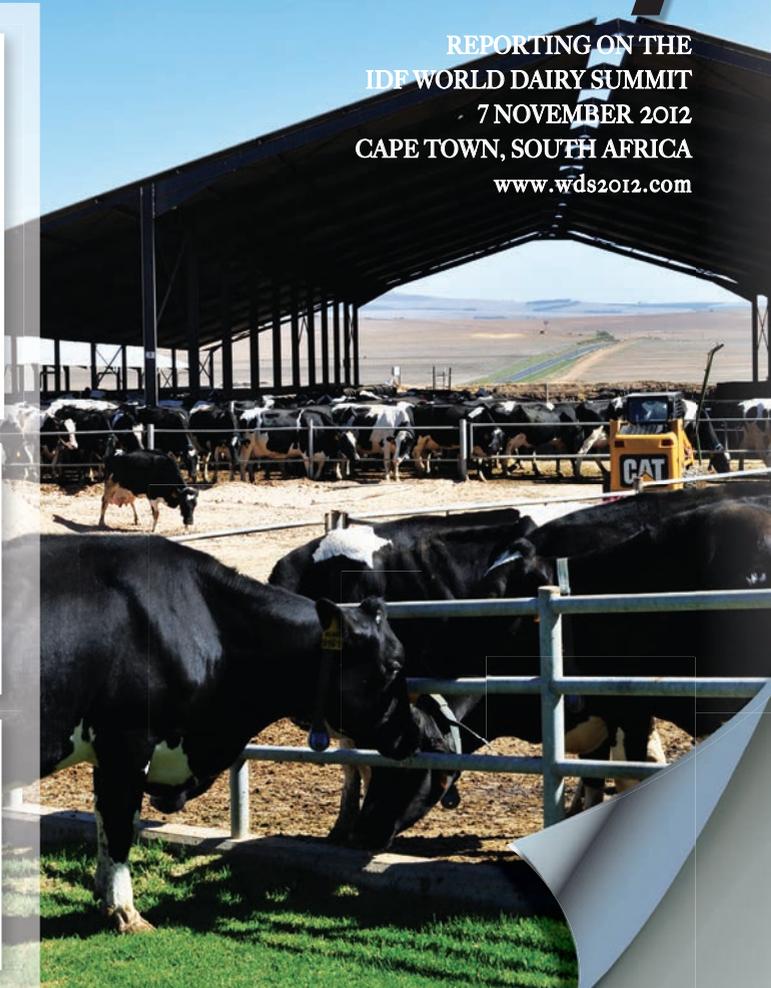
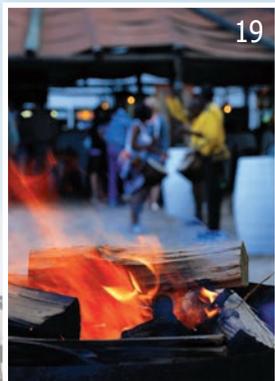


Summit Daily

REPORTING ON THE
IDF WORLD DAIRY SUMMIT
7 NOVEMBER 2012
CAPE TOWN, SOUTH AFRICA
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HIGHLIGHT

Conference on Methods of Analysis:

"Testing should be kept as simple as possible and as sophisticated as necessary"
– Dr Harrie van den Bijaart, QLIP, Netherlands

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Dairy Farm

Dairy farmers globally are under extreme pressure from lower producer prices and high grain prices. In his introductory speech at the Dairy Farming Conference Dr Torsten Hemme from the International Farm Comparison Network told delegates that the price of feed is now higher than the price of milk around the world. Feed prices increased by more than 30% since April this year. This will put pressure on milk production in coming months. South America is experiencing similar conditions, according to Dr Kenna Siqueira, Brazilian dairy economist.

In his overview of the South African dairy industry Dr Koos Coetzee, MPO economist, said South African milk producers operate above average dairies and can compete with milk producers in most other recognised dairy producing countries. Local and export markets are growing, which are providing more opportunities for farmers.

Dairy farm margins are under pressure from rapidly increasing input costs and stagnant or slow-rising producer prices.

Three experts shared their views about modern advances in dairy farming technology that can enable farmers to remain profitable.

Keith Heikes talked about new advances in genetics, while Jay Johnson explained how farmers could use new feed technology to improve profitability. In turn, Lior Yaron emphasised the importance of accurate measurement of performance to increase profitability.



