RURAL INDUSTRIES RESEARCH
& DEVELOPMENT CORPORATION

Report on the

Second World Deer Farming Congress

Limerick, Ireland 24-28 June, 1998

A report for the Rural Industries Research and Development Corporation

by Chris Tuckwell, Henry Shapiro & John Thonard

September 1998

RIRDC Publication No 98/100

ISBN 0 642 57807 9
ISSN 1440-6845

"Report on the Second World Deer Farming Congress"
Publication no 98/100

Researcher Contact Details
Mr Chris Tuckwell
Deer Industry Development Manager
PO Box 1105
Gawler SA 5118

Phone: 08 8523 3500
Fax: 08 8522 6126
Email: tuckwell@dove.net.au

Other Contributors:

Henry Shapiro
President
Deer Industry Association of Australia

John Thonard
Chairman
RIRDC Deer Industry Research and Development Advisory Committee

RIRDC Contact Details
Rural Industries Research and Development Corporation
Level 1, AMA House
42 Macquarie Street
BARTON ACT 2600
PO Box 4776
KINGSTON ACT 2604

Phone**:** 02 6272 4539
Fax**:** 02 6272 5877
Email: rirdc@netinfo.com.au
Website: http://www.rirdc.gov.au

Published in September 1998
Printed on environmentally friendly paper by the DPIE Copy Centre

Foreword

The Second World Deer Farming Congress was held in Ireland between 24 and 28 June 1998.

The Corporation supported three representatives from Australia to the Congress and their report is enclosed. It provides a summary of all conference papers.

A major outcome of the Irish Conference was an agreement to establish an International Deer Secretariat and an International Web site for the free exchange of technical information on deer.

After this Congress, the opportunity was taken by one member of the Australian delegation to attend the 4th World Deer Biology Congress in Hungary from 30 June to 4 July 1998. A number of technical papers were presented and their summaries are available on request from the Corporation. A copy of the contents page of that report is attached at the back of this publication.

This report forms part of RIRDC's Deer R&D program, which aims to foster an Australian industry as a highly profitable and efficient mainstream agricultural enterprise.

Peter Core
Managing Director
Rural Industries Research and Development Corporation

Contents

1.0 ACKNOWLEDGMENTS

The authors gratefully acknowledge the support of the Rural Industries Research and Development Corporation for their sponsorship of attendance at the Congress.

This report demonstrates the range of issues considered at the Congress and Information will continue to be disseminated to industry in various forms and forums.

2.0 EXECUTIVE SUMMARY

Although the global farmed deer industry continues to expand, it will continue to be dominated by New Zealand.

Opportunities exist to cooperatively develop the European market for venison and to look to development of North American markets.

Other topics of interest related to velvetting and concern by some Europeans of the continuing practice in New Zealand, Australia and North America.

Welfare considerations of velvetting were discussed and information on NZ and Australian requirements for written and practical examination requirements for velvet harvesting were presented. The information stressed veterinary supervision requirements of accreditation, animal welfare requirements, control of drugs and traceability of each piece of antler harvested.

The industry was encouraged to develop using results of published scientific research to support their programs rather than insupportable emotional arguments.

There was brief discussion about Johnes disease in deer and of the growing world wide interest in Johnes disease in all species. All countries were encouraged to investigate and initiate control measures immediately.

'Organic' deer farming and marketing opportunities for its products were discussed. An interesting observation was that wild shot venison cannot be classed as 'organic' because the grazing area of the animals is unknown.

The NZ deer farmers association agreed to initiate an internet web site that can be used as a reference point for the global deer industry. Access to the site will be available on the basis of pro-rata cost depending on the number of deer in each country.

Colin Ward from Australia proposed that the forum make a decision to create a new international group to include all deer farming countries. The group could work through the web site proposed by NZ to minimise costs and that all members of world's deer industry pledge input to the group. The aim of the group would be to create a code of conduct and ethics that all members organisations support.

Colin Ward suggested that a sub-committee be appointed and chaired by Sir Peter Elworthy from NZ. The committee would report back to the world deer industries within a specific time frame with a suggested code of business ethics that meets requirements of all countries.

