufficient water intake.

In addition to the normal farm production and feed data, the type of records required relating to disease are:

- Diseases identified
- Age of animal affected
- Method of Treatment
- Method of Control
- Review Periods
- Effectiveness of control programs

The movement records of any animals moved onto the farm or off the farm are also of importance in monitoring and controlling disease.

### **3.7. The use of medicines, vaccines, their safety and their recording**

This section covers the recording of all medicines used in the unit. The VHP should follow the legal requirements of the country in which the business is operating and include any additional requirements imposed by country the unit is exporting or buyer. The type of information required is:

- the date treatment commenced
- the animal it is used on
- its identification and location
- the condition or disease treated
- the medicine used
- the batch number of the bottle
- the dose rate given
- the number of days that the medicine is used
- the withdrawal period in days
- the date at which the withdrawal period expires (the date of clearance)
- a note of who has administered the medicine
- details of all medicines purchased

Also included in this section are the procedures for:

- the safe disposal of all clinical waste
- storage of medicines

- off-label use of medicines

Off-label use of medicines is the use of a product not licensed for the specie treated. This is very common with ostrich as there are very few, if any, approved medicines for ostrich in most countries. The laws will vary in different countries, but generally, this is allowed provided the medicine has a licence for food-producing species with an approved meat withdrawal period. Check the law within your country and any country the unit exports meat to.

#### 4. The role of Nutrition in Disease Control

The role of that nutrition in the control of disease is well documented and becoming increasingly important with governments eliminating the use of antibiotics in meat producing livestock.

This quote from a publication issued this month relates to human nutrition, but the same principles apply to livestock nutrition. The article relates to Vitamin D.

Quote: *Meanwhile two other studies recently claimed that if we all got adequate amounts of this vitamin it would be possible to cut rates of breast, prostate and colon cancer by 50%. And that's not all – yet another research paper by researchers at the Centre for Disease Control in Atlanta suggested that the reason we are all more likely to get colds and flu in the winter could be because that's the time it's hard to get enough Vitamin D. Its role as an infection fighter could maybe used to tackle new enemies like bird flu, tuberculosis and MRSA.* End quote<sup>[2]</sup>

When reading discussion on the effect of a single nutrient, always remember that all nutrients work in harmony with other essential nutrients. The role of nutrition in human and animal health to fight disease and building a strong immune system is the foundation for disease control.

#### 5. Annual General Meeting

**A reminder that the Annual General meeting takes place on 23rd October, 2007 at 17:00 hrs BST (GMT-1). Full details will be made available during the next few days and available from <http://www.world-ostrich.org/member/upmeet.htm>.**

· egg fertility	· feed conversion
· egg hatchability	· deaths
· hatching difficulties	· injuries
· breeder culling rates	· incidence and type of lameness
· percentage chick to slaughter/breeder	· metabolic diseases
	· medicine use and reason

[1] Daryl Holle Body Condition is Most Important: <http://www.blue-mountain.net/feed/feedprogost.htm#BodyCondition>

[2] Patrick Holford Special Report No. 18 – Vitamin D – you are almost certainly not getting enough



## Newsletter No. 56 – November 2007

1. **World Poultry Ostrich Blog**
2. **SA Deregister Hormonal Growth Stimulants in Ostrich**
3. **Increasing Demand for Meat Protein**
4. **What is our Market?**
5. **Ostrich Meat Prices**
6. **World Ostrich Congress(s) 2007**
7. **World Ostrich Association AGM**

### 1. **World Poultry Ostrich Blog**

Eduardo Carbajo from Spain joined the World Poultry bloggers to provide ostrich related blogs. His first topic was welfare of ostrich. The site provides an opportunity to comment on any matters raised for discussion. You can access the blogs at: [http://www.worldpoultry.net/blogs/authorId/31123/eduardo\\_carbajo.html](http://www.worldpoultry.net/blogs/authorId/31123/eduardo_carbajo.html)

### 2. **SA Deregister Hormonal Growth Stimulants in Ostrich**

The following press release was published on October 10<sup>th</sup>

***The Department of Agriculture together with the relevant pharmaceutical industry and the South African Ostrich Business Chamber, have decided to remove all claims from all hormonal growth stimulant products on ostriches. The reason for such a decision is on the basis that the EU is a major export destination for South African ostrich meat.***

***The EU prohibits the use of hormonal growth stimulants in animals that are slaughtered for human consumption. As a consequence, all hormonal growth stimulant products have been de-registered for use in ostriches.***

***All hormonal growth preparations whose package inserts have ostrich claims should be removed from the shelves with immediate effect.***

This is excellent news. It is disappointing that some felt it necessary to include this method of feeding ostrich when the target market is high-end buyers who do not wish to have these products fed to the animals that provide their meat. This ban on using HGS in ostrich by the South African authorities is as a direct result of traces found in ostrich feed during routine inspection by the EU authorities.

### 3. **Increasing Demand for Meat Protein**

The following are all interesting articles discussing the future demand for meat protein, the driving forces and the problems this creates. Please click on the title to download and read each article, they discuss some important and interesting issues:

[Can we Feed the Animals?](#) (Short version)

[Can we Feed the Animals? Origins and Implications of Rising Meat Demand](#) (Full Paper)

[China's rapidly growing meat demand: a domestic or an international challenge?](#)

[How to feed 2 billion more mouths in 2030? Here are some answers](#)

There are many more articles available with similar discussions - last month's issue of World Poultry carried an article on a similar topic, but that is not yet published on the Internet. This is a brief summary of their content:

- further confirmation of the increasing demand for meat protein
- that increase coming in developing countries driven by the increasing buying power of consumers in those countries
- developed countries have reached their growth limit when measured in volume as people have a finite daily consumption of meat
- poultry likely to take the bulk of the increase because of religious constraints on pig meat consumption
- increased production likely to come in developing countries because of reduced production costs
- meat production coming mainly from grains in developed countries
- developing countries produce meat from grazing, crop residues and household waste
- pressure on our natural resources to produce the additional production
- technology improving to help provide sustainable agriculture

Ostrich has a role to play in contributing to the increased demand. As we mention regularly, with ostrich we have one of the most feed efficient of all farmed animals and is probably the most feed efficient of all red meat production animals, when farmed in the right way. Ostrich meat is acceptable to most religious groups including those unable to eat pig meat, thus providing an alternative to poultry meat – not a replacement, just providing more variability for consumers.

Table 1 illustrates the days to slaughter for broiler chicken and different types of pigs, their live-weight and their feed conversion. It is interesting to compare these figures against the production potential of ostrich. The figures for ostrich assume 5 years and 10 years of development from introducing management systems that support high levels of production and nutrition that supports the full genetic production potential in the same manner that pig and poultry production has achieved.

**Table 2- Comparative Production Data**

Specie	Age	Weight	FCR
Broiler Free Range	49+ Days	2.5kg	3:1
Pigs – Pork	120+ Days	75kg	2.4
Pigs – Bacon	140+ Days	97kg	2.7
Pigs – Bacon Heavy	160+ Days	115kg	3.6
Ostrich – World Average	365+ Days	95 kg	6.9
Ostrich – 5 Year	280+ Days	120kg	3.5
Ostrich – 10 Year	280+ Days	140kg	3.0
Ostrich – 10 Year	196+ Days	115kgs	2.1

How many days do you currently take to get your bird's to slaughter, what is their liveweight, what are the meat yields and what is the feed conversion? Whether your production is large or small these are essential measurements of performance to optimise in order to achieve sustainable commercial viability. Optimising the ability to convert feed efficiently requires fewer resources to produce the meat. The fewer days taken to take to slaughter, the less area required, less water to drink and never forgetting that when we feed the birds for maximum production as much as 40% of an ostrich slaughter bird ration is Alfalfa, thus reducing the demand for grains while providing an excellent rotational crop.

During the past month, I have again read articles about excited small producers discussing grazing their ostrich. We must warn members that depending on grazing grass for ostrich

usually results in disappointing results with high levels of chick mortality and other metabolic problems. It will never be possible to achieve the production efficiencies previously discussed.

#### **4. What is our Market?**

Clearly, this large increase in meat demand offers tremendous market potential for ostrich. To supply that market, volumes have to increase significantly. I would suggest we have a phased approach to the markets while building growth that is sustainable to achieve the volumes required to support that increased demand for meat protein. The phased approach described below can apply to whichever country one is working in, as every country has a high-end market and many cannot export to the highest value markets. Establishing the markets in one's own country first should remain a priority.

##### **Phase 1:**

When volumes are low, production costs are high. This is aggravated by the fact that management systems to support the production potential of the current genetics and start a genetic improvement program have not yet been introduced and applied to ostrich. The markets willing to pay above average prices want a consistent product and supply that they can depend on to support their high marketing costs.

Health issues, animal welfare concerns and increasing wealth are among the influences that are changing meat consumption habits in the European, North American and other high end markets. Here, consumers have sufficient wealth that they can now afford to be selective in their choices of meat and willing to pay a premium. Other meats – the category ostrich falls under – as discussed in [Newsletter No. 40](#), currently account for around 4% of total meat consumed worldwide (30% in Europe). This market would be considerably larger if there was a consistent supply in sufficient volume and produced at commercially attractive prices.