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The majority of dairy farms globally are family farms. This means the relationship between family members and planned succession is crucial to these farmers. Prof Elmarie Venter from the Nelson Mandela Metropolitan University, a well-known expert on the subject stressed the importance of family businesses and proper succession planning. Philip Blanckenberg, third-generation South African dairy farmer shared his personal experiences with delegates. The accommodation of new entrants in the dairy sector is a priority in many countries. Jeff Every explained the model used to develop dairies for new entrants through share equity schemes.

The farmer experiences a decreasing share of the consumer dollar. Prof André



DR KOOS COETZEE



DR TORSTEN HEMME



DR KENNYA SIQUEIRA AND DR TORSTEN HEMME – PANEL SESSION I

Jooste provided feedback on his research on the South African dairy value chain. Tom Turner, MPO vice-chair explained how a group of dairy farmers in KwaZulu-Natal developed a farmer-controlled business as a way of improving farm profitability.

Conference convenor Dr Koos Coetzee was pleased with the attendance and said there was good audience participation in the discussions. He concluded that every dairy farmer and dairy scientist, who attended, received valuable advice to apply in their own situation.



PANEL SESSION 2



PANEL SESSION 3



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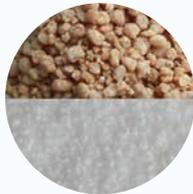
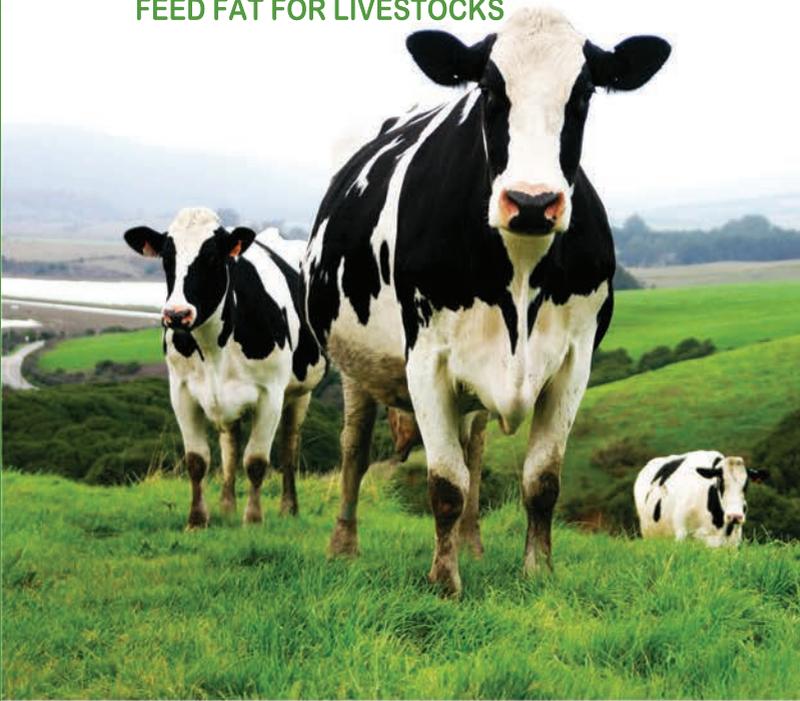
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Food Safety – STEC Monograph

Managing Emerging Food Safety Issues

“Milk and dairy products are highly nutritious products that are universally consumed. It is important therefore to be aware of any emerging food safety risk that might threaten the health of the consumer and to react pro-actively to lessen or eliminate such risks. The focus of the Food Safety conference at WDS 2012 on highlighting and discussing such microbial and chemical risks is part of the pro-active role that the International Dairy Federation plays in protecting the image of milk and dairy products and ensuring consumer health”.

The IDF monograph on STEC (Shiga-toxin-producing *Escherichia coli*) was launched by guest speaker Dr Choreh Farrokh of CNIEL, France, during Session 2 of the Food Safety Conference.

The International Dairy Federation (IDF) has been aware of the risk posed to human health by the occurrence and possible growth of pathogenic strains of STEC in milk and dairy products for quite some time. Twelve years ago, IDF established a task force comprising scientists involved in research on pathogenic *E. coli* to review and assess the significance of STEC in dairy production with respect to consumer health.

The monograph was published as a review article in the International Journal of Food Microbiology and is titled Review of Shiga-toxin-producing *Escherichia coli* (STEC) and their significance in dairy production. The purpose of this monograph is to assess the current situation with respect to the major serotypes of pathogenic STEC in dairy products.*

Because cheese making is a major part of the dairy industry worldwide and many cheese varieties throughout the world are made from unpasteurised milk, this monograph focuses on cheese as a possible source of pathogenic STEC serogroups. The monograph first describes the

bacteriological characteristics of STEC, its sources and its mode of transmission. This is followed by a description of the analytical methods to detect and identify the human pathogenic STEC strains/serotypes in milk and dairy products. Among the pathogenic *E. coli* of greatest relevance to milk is *E. coli* O157:H7, an STEC serotype, which,



MANSEL GRIFFITHS, UNIVERSITY OF GUELPH, CANADA

* The STEC monograph is available freely on the IDF Website at www.fil-idf.org

because of its high virulence is of major concern to the dairy industry. Other serogroups are, however, also an important health concern.

The monograph then discusses the main food-borne disease outbreaks associated with dairy products, the occurrence of STEC in unpasteurised milk and cheeses and its survival during cheese making. Fortunately, the number of cases of severe disease caused by STEC in dairy products has remained quite low, probably because of the compliance with good hygienic practices at the farm level.

The monograph therefore ends by describing the measures for preventing contamination of milk and milk products by interventions at farm level; interventions in the milk processing plant and during distribution; a combination of preventive practices; and the validation, monitoring and verification of control measures.



PROF PIET JOOSTE, CONVENOR



CHOREH FARROKH, CNIEL, FRANCE



MAGGY MOMBA, TUT, SOUTH AFRICA

Methods of Analysis

Dr Jan Floor, South Africa and Dr Jaap Evers, New Zealand, co-chairs of Conference 5 – Methods of Analysis, are excited about the future of analytical testing: “To bring out the benefits to stakeholders in the dairy chain, we chose to focus the conference on the theme of Adding value through cost-effective testing.”

Raw milk testing is critical for farmers, manufacturers and regulators alike. Dr Christian Baumgartner believes the field of raw milk testing typically reflects the problems of emerging systems where structures still have to be developed to serve the technical and economic progress of a sector.

Data handling issues and suitable statistical procedures are crucial when designing a raw milk testing system. The question is not what the best system is in general but how to define the steps to reach an optimal system for the country in question in the future.

Dr Harrie van den Bijgaart, the Netherlands, stated that safeguarding the integrity of milk relies on well-known integrated chain management principles for food safety, such as effective communication, appropriate food safety skills through education and training, working with reliable suppliers, a common understanding of the principle of shared responsibilities and a supportive role of competent authorities.

The choice of the best analytical approach at different levels in the dairy value chain is a trade-off between capacity, speed, accuracy, sensitivity, reliability and cost.

According to Jacquelin Page, USA continual improvement of practical test methods and tools is

critical in addressing the accelerating challenges facing the global dairy industry today.

Evolving economic and market demands require innovative new tools that address critical control points throughout the dairy supply chain to be reviewed and new approaches formulated to meet the criteria of the new demographics.

Page reviewed several innovative, practical test methods, including small, automated devices that provide affordable results at every level of the dairy value chain – from cow to customer. The best analytical poster prize went to Ellen K Ulleberg from the Department of Chemistry,



PANEL SESSIONS 1 & 2



DR JAN FLOOR AND PROF MARCOS VEIGA DOS SANTOS

Biotechnology and Food Science, University of Life Sciences, Norway, for her poster on “Whey protein digestion – Effect of pH and gastrointestinal enzymes in comparison with commercial enzymes”. Prof Gerd Vegarud, under whose guidance the research work was carried out, received the prize on her behalf.



JACQUELIN M PAGE & DR CHRISTIAN BAUMGARTNER

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Protein Quality Symposium – Joint Interview

Advances in Analytical Methods for Dairy Proteins: Significance for Nutrition and Health

We spoke with Véronique Lagrange, USA Dairy Export Council, and Hettie Schönfeldt, professor, University of Pretoria, South Africa.

Q: What are the highlights of this symposium?

A: The symposium will present new method for measuring the quality of dietary proteins, which the Food and Agriculture Organisation (FAO) has proposed. It is called digestible indispensable amino acid score (DIAAS). We will also discuss how this new protein quality assessment will affect the dairy industry, food assistance programmes and current standards in therapeutic nutrition practice, particularly when working with vulnerable populations. Experts will discuss the latest research in developing countries involving dairy proteins in childhood malnutrition, stunting, pregnancy, for lactating women and people living with HIV. The method provides a more accurate description of dietary protein quality and the role of individual amino acids in a food-based matrix.