Examples of meats classified as alternative meats are Buffalo/Bison, Venison, Kangaroo, Crocodile, Rabbit, Wild Boar and Reindeer. As illustrated above, Ostrich is proven to have the potential for commercial production on sufficient scale to compliment pig and poultry production as major suppliers of meat protein, when applying the right techniques to their production. Buffalo and Venison are both ruminant meats. Not only are ruminants less feed efficient, they also have other negative environmental concerns. According to a study by the United Nations Food and Agriculture Organization (FAO), greenhouse gases from manure and livestock flatulence are responsible for nearly 20% of the total gas trapped in the atmosphere of the planet. They reference Ruminant animals, and in particular cattle, as the principal source of methane emissions from enteric fermentation. The daily emissions from one cow equate to the emissions from a large 4x4 vehicle! (<http://www.fao.org/wairdocs/lead/x6116e/x6116e00.htm>).

This top end of the meat market is willing to pay premium prices. Supplying these markets provides the additional revenue while volumes are low and production costs are high. These markets are serviced by specialist buyers supplying the retail and service industry at the top end of the market that purchase in lower volume and willing to pay a premium for a specialist meat.

This puts the industry on the path to sustainable production that is more able to provide data to effectively predict production. Data is required to support protocols laid down by the larger buyers. These protocols are becoming increasingly important as pressure increases from not only the animal rights lobbyists but also from the consumer concerned how the animals they eat are raised and fed.

##### **Phase 2:**

As production increases, and the data becomes available, it will become possible to selectively supply the high end supermarkets. These outlets demand absolute consistency of supply and quality. Some of these are prepared to pay a premium for the quality product that differentiates them from the high volume outlets, but still require greater volume than is currently available or predicted in the first years. Many producers may wish to stay in this market.

### **Phase 3:**

Phase 3 is reached when there is sufficient volume to supply all demand. At this point the meat becomes a commodity, and some specialist companies will probably differentiate their products to achieve firmer prices, as we see in pig and poultry production.

The production of ostrich meat peaked in 2002 with over 550,000 slaughter birds produced in that year, the number today is less than half. Production remains around 60% in South Africa with the balance spread amongst a dozen different regions, all lacking coordinated production providing erratic volume and quality. South African production especially has been disrupted a number of times over the years with health issues in their herd resulting in closure of their export borders. The European buyers have witnessed their sales halved through lack of supply, not lack of demand. Ostrich will only get past Phase 1 with the introduction of modern production systems capable of supporting their production potential.

### **5. Ostrich Meat Prices Increase**

Ostrich Production in South Africa continues to fall along with a shortage in all 'game' meats. This shortage is signalling a rise in the prices for all game meats. As a result, the South African processors are paying significantly increased prices to their farmers this slaughter season. This provides an opportunity to move ostrich production away from the current low productivity utilising outdated feeding and production practices and into a modern commercial industry as. Of all the game meats, only Ostrich has the ability to become as efficient a producer of meat protein as pig and poultry.

### **6. World Ostrich Congress(s) 2007**

Once again, October witnessed two World Ostrich Congresses – one in Latvia and one in Greece. A report would be most welcomed from any member(s) who attended either of these congresses.

### **7. Annual General Meeting 2007**

The Annual General Meeting was held on 23<sup>rd</sup> October 2007. The minutes are available at the web site – <http://www.world-ostrich.org/member/min2007.htm>



## Newsletter No. 57 – December, 2007

- 1. World Poultry Ostrich Blog**
- 2. World Meat Consumption Data**
- 3. Market Size**
- 4. What is our Current Selling Price?**

### 1. World Poultry Ostrich Blog

Last month we announced the introduction of an Ostrich Blog on World Poultry. This month, in the light of more cases of H5N1 avian influenza in Europe, the blog raised the discussion on confinement of ostrich and asked: "In the event of an avian influenza outbreak, can you suggest, other than those mentioned above, other strategies to avoid ostrich confinement?" The question triggered a number of responses, two of which were from your directors. At the time of publication, 6 responses have been received. The whole discussion can be viewed at: [http://www.worldpoultry.net/blogs/id102-35801/action/showDetails/disease\\_and\\_ostrich\\_confinement.html](http://www.worldpoultry.net/blogs/id102-35801/action/showDetails/disease_and_ostrich_confinement.html).

### 2. World Meat Consumption Data

The FAO have been updating their database system and providing improved data, with a greater breakdown of the alternative meats, the market that Ostrich are sold into when doing a request for consumption of all meat. Previously we had Bovine, Pigs, Sheep and Goat, Poultry and other meats. Today, Turkey and Chicken meat have separate categories. Duck, Goose and Guinea Fowl also have their own separate category. Ostrich fall into 'Other meats', not elsewhere classified (inc. Camel and game).

We are continually asked about the size of our markets. Therefore this month's newsletter will focus on publishing the data with further discussion on how to establish the size of the market. I have downloaded some of the most relevant consumption data and graphed it for easy analyses. I have printed them in a pdf document that is available for viewing and downloading from the web site. That document forms a supplement to this newsletter, <http://www.world-ostrich.org/member/news57sup.htm>. The statistics are not direct comparisons to those published in earlier newsletters as the format in which they are now presented and the country groupings have changed with the new database. The database provides a greater amount of information made freely available.

### 3. Market Size

There are two aspects when discussing market size.

#### a. Existing Market

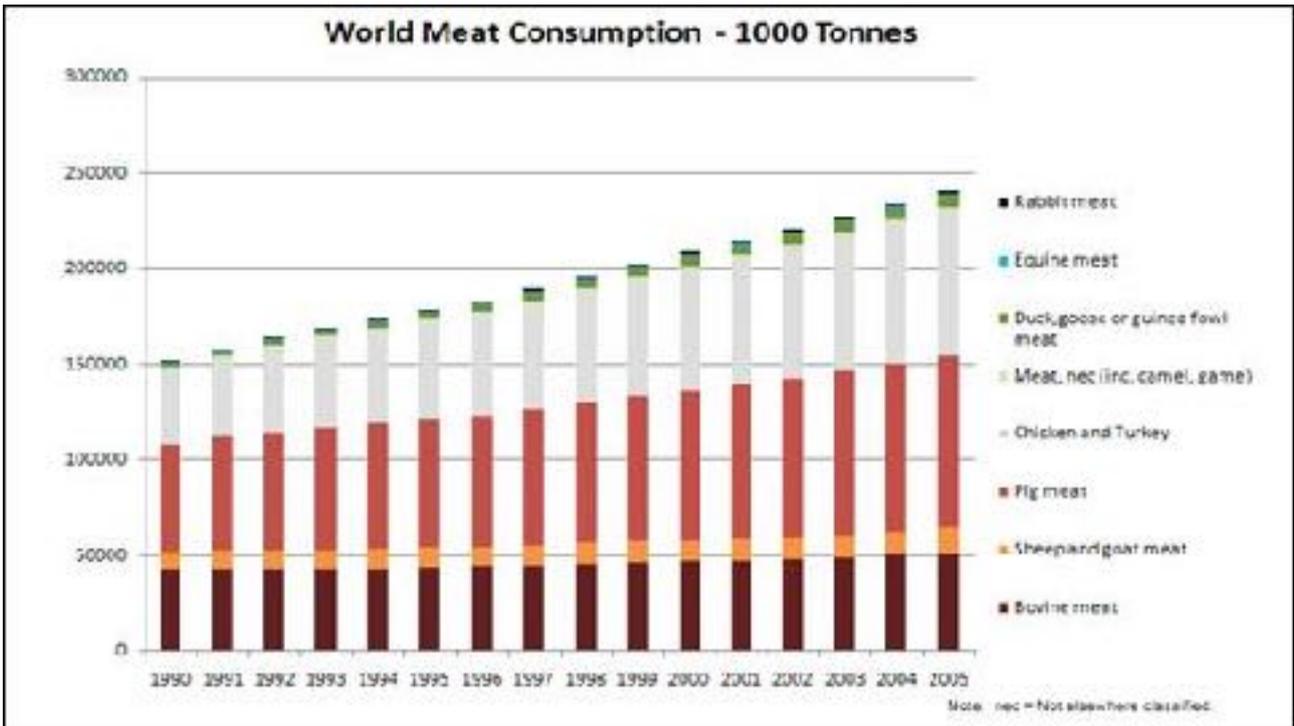
The ostrich meat has been available for sale for no more than 15 years, with limited production and sales slow to develop as a result of such things as :

- Low volume
- Inconsistent quality
- Inconsistent supply
  - Aggravated by interrupted exports as a result of Avian Influenza, Newcastle Disease and Congo Fever
- Fragmented supply
- Limited marketing