Q: Can you explain the new scientific analytical methods and how they improve the measurement of food-protein quality?

A: The FAO will recommend that the DIAAS replace the current PDCAAS method. This new method essentially removes the necessity of truncation when calculating the amino acid score. To assess the contribution of an amino acid to overall protein intake, we use ileal digestibility of individual amino acids in calculations instead of crude protein digestibility from faecal measurements. The new method will require a database of amino acid content in dietary proteins, including the description of the methods of analysis.



VÉRONIQUE LAGRANGE



HETTIE SCHÖNFELDT

Q: What are the key findings unveiled at the symposium? Will they lead to significant developments within the food sector and in the dairy sector particularly?

A: The key finding is the change in the assessment of protein quality and its implications to the dairy industry. Findings from the new DIAAS

method give dairy an approximate 20 to 30% advantage over non-dairy proteins. These findings are significant to the entire food/nutrition industry, particularly in the nutrition therapy of vulnerable groups living in food insecure environments such as malnourished children, those living with HIV and pregnant or lactating women. In regions where food resources are scarce, protein quality becomes extremely important. Protein quality is also an important topic in other sectors of nutrition such as the rising number of elderly adults worldwide. This population is growing at an alarming rate and with better measures of description of protein quality, nutritionists, health providers and food formulators will be better equipped to prevent sarcopaenia and increase the quality of life of affected individuals. For application in the production and administration of protein supplements, the measurement of protein quality needs to be as accurate as possible.

Q: High-quality proteins are crucial for certain vulnerable groups. How can dairy proteins alleviate hunger and increase food security?

A: By assessing protein quality more accurately, we can choose protein sources with the highest absorbable amino acid content. We can incorporate dairy proteins into supplementary and therapeutic foods to increase their bioavailability. The high bioavailability of dairy proteins enables the use of a lower quantity of protein to meet amino acid demands. Using a smaller amount of protein in supplementary products will allow us to feed more individuals with the same resources. Studies have shown that dairy proteins prevent stunting, which results from severe malnutrition and affects 170 million children. Once

stunting has occurred, it cannot be reversed. Severe malnutrition inhibits physical growth and cognitive development, preventing children from becoming productive adults. Studies have shown positive results supplementing children with foods containing dairy during the first 1 000 days of life.

Q: What are the good messages that the event conveyed for dairy?

A: Essentially, dairy can deliver more amino acids to meet nutritional needs compared to the same quantity of protein from a non-dairy source. The protein quality of dairy within a food matrix makes it suitable during active growth as experienced by infants and young children, during puberty. In addition, it is also suitable for maintaining body weight during adulthood and as a source of protein during periods of higher protein demand, such as during pregnancy, lactation, suffering or recovering from disease and normal ageing.



PANEL SESSION 1 & 2

Protein Quality Symposium – FAO Interview

The IDF had the privilege to interview Dr Paul Moughan, distinguished professor and co-director, Riddet Institute, New Zealand. He delivered a presentation on Dietary Protein Quality: New Perspectives at the Protein Quality Symposium.

Q: What is protein quality and why does it matter? Why are dairy products a good source of quality protein?

A: Protein quality is important when choosing protein sources. Not all proteins have the same level of amino acid absorption in the digestive tract, nor do they have the same closeness of the amino acid pattern required by humans. Some food products may claim high protein content but since the small intestine does not use or absorb all protein, it can be a waste of extra protein. Protein quality deals with the bioavailability of the amino acids in that protein molecule – high bioavailability of amino acids means high quality. Bioavailability of proteins refers to how much of the ingested protein is actually absorbed. The quality of a protein when choosing the appropriate protein source to meet dietary needs be-

comes particularly important when feeding vulnerable populations.

Q: What are the main conclusions of the FAO report highlighted at the symposium?

A: The new protein quality assessment termed digestible indispensable amino acid score (DIAAS) will replace the current PDCAAS method. The DIAA assesses a protein's quality more accurately and allows us to prevent the wasteful use of lower-quality protein sources.

Q: What is the new method for assessing protein quality this report recommends and how will it affect the dairy sector?

A: The new DIAAS method removes the need for calculating protein truncation for ingredients and measuring



DR PAUL MOUGHAN

the digestibility of amino acids, as opposed to crude protein digestibility. DIAAS demonstrates the high bioavailability of key amino acids in dairy proteins compared to non-dairy proteins. Results support the use of dairy proteins wherever high-quality protein is needed.