**b. Potential Market**

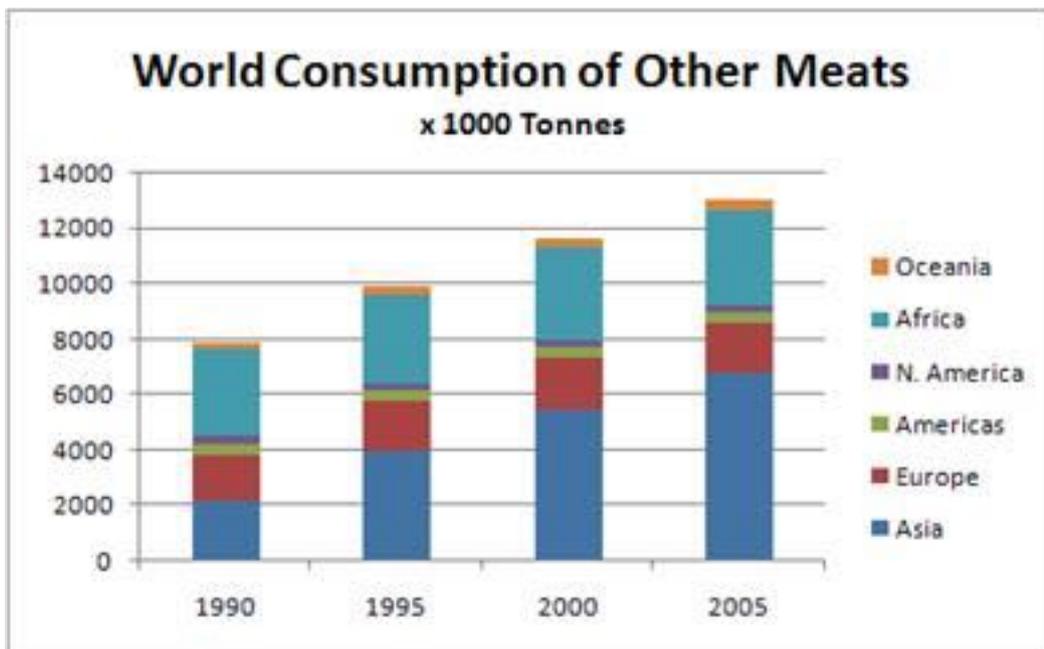
Understanding the potential market should be the area of focus in order to develop a sustainable industry, provided there is production to support the development and the meat produced to an acceptable quality, consistently supplied and at the right price.

Figure 1 confirms the continual rapid growth of meat consumption that continues to be driven by increasing wealth in developing countries. The total meat market (excluding fish) has grown from in excess of 150 million tonnes in 1990 to 240 million tonnes in 2005. That is a growth rate of almost 60% in 15 years, thus confirming the predictions of significant growth in meat consumption.



**Figure 1 - World Meat Consumption**

The consumption of all other meats Rabbit, Equine, "Duck Goose and Guinea Fowl" and "Meat Not Elsewhere Classified (including camel and game)" - as illustrated in Figure 1 - is a very small percentage of the total consumption. The major reason for this is the lack of efficiencies in production of those species that make up that group. However, it is still a group showing rapid growth, moving from just short of 8 million tonnes to in excess of 13 million tonnes over 15 years (Figure 2).



**Figure 2 - Other Meat World Consumption by Region**

Figure 2 illustrates the regional distribution of consumption of other meats. Table 1 is the index of [the supplement](#) to this newsletter, with a number of graphics. The supplement is available only on line by clicking [this link](#). We are a World Association, therefore it is important to reflect the variations in consumption by region as our markets are all different. Slide 6 illustrates the consumption of other meats in the different regions and, when studied, readers will be amazed at the significant variations from region to region. No two regions are the same.

**Table 1 - Supplement Index**

Details	Number	Details	Number
World by Region	3	World by Type	4
World other meats by region	5	Regional comparisons	6
World Other meats by percentage		Other Meats	
World other meats by type			
European by percentage of world			
Asia	7	Europe – Northern, Southern and Western	8
Europe – Eastern	9	North America	10

America – not including N. America Includes Central and South America	11	Oceania	12
Africa and Developing Countries	13	Maps of Regions	14
Map of Europe – listing Countries	15	Northern Europe – listing countries	16
Eastern Europe – listing countries	17	Southern Europe – listing countries	18
Western Europe – listing countries	19	Developing Countries	20

So what is the size of the potential size of the market? To capture just 1% of the world 2005 alternative meat market requires nearly 3m slaughter ostriches/annum.

What is the size of your market potential?

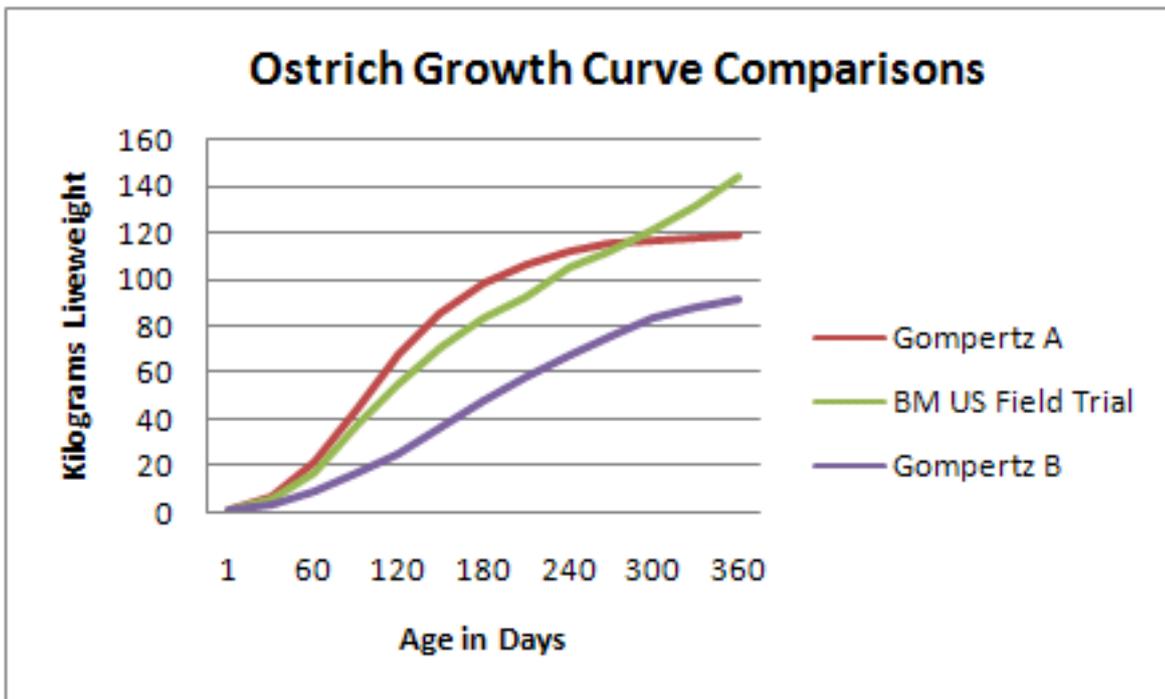
The answer to that question depends on a number of factors - such as:

- Location
  - Local Market
  - Export market
    - If export market, which market and can you meet the protocols required
- Identifying your target market
  - Red meat target market
  - Low fat meat
  - Cheap meat – commodity market
    - Buyers on open market with limited (if any) supplier loyalty
    - Low price
  - Exclusive Meat – low supply seeking product differentiation
    - Seeking specialty product
    - Recognises need to pay premium price
    - Requires confirmed consistency of supply
- Production costs
  - Influence selling price required for profitability
- Ability to supply consistently
  - With Ostrich this requires production systems that ensure:
    - Consistent egg laying
    - Consistent hatchability
    - Minimal mortality
    - Consistent days to slaughter required to achieve meat yields
- Quality of product for target market
- Selling price sufficient to sustain consistent supply

Understanding fully the controlling influences of that final point is the key to progressing this industry and to date remains the barrier to progress.

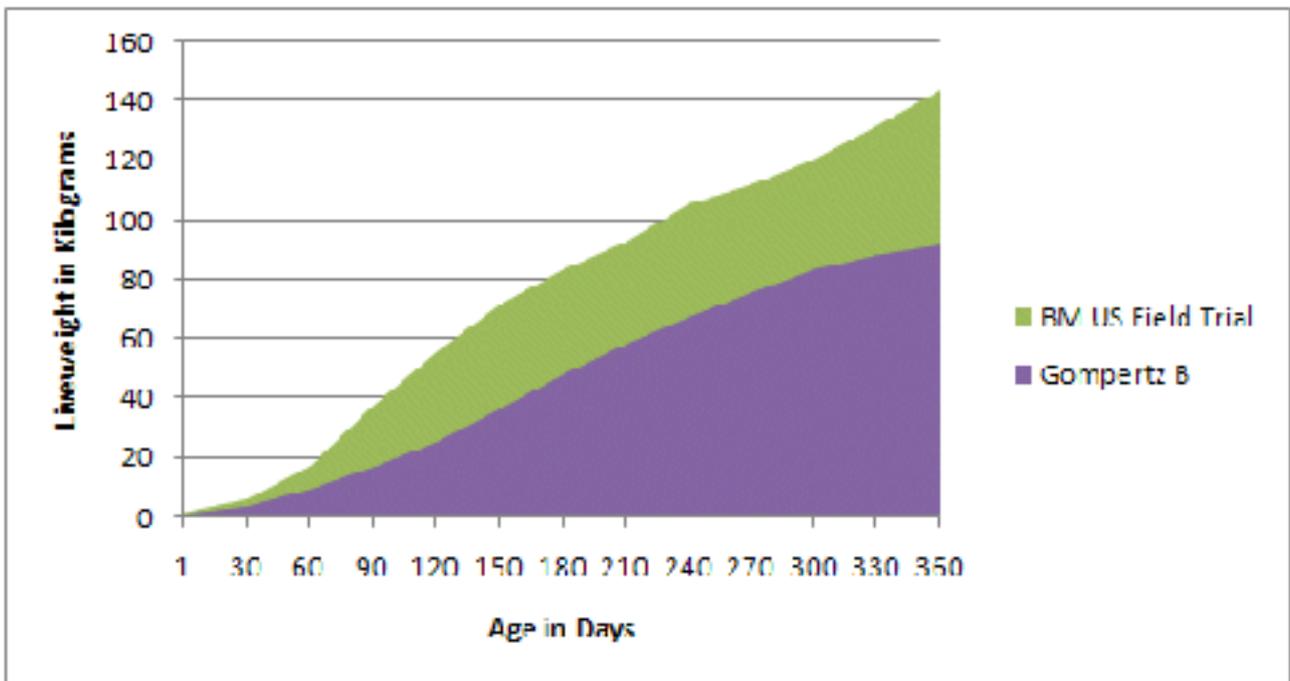
#### 4. What is our Current Selling Price?

To answer that question requires time to study the pig, poultry and beef industries and their progress to maturity over the last 50 years. Such a study explains why it is a challenge to compete at that level at this stage of our industry..but the potential is there to be extremely competitive. The comparative growth curves in Figure 3 are probably familiar to most readers. The lower curve is the current well documented industry average, the Gompertz A is a model that was developed by the scientists at Stellenbosch University in South Africa in 1992 as the potential growth achievable, when birds grow to their full genetic potential. The US field trial was produced in 1996/97 to demonstrate the type of growth farmers were achieving in the US during the period until their industry collapsed at the end of the breeder market. The current industry average achieves a liveweight of 95kgs in 365 days. Note the growth in the top curve achieves the same liveweight in 150 days, and the US birds in 210 days before any genetic work has been started. That is a tremendous saving on feed usage.



**Figure 3 - Comparative Growth Curves of Ostrich**

The green area in Figure 4 illustrates the difference in weight, the majority of the weight difference is in meat, which means significantly more revenue per bird, as that equates to a minimum of 50% additional meat and in many cases, as much as 100%. Processing costs are also reduced. As the birds can only eat a certain amount each day, clearly, when additional weight is gained for the same amount of feed, the conversion rate of feed to meat is reduced.



**Figure 4 - Additional Meat**

It requires feed containing the right nutrients at sufficient levels to make this difference, but this is the way to reduce the costs of production. Paying attention to Optimising the genetic feed conversion supported by tight management controls have created the efficiencies now seen in pig and poultry production – and is required to produce meat at competitive prices. It can be argued that our selling prices have to be in the exclusive meat market were we operate at lower volume and start the process of genetic improvement to bring about the improved efficiencies that pig and poultry production has witnessed over the past 50 years.

Prices are currently increasing as supplies reduce. This is an opportunity to introduce production systems that can improve efficiencies to enable the industry to compete on equal terms with other types of meat.



## Newsletter No. 58 – January 2008

1. Happy New Year
2. **Papers from World Ostrich Conference in Latvia**
3. **Avian Influenza**
4. **Marketing**
5. **Industry Information**
6. **Nutrition**
7. **Anatomy**
8. **Incubation**
9. **Semen Collection**
10. **Products**

### 1. **Happy New Year**

Your directors wish you all a happy holiday season and prosperous 2008.

### 2. **Papers from World Ostrich Conference in Latvia**

The proceedings from the conference are available for purchase at Euro30. Contact: Irena Kalnina, email [firmaed@inbox.lv](mailto:firmaed@inbox.lv) to obtain a copy.

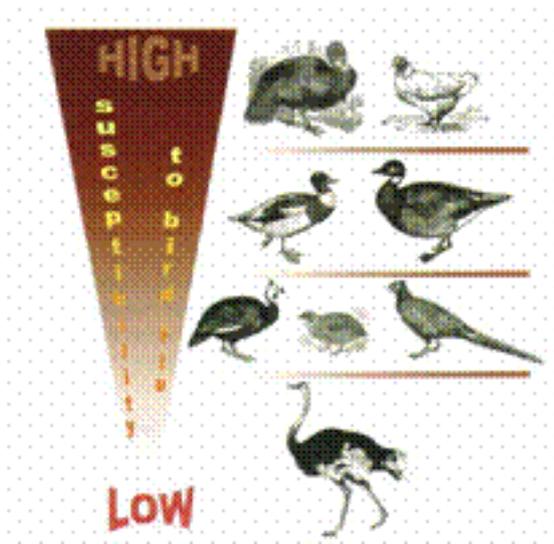
The 21 papers include:

- 6 Relating to industry information
- 4 discussing products
- 2 each on marketing, nutrition, leg problems and anatomy
- 1 each on disease, management and incubation

Some of those papers discuss more than one category. This month we will discuss some issues raised in the papers. Clearly it is not possible to write a review of every paper.

### 3. **Avian Influenza**

A paper on “The Effect of avian influenza on the Ostrich Industry”, jointly authored by Tamasik, Horbanczuk and Cooper discussed the low susceptibility of ostrich to bird flu – figure 1. The paper also included discussion emphasising the increasing importance of disease in the general meat supply chain, both on consumer confidence as well as the economics of production.



**Figure 1 - Susceptibility of Ostrich to Bird Flu**

Unfortunately, many of you will have read the reports from Saudi Arabia during December of the cull of 13,500 ostriches at Dessert Ostrich indicating that ostrich are proven susceptible, not only to the other strains isolated from Ostrich previously, but also now, H5N1.

Dessert Ostrich is situated in an area surrounded by poultry farms that were infected with the H5N1 virus. The following details are reported:

- No breeders tested positive
- Positive tests were found in grower birds
- o No signs of haemorrhaging in the heart or liver were observed
- o No green luminescent urine was observed
- o Birds showed symptoms of intestinal haemorrhaging

Samples were sent to Italy for testing. It is not clear if these results have been reported. The results have not been reported to the Managers at the farm.

This is the first confirmed case of H5N1 in ostrich and confirms the challenges of raising any livestock under intensive conditions and the need for the highest standards of biosecurity to be employed. Our condolences to Dessert Ostrich.

### **1. Marketing**

Two papers discussed marketing. Alan Stables gave bulleted tips, all basic marketing information that is excellent information, but neglected an important element in food production today from livestock – especially when marketing into Europe, procedures required to gain access to the market.

As we have mentioned many times, assurance schemes are becoming an integral part of marketing, if these are not in place, you do not have access to the market. Schemes that cover such things as :

- Animal welfare
- Traceability
- o Animal movements
- o Feed Ingredients
- o Medication
- Veterinary plan

To put these schemes into place takes money and requires volume. Marketing starts on the FARM – if these procedures are not in place, in today's market place, the market is small.

The other paper on marketing was a small study in the UK. The opening statement referenced at 14 months of age an ostrich can yield 35kgs of meat. Any producer aiming for 35kgs of meat in 14 months – 420 days will only survive if they have substantial revenue from other sources as well as meat. The paper also highlighted the challenges of marketing into a low volume fragmented market, but failed to identify the high costs associated with supporting such a large product range of fresh produce in a low volume market.

## **2. Industry Information**

The opening paper discussed the Ostrich Industry in Middle and Eastern Europe, excluding Germany. The paper referenced Poland as the leaders in Europe with 250 farms and several thousand birds, with an average of 10 - 12 breeders per farm compared to the Ukraine with an average of 50 breeders. From the way it is written, we have to assume the author (Professor Jaroslaw Hobanczuk) is referencing individual breeders, rather than breeder hens, pairs or trios.

Prices for different cuts of meat were referenced, but it was not stated if the prices quoted are wholesale (ex. processing plant) or retail. If wholesale, then the prices quoted are similar to those in Western Europe. One valid point made was the importance of volume, quoting a big city supermarket ordering only 20 – 25kgs meat per week, making it uneconomic to supply.

Under advantages of producing ostrich in the region was the regular purchase of slaughter birds at €1.80 to €2.00/kg live weight. The author does not specify the reason for the difference. The WOA recommend payment on a boneless meat basis, plus skin on a graded basis. That encourages good practice and ensures that the good birds are not subsidising poor management practices. It is not made clear if the purchases are made on a contract basis or as required. The former enables regular throughput through a slaughter plant and the producer to know that if they produce birds as required they will be moved out of the farm on the set dates, thus incurring no further costs once the bird is market ready. This is critical for commercial livestock production.

Dr. E. Carbajo, from Spain, discussed welfare issues and raised the point that there has been a lack of communication between the industry and welfare associations. The WOA directors have now opened discussions with various welfare groups. Progress will inevitably be slow while there is limited production, and the high volume species take the bulk of their time.