Q: Protein quality is an important issue for specific groups, such as the elderly, the very young and the malnourished. How can dairy protein be part of the malnutrition solution?

A: The high bioavailability of amino acids in dairy pro-

teins makes them an excellent option for treating malnutrition and supporting growth (stunting) in young children. High-quality protein, such as those found in dairy, enables the use of a lower quantity of protein to meet dietary amino acid requirements. This is a great way to

make the best use of current resources to prevent malnutrition permanently.

Q: Do you have a specific message to address to our readers?

A: The FAO in Rome will publish the newly proposed DIAAS method shortly. It

represents a transformation in how dietary protein quality is determined and described. For the first time in many years, the superior quality of dairy proteins will be apparent. The industry needs to support the implementation of the new approach.

Conference on Dairy Policies & Economics Gallery



*Dr Kipkirui Arap L,
New K.C.C., Kenya*



*Melt Loubser, Fair Cape,
South Africa*



*Jaime Castaneda,
National Milk Producers
Federation, USA and
Joop Kleibeuker, European
Dairy Association, Belgium*



Milk South Africa – Feature

MILK SOUTH AFRICA AND A PROFILE OF THE SOUTH AFRICAN DAIRY INDUSTRY

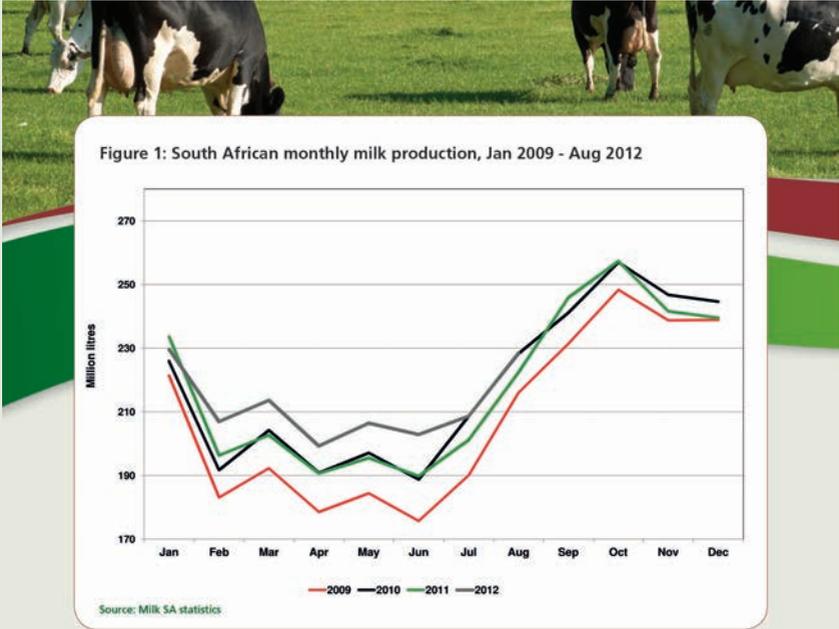


The primary and secondary industry sectors of the South African dairy industry are, in respect of issues of collective interest, united in **Milk South Africa**. Therefore the Milk Producers' Organisation (MPO) and the SA Milk Processors' Organisation (SAMPRO) are the members of **Milk South Africa**. The MPO is the representative body of the producers of unprocessed milk and SAMPRO is the representative body of the milk processors and manufacturers of dairy products in South Africa.

For the past ten years already (since 2002), **Milk South Africa** has been adding value to the South African dairy industry through the promotion of the image and consumption of South African dairy products and the development of the South African dairy industry through value-added services such as:

- Educating the consumer about the nutrition and health benefits of dairy.
- Improving the quality and safety of dairy products.
- Publishing reliable statistical and other information.
- Co-ordinating, initiating and funding research and development projects.
- Transfer of knowledge and skills to previously disadvantaged persons.





Milk SA is entrusted by the government to administrate regulations in support of the above-mentioned activities in pursuit of the strategic direction to broaden the market for milk and other dairy products, improve the international competitiveness of the dairy industry and empower previously disadvantaged individuals.

The South African dairy industry experiences a steady and firm growth in production and consumption.

In total 2,6-billion litres of milk were supplied to the market in 2011. The national herd is estimated at 1,3-million dairy cows of which approximately 50% are cows in production. There are four

major dairy breeds in South Africa, namely Holstein, Jersey, Ayrshire and Guernsey.

The number of milk producers has decreased from 3 899 in January 2007 to 2 474 in January 2012.