The reports from Iran, China and Brazil all indicate continued challenges to make the transition from breeder markets to commercial production. We have heard similar reports so many times over the years from every country working to establish an ostrich business. All 3 countries have tremendous potential if they are able to implement the same efficiencies in production systems as achieved by the pig and poultry industries.

## **3. Nutrition**

A number of the papers referenced nutrition, several covering nutrition in detail with some conflicting comments and information. Not one of these papers discussed feed conversion, days to slaughter or meat yields – or any of the key measurements that influence the costs of production or generate revenue from the bird.

Nutrition has the greatest control over costs of production, health and product quality and is a major subject on its own. Our comments are confined to two small areas (utilisation of fibre and ration formulation) that illustrate lack of precision and nutritional expertise.

### **Fibre**

It is well documented that Ostrich are efficient at digesting fibre. However, a fact that is all too often overlooked is that fibre must be packed with nutrients as any animal must have sufficient nutrients for health, maintenance and production. The following is a quote from a paper with 7 co-authors entitled “Some regional thoughts on ostrich farming in arid zones”.

Quote: “Agriculture produces a lot of fibrous by-products. Theoretically, if we use the wheat grain for humans and wheat straw for ostriches or apple juice for people and apple juice residues for ostriches, etc. ostrich production will become considerably cost effective given feed is a major expense.” End Quote

It is clear from that statement that the co-authors do not have a background in animal nutrition. For any animal (including humans) to be healthy and productive, requires a certain level of different nutrients and in the right proportions to each other. The actual levels and sources of those nutrients can vary between species, but all of these fibre by-products mentioned have very few nutrients in them. Ostrich eat very little in proportion to their body weight, so require ingredients that are packed with many nutrients – such as alfalfa/lucerne, which carries not only an excellent source of digestible fibre, but is also an excellent source of protein along with many vitamins and minerals essential to good health.

**Table 1 - Comparative Nutrient Content Different Sources of Fibre**

<b>Ingredient</b>	<b>Protein</b>	<b>Fibre</b>	<b>Calcium</b>	<b>Phosphorous</b>
Alfalfa 18%	18%	25%	1.3%	0.25%
Wheat Straw	3%	42%	0.1%	0.04%
Grass	16%	23%	0.7%	0.22%

If the total amount of food an animal eats in a day does not provide all the nutrients required, the animal suffers from poor production and poor health directly in proportion to the amount of nutrients either lacking or available for digestion in the diet. Table 1 illustrates that wheat straw provides very few nutrients by comparison to Grass and Alfalfa. Therefore to achieve the right amount of nutrients, they will need to eat a lot more food provided by other ingredients or the animals will suffer malnutrition. In this situation, because animals have an upper limit on the total amount of food they can consume, they end up short of nutrients. Cheap ingredients reduce the cost of feed does does not mean costs of production are reduced. If no production it is the most expensive policy.

### **Ration Formulas**

Two papers provided detailed formulas, but these were not accompanied by information on the results from their use - i.e. how many eggs laid, chicks hatched, numbers surviving to slaughter, days to slaughter, liveweight at slaughter, meat yield at slaughter.

When formulas are published, there is a responsibility by the authors to ensure that it is very clear exactly what the ingredients are and when available in different qualities, to specify the quality. Lucerne analysing at 15% protein on an as feed basis, will produce a totally different ration to Lucerne at 18%, as will soyameal at 44% protein or at 47% protein. In one paper, 2 ration examples are given and specify only “premix”. All premixes are not the same and when correctly designed are designed to balance to the rest of the ingredients used; they are not something that is added to a mixture of different ingredients.

That same paper provided the breeder premix published by the South African scientists, but failed to differentiate the B vitamins – this was probably a printing error, but not the first time these premix rations have been copied with errors. The B vitamins were not clearly specified as B1, B2, B6, B12 etc. all of which have totally different functions in a diet.

The other formulations are published by a premix company and while they specify which soyameal quality is required, they fail to specify the quality of the hay and dry lucerne in the rations. The lower grade soya they specify as 42%-46%. This indicates that the lower grade soya in the region may be inconsistent and if there is that amount of variation from batch to batch, then even if all other ingredients are exactly the same, variations in performance will result.

The pig and poultry industries have become as efficient as they have through paying attention to details like this, watching feed conversion and how many days it takes to get their stock to slaughter.

There is reference to feeding 2% to 2.5% forage as body mass. They do not specify if they mean fed as a wet feed, in their natural state or dried as hay. This is important as 2% of body weight for a bird of 100kgs is 2kgs and on a 90% dry

matter basis it is 1.8kgs of dry matter. If that same ingredient is only 20% dry matter, as found in some silage and fresh material, then they receive only 0.4kgs of dry matter.

#### **4. Anatomy**

There were several papers covering anatomy. Two cover leg problems and one is a study on Morphological characterization of the stomach in postnatal ontogenesis of the African Ostrich.

##### **Leg Problems**

One paper covered a detailed study of chicks with bow legs and another study on curled toes. The cause of these problems is already known and when research funding is limited, it is a pity to see research funding spent in this direction.

Neither studies provided any background to the parents or case study chicks, feed and management systems used. Both studies referenced certain nutrient issues that are well documented, but it is always dangerous to discuss nutrients in isolation as there are many interactions between vitamins and minerals, along with other nutrients required at the correct levels. The study on the bow legs did reference evidence of infection and this can be seen in the gut in an illustration. When the gut becomes infected in that way, it is well documented that the affected animal cannot absorb nutrients adequately and becomes malnourished, even when fed the best rations.

##### **Stomach**

This paper was a study on the difference in the stomach of chicks at 2 – 4 days and 12 – 14 months and provides a detailed description supported by photo graphs and measurements.

#### **5. Incubation**

The paper on incubation set out to study the selection of eggs, preparation and incubation factors that influenced the mortality in chicks. The study covered a 2 year period on 3 different farms. No reference is made the management systems in use for the breeders e.g. pairs, trios, colonies, diet fed, weather, nest type and so on. Any of these factors also influence egg quality and hatchability prior to entering the hatchery.

The study clearly demonstrated a correlation in reduced hatching percentage resulting in higher chick mortality. They also noted a clear correlation in careful selection of eggs, disinfection and hatching and mortality. They also noted that changes in humidity and temperature norms resulted in chick deaths.

#### **6. Semen Collection**

Semen is required for evaluation of semen quality, fertility and ultimately artificial insemination. There was a paper "Semen Collection in Ostrich", co-authored by Irek Malecki, Australia with Jasoslaw Horbanczuk, Ewa Lukaszewicz and Henryk Naranowicz from Poland.

The paper discusses different methods for collecting semen. Figure 2 is using an Artificial Cloaca (AC) and female tease. Figure 3 and 4 uses the AC placed inside a dummy which the male is trained to mount without requiring a teaser. They also tested the manual massage method of collection.

**Figure 2 – Artificial Cloaca after intercepting Phallus**



**Figure 3 - Male about to mount Dummy**



**Figure 4 - Male Ostrich sitting on Dummy**



The paper concludes that development in animal friendly methods of semen collection have advanced in recent years.

Quote: *“The ratite production is inefficient because it is constrained by the biology of the species that are not matched by management strategies or practices. Inadequate rates of egg production, fertility, hatchability, too high embryo mortality, poor chick survival or growth rates are some of the problems. The solution would be a structured breeding program that would achieve rapid genetic improvement in reproductive and economic traits.”* End Quote

A structured breeding program is essential, but to achieve that, first the causes of the production problems need addressing. It also requires strong markets to support the development.

## 7. Products

### Meat

Two papers covered meat studies. Daina Karklina and Janina Kivite discussed the nutritional value of ostrich meat produced in Latvia. The paper concluded that the chemical composition of Ostrich meat had no significant difference from other meats. That it contained significant quantities of B Complex vitamins, Vitamin E, Iron content, polyunsaturated and essential amino acids. Ostrich meat in their study had the highest content of Vitamin E followed by Chicken and then beef.

Krzysztof Lendzion, from Poland presented a paper on terminology classification and possibilities of use of ostrich meat. The focus was on the providing the meat with classification, clearly define the off cuts and then to show how to use the Class III meat

Class I is the major muscles as we know them demembrated. Table 2 is the classifications of Class II and Class III Meats

<b>Class</b>	<b>Characteristics of meat</b>	<b>Utilisation</b>
<b>IIM medalions</b>	Chop-like meat cuts of 80-100g weight without membranes, tendons and fat	Culinary
<b>IIG stew</b>	Non-calibrated, little pieces of meat under 80g without membranes, tendons and fat	Culinary. Suitable for coarsely and medium grind sausage
<b>IJJ Jambooneu</b>	Leg muscles with tendons and membranes	Cooker (after initial heat treatment)
<b>IIIA</b>	Lean off-cuts containing some connective tissue produced in the course of trimming of carcass	Culinary. Suitable for fine grind sausage and homogenised sausage
<b>IIIB</b>	Ribcage meat with some fat and connective tissue	Suitable for fine grind sausage, homogenised sausage and cold foods. Suitable for production of mechanically recovered meat (soft separation)
<b>IIIC</b>	Membrane with some meat attached left and thorough cleaning of class I and II elements	Additional raw material in production of fine grind sausage (of short shelf-life), homogenized sausage and cold foods. Suitable for production of mechanically recovered meat (soft separation). Raw material for animal food.

### Leather

Candido Carrillo Gonzalez gave a listing the many factors that influence the potential return on skins, with a long list of factors that have an impact. All factors listed are basic management issues and common sense, but we continue to see lack of attention and wastage as a result of these management issues being ignored.

### **Oil**

With their large fat pan (belly fat), the ostrich has a good supply of easily harvestable fat. George Nieuwoudt, from South Africa, presented discussions on utilising the fat for Biodiesel. The early work indicates that it is possible, but there is still more work to be done.



## Newsletter No. 59 – February, 2008

1. Introduction
2. Genetics
3. Forage Testing
4. Alfalfa suitable for most climates

### 1. Introduction

The meat market is highly competitive and never more so than today, with rapidly increasing grain prices that make excellent feed conversion ever more important. Previously we have discussed the tremendous efficiencies that have been experienced with main stream species that have contributed to their ability to produce meat extremely cost effectively. In fact enabled meat to be available to many more people and at very low prices. This has been achieved by tremendous improvements in nutrition, feed management and farm management. This has enabled the true genetic ability of the animals to develop. We can name such companies as Cobb, Genus, JSR, Aviagen, Ross, PIC and many more that specialise in developing the genetics to provide farmers with animals to suit the current market demands. In recent years these genetic companies have amalgamated in a similar manner that the feed companies and other technology companies have done.

Studying the major genetic companies highlights an interesting and relevant point – that they are dominated by pig and poultry industries, but there are a number of ruminant companies specialising in AI and embryo transfer.

This newsletter will focus on Genetics as they apply to ostrich.

### 2. Genetics

In this context, FCR is Feed Conversion Ratio.

A short quote from an extremely interesting article at [thepigsite.com](http://thepigsite.com):

#### Genetic Gains - FCR Should Be The Focus

*By Jane Jordan, ThePigSite Editor. As feed costs continue to rise pig producers are trying to squeeze every scrap of growth and performance from their herds - which is not easy given the many variables involved in producing a quality carcasses.*

*Genetic progress is vitally important, but it's often compromised when the going gets tough.*

*What should producers be considering for their breeding programmes to maximise efficiency?*

*Ed Sutcliffe, Technical Director at Yorkshire-based breeding company ACMC, says feed efficiency (FCR) should be the priority for any pig business.*

*"Producers should be considering the same criteria whether they have a high-health herd or disease challenged stock. When selecting genetics for use in the current climate it's vital that the breeds used have a history of being selected for feed efficiency," he explains.*

*He says producers should be asking two key questions:*

*Does the genetics supplier consider feed efficiency important enough to actually measure feed intake and efficiency at nucleus level and on an individual basis?*

*Can the breeding company demonstrate ongoing improvements in feed efficiency and growth rate?*

End Quote

With the Ostrich industry developing globally, but no consistent slaughter market, there has been little or no genetic improvement programmes yet in place with ostrich. Success has been measured in the ability to keep chicks alive and few pay attention to Feed Conversion and days required to finish a bird. To add to the confusion, dealers refer to birds as Red, Blues or Blacks. Dr. Mike Jarvis presented the following table to clearly identify different genetics, indicating that there are many more than 3 sub-species.

Feature	N.African	Massai	Somali	Zimbabwe	Kalahari	Namib	W. Coast	Oudtshoorn
Crown (Bald?)	Yes	No	Yes	No	No	No	No	Yes/No
Neck Skin Colour	Pink	Pink	Blue	Grey	Grey	Grey	Grey	Grey
Neck Collar (White)	Wide	Thin	Nil	Thin	?	?	Thin	Variable
Neck Bare	Yes	Yes	No	No	No	No	No	No
Eye Colour	Brown	Brown	Blue	Brown	?	?	Brown	Brown
Body Skin (Male)	Pink	Pink	Blue	Grey/blue	Grey/Blue	Grey/Blue	Grey/Blue	Grey/Blue
Body Skin (Female)	Brown	Brown	Brown	Brown	Brown	Brown	Brown	Brown
Leg Scutes (Males)	Red	Red	Red and Black	Red	Red	Red	Red	Red
Tail Feathers (Male)	White	Pale Brown	White	Rusty	Pale Brown	Pale Brown	Pale Brown	Rusty or White
Tale Feathers (Female)	Brown	Brown	Brown	Brown	Brown	Brown	Brown	Brown
Adult Weight Average kg?	105	135	105	125	?	100	90	115

**Table 1 - Summarised differences between ostrich races. Data from Brown et al(1982, Jarvis (1991) and Jarvis (unpublished data)**

Missing from the table is the Australian Grey. Note also the very low live weights that many have proven can be exceeded. However, it does illustrate that some breeds do not have the same genetic ability to gain weight as others and this is an important factor. However, it is only possible to establish the true genetic traits once we not only eliminate the current symptoms of malnutrition causing stunted growth, but also provide sufficient nutrients to enable the true genetic traits to flourish.

The article goes onto discuss the need for producers to understand the requirements of the processors:

Quote: "Processors want to ensure they have the best pigs to suit their system and retail customers. It surprises me that producers change their genetics without consulting their customer - the processor," says Dr Walling.

JSR has spoken to a number of processors on this issue and has found that of the three major UK processors they only knew of three producers that had contacted them prior to changing the boar lines.

*"Can you imagine a company like Heinz deciding to change the type of beans in their cans without any customer research? Those keeping pigs should keep one eye on their customers' requirements," he advises. End Quote*

Processors we have spoken to prefer birds with larger muscles, as found on birds with 70kg carcasses as they are more usable. As an industry we are fortunate that we are at the beginning of the genetic development and improving the FCR is the first place to cut the costs of production and overcome the increasing price of grain.

We have to look at the successful specie as examples, until our own industry commences serious genetic work. Another [article](#) references 8 points to consider, two points illustrate the importance of genetics, just how tight margins are today and the important part genetics play in improving efficiency and profit margins.

Quote: *"Will it deliver product that my outlet wants – optimising sale weight on a specific contract?"*

*There are many modelling systems available to identify target sale weights – it is useful to check regularly as circumstances will change. If feed is say £180/t and food conversion efficiency (FCE) in the final finishing stage is say 3:1, than the cost of adding an extra 5kg to your sale weight (3.75kg deadweight) will be £2.70.*

*If this is a marginal value, and all other costs are covered, at a market price of say 105p/kg a 78.75kg carcass will deliver an £3.94/pig advantage compared with a carcass finished to 75kg. Alternatively, the extra slaughter value can spread fixed costs over more weight to reduce the impact of costs per kg. Cash flow may be an issue to fund the extra growth, but the value is still there and if the pig is achieving the heavier weight in the same time then the cash impact should be minimal.*

*However, if you want to target a carcass weight above 75kg it is important that you make sure your sireline has been selected to maintain high growth rates above 100kg liveweight. Piétrain breeds traditionally slow down markedly above 100kg liveweight, so finishing at 75kg deadweight may be the most efficient target for progeny of these sirelines. End quote*

Quote: *"Look for a track record – establish what performance can be achieved, realistically. Genetics is perhaps three per cent of costs, of which perhaps up to a half will be sireline genetics. So, if the cost of production is say 120p/kg, then the sireline genetic cost per pig at 75kg deadweight is about £1.35p. An extra 50g growth per day is likely to be worth £1.50/pig and an improvement of 0.08 in FCE could be worth £1.30/pig.*

*When times are hard make the genetics work - it may not be one of the largest costs, but producers should ensure that they are earning the most value from it. The cost of genetics is unlikely to make the difference between a business sinking or swimming, but the right genetics certainly can. Think carefully before making a change.*

*It is not possible within a genetic selection programme to make changes instantaneously. So if you want it all... and you want it now... then look for established sirelines with a proven record that are delivering now, yet have further potential for the future".*

In contrast, [The Agricultural Research Council](#) in South Africa makes this statement when discussing genetics of ostrich and is another clear indication that the industry to date has paid no attention to traditional production agriculture economics :

Quote: *A private breeder funded the purchase of a set of seven microsatellites for ostriches. The microsatellites were selected after consultation with ILRI (Dr. Kimwele). All the markers showed high levels of variation that make them ideal for parentage determination and genetic variation studies. Although this service is rendered at this stage only to a single breeder, it is hoped that the service can be expanded to the entire ostrich industry. It is also the first attempt to combine genetic information with a breeding policy for ostriches. End quote*

This is part of a document discussing genetic tracking in several specie and feed conversion, meat yields and other measures of efficiencies are not mentioned during the discussions.

### **3. Forage Testing**

Forage testing is normal practice in livestock farming. A forage test supplies essential information about the nutritive value of hay. It is essential to ensure the rest of the feed provide balanced rations capable of supporting the production group. Dairy genetics have improved dramatically over the years and feeding the forage and other ingredients as a complete feed is becoming the norm, to enable accurate intake of sufficient nutrients to support high levels of production without the metabolic problems long associated with milk

production. Today, dairy cattle fed in this manner can be seen in grass paddocks for exercise, but they do not eat the grass as they now receive their total nutrient requirements in the feed bunker.