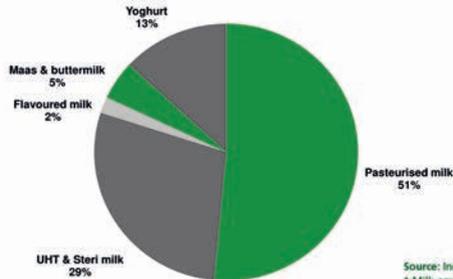
The production of raw milk in South Africa is very seasonal and the highest production per day is more than 30% higher than the lowest production. The actual differences in the last four years are as follows: 2008: 33%, 2009: 41%, 2010: 37%, and 2011: 36%.

Most of South Africa's milk supply comes from the coastal provinces where a pasture-based feeding regime



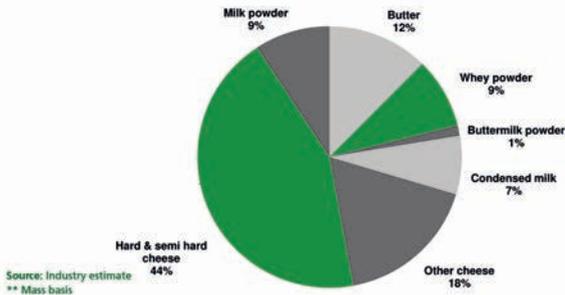


Figure 2: Composition of the South African liquid products* market, 2011



Source: Industry estimate
* Milk equivalent basis

Figure 3: Composition of the South African concentrated products** market, 2011



Source: Industry estimate
** Mass basis

generally applies, as opposed to the generally dryer inland provinces with mixed-ration feeding regimes. The South African monthly milk production from January 2009 to August 2012 is shown in figure 1.

The dairy-processing industry consists of 173 milk processors and manufacturers of dairy products, and

131 producer distributors (October 2012).

Producer distributors are milk producers who process the raw milk produced by them and sell the final products to the consumer or the retail. Competition amongst milk processors and manufacturers of dairy products is fierce, owing to the many players in the market.

A total of 40% of the locally produced milk is used to manufacture concentrated products and 60% to manufacture liquid products. Pasteurised milk and UHT milk are the major liquid products, while hard, semi-hard and other cheeses are the major concentrated products.

The estimated composition of the markets for liquid and concentrated products is clear from figure 2 and 3.

The exposure of the South African dairy industry to international competition (as measured by the sum of the imports and exports of dairy products of South Africa) was higher in 2011 than in any of the previous nine years. The index, with 2002=100, was 135 in 2011, 117 in 2010, 126 in 2009, 130 in 2008

and 107 in 2007. In the years 2002 to 2006 the index figures were between 71 and 100.

Dairy imports to and exports from South Africa are more or less in balance. In 2011, the South African dairy products that were exported constituted 3,8% of the local milk production, while products to the equivalent of 5,6% of the local milk production were imported.

The South African dairy industry is one of the most deregulated industries internationally. The industry is not subject to any statutory intervention in the marketing of its products and it is not supported by government subsidies. A totally free and competitive dairy market prevails in South Africa.



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Farmers' Dinner Gallery at Spier



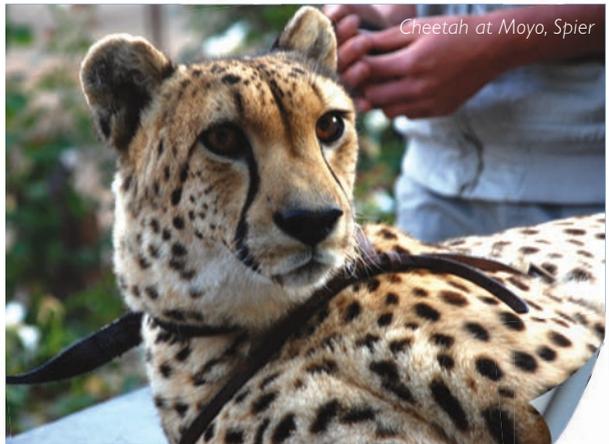
Dr Pieter Mulder, Deputy Minister of Department of Agriculture, Forestry and Fisheries with Charlene and Melt Loubser



African Rhythm



Suzane Leser from UK with one of Moyo's owls



Cheetah at Moyo, Spier



Judith Capper and Joerg Seifert with drummers



Denny Dustin, Liane Garrick and Debby Felgate from Australia with traditionally painted faces



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