Some useful articles on forage testing:

[Analyzing Your Forage](#)

[Hay Probes](#)

[Forage Quality Testing and Markets](#)

[Basics of Forage Testing\\*](#)

[Collecting Forage Samples\\*](#)

Quality alfalfa amounts for as much as 40% of ostrich diets, so accuracy in forage analysis is essential. The two articles marked \* are also available on the WOA web site for download as these are excellent documents regarding a better understanding of sampling methods and testing systems

#### **4. Alfalfa suitable for most climates**

Alfalfa/Lucerne is an important component in an ostrich ration. Working with any other forage ingredient is always a compromise that will cost production and limit the ability to achieve the full potential of the best Ostrich genetics. We are often told that it is not possible to grow Alfalfa in this country or that so, when a member informed us they had been told that the bug situation made it too expensive to produce alfalfa in their country, I emailed a scientist from their region who had done some trials. The response received was very positive:

Quote: *We have studied some alfalfa cultivar under laboratory conditions and some of them exhibited high levels of resistance.* End quote

He gave me an introduction to a scientist whom he believed to be more up to date with information in the region. The response was also positive – it illustrated the management factors required, but concluded that the production of Alfalfa can be commercially viable in the region. The comments relating to the diversity of Alfalfa as a crop adaptable to extremes of climatic conditions are of significant importance. As with all agricultural crops and livestock – it requires high standards of management to achieve optimum production with commercially viable returns.

Quote: *Being a plant of temperate climate, alfalfa, due to its wide genetic variability, is able to adapt to differing climates and altitudes from sea level to high valleys, so that it can be cultivated in almost any part of the world.*

*It has been found that regarding ambient temperature, the yellow-flowered alfalfa (Medicago falcata), for example, survived temperatures as low as minus 28C in Alaska, whereas some common varieties (Medicago sativa) were grown in Death Valley in California, USA, with temperatures up to 54C. And, among the common varieties (M. sativa), the variety "Crioula" is the best adapted to the State of São Paulo, which is in the south east region of Brazil. However, the most significant factor influencing the production of alfalfa in any part of the world is soil fertility, which can actually rule it out as a demanding economic crop. The soil must have high fertility, with pH between 6.0 and 6.5. I should point out that soils in Brazil are of low to medium fertility, with pH between 4.0 and 5.0. This must be adjusted, that is to say the soil fertility must be improved for the production of forage alfalfa by the application of appropriate elements (dolomitic lime). As well as this, soils must be deep, of average texture (sandy-clay), be free of compaction, have good permeability, with any aquifer being deeper than 2m., and irrigation must be available. Regarding irrigation, although it is a plant which is fairly resistant to drought, high production of forage will only be obtained with supplementary water during periods of drought stress.*

*Therefore, by taking account of and correcting certain requirements, as mentioned above, the commercial cultivation of alfalfa is reasonably viable in the State of São Paulo, in the south east region of Brazil.* End quote

The answer therefore is that it is possible to grow alfalfa in any region or climate in the world providing the soil and management conditions are correct and in areas of high humidity there will be an additional problem of drying to overcome. To achieve commercial production of alfalfa will require ostrich producers working in collaboration with arable producers and the local scientific community to achieve commercial production of alfalfa.



## Newsletter No. 60 - March 2008

- 1. Genetics and Incubation**
- 2. Poultry Nutritionists and Veterinarians – How interactive are they?**
- 3. Optimum Vitamin Nutrition™**
- 4. Feather Pecking**
- 5. Avian Influenza – Saudi Arabia Ostrich Negative**

### 1. Genetics and Incubation

Last month we discussed the lack of genetic development in the industry and the many different genetic strains. It is interesting to read developments in the poultry industry with their significant genetic development that has taken place over the past few decades. Today they have specialist genetics for Broilers, Layers and now specialist Free Range has been added to the genetic pool of production birds. In less than 30 years, what was already an efficient industry, has brought the rearing period down from 84 days to 42 days and in some cases even shorter periods.

The halving of the finishing time of poultry has meant that 33% of their life span is now spent in the incubator compared to 20%. This has resulted in recognition of the increasing importance of incubation conditions on the growing embryo and chick to the growth performance and feed conversion. This document produced by one of the hatchery companies is interesting reading and provides further clues of just how far our industry still had to develop to become a successful commercial industry. [http://www.pasreform.com/downloads/Pasreform\\_Basics\\_artikelen.pdf](http://www.pasreform.com/downloads/Pasreform_Basics_artikelen.pdf)

The importance of breeder nutrition is already well recognised as critical to optimising egg quality and chick quality. The increased attention now paid to incubation assumes the readers already understand the role of breeder nutrition in the process. The same principles apply to Ostrich.

### 2. Poultry Nutritionists and Veterinarians – How interactive are they?

The following blog, authored by Mojtaba Yegani, was published this month under this title on [the World Poultry web site](#).

*The poultry industry is a complex network of technical people with different educational backgrounds such as genetics, production management, nutrition, veterinary medicine, and engineering. Nutritionists and veterinarians are usually considered as two dominant categories in commercial poultry production. It is a well-known fact that having a fully cooperative management team is of paramount importance in order to be able to achieve production goals and stay in this highly competitive business.*

*Efficient interactions of poultry nutritionists and veterinarians are essential to this accomplishment. We, as nutritionists or veterinarians, can discuss the following questions in this blog:*

- a. How interactive are you as a poultry nutritionist or veterinarian?*
- b. Blaming someone else could be a first reaction to a problem. Has this been your experience when a problem occurs in your farm?*
- c. Nutritionists and veterinarians can efficiently benefit from each other's knowledge and practical experiences. Do you agree with this?*

There are a number of responses and without exception all are in full agreement.

A few years ago I asked a senior ostrich vet if he believed there should be cross over between veterinary and nutritionist as the two disciplines are so interrelated. He agreed and went onto

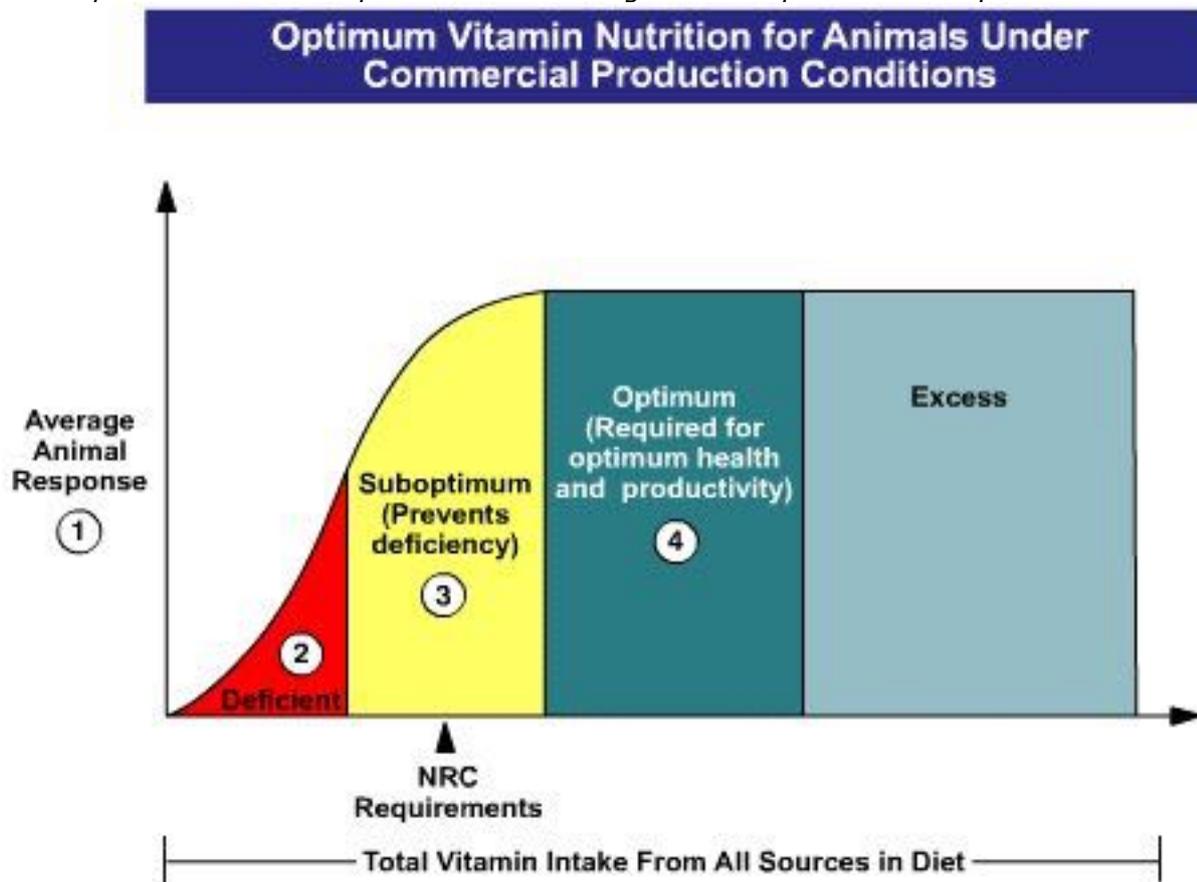
state that he had no knowledge of nutrition. We only have to look at the tables in the links below listing the clinical signs of deficiencies to understand just how these two disciplines interrelate to each other, no matter which specie – the principles are the same.

[Functions, Deficiencies, Interrelationships & Toxicities of Minerals and Vitamins](#)– Poultry including Ostrich  
[Nutritional Deficiencies and Excesses](#) - Pigs

### 3. Optimum Vitamin Nutrition™

Roche Vitamins, now owned by DSM, introduced the terminology Optimum Vitamin Nutrition™ (OVN). The company recognised that many of the [National Research Council \(NRC\) nutritional recommendations](#) are set dangerously low. The following is their explanation of OVN as it relates to production livestock. There are recommendations out for Ostrich, although not yet published by the NRC, and proving to also be set too low.

*"Optimum Vitamin Nutrition" refers to providing all known vitamins in the diet at levels that permit optimum health and performance. The figure below provides a simplified visualization.*



- 1. Average Animal Response.** Average response of productivity or health, such as growth rate, feed efficiency, reproductive performance or immunity, to a vitamin allowance.
- 2. Deficient: below NRC requirement.** Animal at risk for clinical deficiency signs and disorders.
- 3. At or above NRC requirement.** Clinical deficiency signs prevented, but levels are inadequate to permit optimum health and productivity.
- 4. Optimum allowances.** Offset influencing factors. Help achieve optimum health and productivity.

The y-axis, Average Animal Response, refers to any average productivity or health measure, such as growth rate, feed efficiency, immunity or reproductive performance, as it responds to vitamin allowances.

The x-axis, Vitamin Allowances, refers to the total level of vitamins in the diet, including feedstuffs and fortification:

- Deficient marginal allowances (2) are below the requirements published by the National Research Council, putting the animals at risk of developing clinical deficiency signs and disorders.
- Suboptimum marginal allowances (3) exceed the NRC requirements and thus prevent clinical signs, but they are inadequate to permit optimum health and productivity.
- Optimum allowances (4) permit optimum animal health and productivity.

Note that there is not a single optimum vitamin allowance. Various influencing factors will affect both the animal's requirements and the ability of the diet to meet them. These factors include:

- Stressors on the animal:
  - Disease
  - Confinement
  - Restricted feeding
  - Vitamin antagonists
  - Air quality
  - Temperature
- Variations of vitamin levels in feedstuffs:
  - Bioavailability
  - Stability
  - Quality of feedstuffs

For instance, vitamin allowances that are optimum in a stress-free environment may become suboptimum as the heat stress of summer increases. Thus, Optimum Vitamin Nutrition remains a dynamic aspect of animal agriculture that must be regularly evaluated. END

Note that the current published recommendations for ostrich fall into Category 2 above, as we still see many clinical deficiency signs, even with this company.

The following is a quote from the first couple of paragraphs of chapter in [The Poultry Site](#) Hand Book. The whole article can be read by [clicking this link](#).

#### **Optimum vitamin nutrition of laying hens**

The overall goal of the layer industry is to achieve the best performance, feed utilization and health of birds. All nutrients including proteins, fats, carbohydrates, vitamins, minerals and water are essential for these vital functions, but vitamins have an additional dimension. They are required in adequate levels to enable the animal to efficiently utilize all other nutrients in the feed. Therefore, optimum nutrition occurs only when the bird is offered the correct mix of macro- and micronutrients in the feed and is able to efficiently utilize those nutrients for its growth, health, reproduction and survival.

Vitamins are active substances, essential for life of man and animals. They belong to the micronutrients and are required for normal metabolism in animals. Vitamins are essential for optimum health as well as normal physiological functions such as growth, development, maintenance and reproduction. As most vitamins cannot be synthesized by poultry in sufficient amounts to meet physiological demands, they must be obtained from the diet. Vitamins are present in many feedstuffs in minute amounts and can be absorbed from the diet during the digestive process. If absent from the diet or improperly absorbed or utilized, vitamins are a cause of specific deficiency diseases or syndromes. End

As can be seen vitamins are essential to good health, but only of value when part of a correctly balanced diet, containing all the correct nutrients. I certainly agree with Mojtaba Yegani.

#### **4. Feather Pecking**

Feather Pecking and poor feather quality is a common problem currently experienced with ostrich. An article entitled [Feather Loss in Chickens](#) was published in [the Poultry Site Newsletter](#) this month. The article relates to chicken, but the basic principles discussed apply equally to ostrich and other feathered livestock.

#### **Feather Loss in Chickens**

By Dan Cunningham Extension Poultry Coordinator, The University of Georgia, Cooperative Extension Service. A common complaint received from owners of backyard flocks relates to feather loss with their birds.

Feathers on chickens serve very important roles in providing protection and insulation for the body. Too much feather loss makes it more likely that injuries will occur to the exposed flesh resulting in infections or bruising of the tissues. In addition, excessive feather loss can result in higher energy utilization requirements to maintain body temperature. As a result, birds with excessive feather loss often require more feed to produce the energy necessary to compensate for the heat lost from the exposed areas.

This condition can also adversely affect feed conversion and result in greater feed costs. Preventing excessive feather loss can, therefore, have an important impact on flock health and profitability. The primary reasons for excessive feather loss in small flocks are:

### **Inadequate Nutrition**

Good feather growth and maintenance requires adequate amounts of proteins, amino acids, vitamins and minerals. It is not unusual to trace a feathering problem in a backyard flock to inadequate feeding. A well balanced poultry feed formulated for appropriate age and type of bird will assure that the flock is receiving the necessary nutrients to maintain feather growth and maintenance. Diets formulated specifically for egg production or meat production and for the appropriate age of the bird offer the best feeding programs for your flocks. ....

Loss of feathers from birds can sometimes be associated with feather pecking and pulling by other members of the flock. This can also be the result of poor nutrition as inadequate intake of nutrients can trigger this type of behavior. If, however, the appropriate feed is being provided and feather loss is occurring, it may be a result of aggressive behavior by some members of the flock. Feather picking and pulling can be a learned behavior and is usually the result of one, or a few members of the flock, exhibiting this behavior. Birds are curious animals by nature and will pick at objects that attract their attention. Should their attention focus on the feathers of their flock mates and picking/pulling begin, it can become a habit that spreads to other members of the flock. Birds are also somewhat territorial and pecking/pulling of feathers can be a manifestation of this behavior. If feather loss is observed with only a few members of the flock rather than all the birds, it is likely the result of these types of behavior. Ways of determining if feather loss is a result of this type of activity is to observe the birds for a period of time and determine if certain birds in the flock are being overly aggressive with their flock mates or have developed feather pulling behavior. If so, the best remedy is to remove the bird(s) instigating the problem from the rest of the flock. A few weeks in isolation may reduce the expression of this behavior. If not, the remedy for this problem may require permanent removal from the flock. For flocks of birds where picking and pulling are chronic problems, beak trimming at an early age may be necessary. Beak trimming may be done at about six weeks of age by removing about 3/16 in. from the tip of the upper beak. This can be done using a toe nail clipper, but care must be taken not to injure the tongue of the bird.

### **Molting**

Molting is a natural process whereby laying birds will cease egg production and lose feathers from their neck, breast and back areas for a few weeks to a few months. Molting occurs most often in natural environments where the birds are exposed to natural day lengths. Decreasing length of day light in the fall will trigger the onset of molt. It is nature's way of providing laying birds a rest period prior to the stimulus for maximum reproductive performance in the spring. Molting is eliminated in commercial flocks by providing long day lengths using artificial lights for approximately 14 hours every day. Many backyard flocks are kept under natural day light fluctuations and thus molting can be a common cause of feather loss.

If the feather loss occurs in the fall or winter and only lasts for a few months before new feathers are observed, it is likely your birds have gone through a natural molt. Molting is not something to be concerned about unless you want your birds to continue laying in the fall and winter.

### **Disease and Stress**

Unhealthy birds or birds that are under stressful conditions may also exhibit feather loss. Using best management practices and observing your birds for possible disease conditions can be important for your flock. Stressful conditions such as heat, cold, disease, and lack of adequate amounts of feed and water can result in feather loss and poor feather quality with your birds. Good management is always important, and feather loss maybe an indicator needed improvements in management. It is important for your birds to have good quality feathering.

*Providing good management programs, adequate feed and water and minimizing stressful conditions in your flocks will help assure strong feathers and a healthy flock. END*

#### **5. Avian Influenza – Saudi Arabia Ostrich Negative**

The results of the tests carried out on all establishments affected by the outbreak of H5N1 in Saudi Arabia in November and available at: [http://www.oie.int/wahid-prod/reports/en\\_fup\\_0000006721\\_20080218\\_191838.pdf](http://www.oie.int/wahid-prod/reports/en_fup_0000006721_20080218_191838.pdf). It can be seen that there were no positive cases reported on the ostrich farm, although all the birds on the farm were culled.