The forum formed a sub-committee to meet after the conference. At that meeting it was agreed that:

1. A public internet site will be established to allow free exchange of technical information about deer farming. If the site is used as a forum for criticism of practices in other countries it is likely it will be closed.
2. An International Deer Farming Secretariat (IDFS) will be established to negotiate on issues of potential conflict between countries.
3. The IDFS will comprise representatives of the four main deer farming regions: Australia, Europe, New Zealand and North America. It will be chaired by Sir Peter Elworthy.
4. A second internet site will also be established as a restricted access forum that will provide the IDFS a means of direct communication to discuss global industry issues.
5. The NZ deer farmers association agreed to set up the sites with costs shared by each country.

Some papers of the congress that, in the opinion of the authors, were more important than others and have been reported in more detail.

Those requiring more detailed information about the congress can obtain a copy of the conference proceedings from the Deer Industry Book Shop.

3.0 WELCOME AND OPENING

3.1 Congress Chairman

Mr Bertie Wall, Chairman of the Organising Committee of the Second World Deer Farming Congress, President of FEDFA and the Irish Deer Farmers Association and Secretary of the Irish Venison Industry Board, welcomed all delegates to the Congress.

He welcomed the representative for Mr Joe Walsh, the Irish Minister of Agriculture. The Irish Department of Agriculture strongly supported the Congress.

He encouraged the development of cooperative alliances and development of strong united marketing opportunities.

3.2 EU Commissioner for Agriculture and Rural Development

The EU Commissioner for Agriculture and Rural Development (Mr Franz Fischler) spoke to the conference via a video.

He encouraged the development of deer farming and cooperation of deer farmers through the world and to learn from each other.

The Commission has seen a remarkable growth in interest in deer in the EU. Partly due to the recognition, in affluent societies, that venison is a healthy product.

The EU recognises the efforts made by venison producers to market their product efficiently and effectively.

He estimated that there are over 9,600 deer farmers in the EU producing over 6,000 tonnes of meat. The EU imports of all game in 1997 was 24,500 tonnes, 43% of which was sourced from NZ.

With careful marketing the EU is confident the market for game products can grow allowing an expansion of the number of deer farms without affecting markets. In other countries as the standard of living improves there will be new opportunities for venison.

3.3 Irish Minister for Food and Agriculture

The congress was opened by a representative of the Irish Minister for Food and Agriculture. The Minister was unable to attend the congress because of EC commitments in Brussels.

In summary the opening paper described Ireland as being well suited to deer farming that is based on pasture production. The paper informed delegates that venison is now included as a quality product in the Irish Food Board's promotional brief.

A recently established Venison Industry Board in Ireland has a brief to promote venison production and marketing in border regions and to support an application to the EU for project funding.

4.0 THE FIRST NEW DOMESTICANT FOR 5,000 YEARS?

Dr Fletcher from the UK described relative difficulties of farming deer compared to farming of other pastured livestock in Europe.

Principally, sheep and cattle producers receive subsidies that are greater than the value of their production while deer farming is unsubsidised in Europe. This lack of deer farming subsidisation means that it is difficult to encourage traditional livestock farmers to abandon their heavily subsidised enterprises to enter deer farming.

The paper provided evidence of man's historical association with venison. Archaeological information shows that man has been eating venison for many more centuries than beef or lamb and that venison was the basis of meat diets in Europe for at least 5,000 years and in some areas up to 50,000 years.

Information also presented suggests that venison used in diets was sourced from managed deer populations and not only hunting of feral populations.

The paper discussed the health attributes of venison and related it to human physiology that indicates that man is better adapted to cope with the lean meat of venison rather than fattier meet of other species. The need for fat, the ease of domestication, the need for draft animals and animal fibre led to rapid domestication of sheep and cattle in preference to deer about 8,000 years ago. Human needs have changed, we do not need high fat diets, candles or draft animals, and consumer demand is increasingly for lean meat.

However, during the period of domestication of sheep and cattle deer relied on natural selection and so their populations have been little influenced by man – they have not been domesticated. This means the 'new' deer farming industry needs to increasingly domesticate deer (selectively breed and manage for temperament, leanness, growth, reproductive performance, disease resistance, etc) to meet production requirements.

The paper suggested that as deer have not been selectively bred by humans for at least 5,000 years, they are the first new domesticant for 5,000 years despite archaeological evidence which shows previous use of venison by humans for extended periods.

Based on: (i) our increasing need for lean meat; (ii) the lack of human intervention in genetic selection of deer that has kept its meat lean; and (iii) the physiology of human digestion that predisposes it to lean meat digestion, the deer industry can easily demonstrate that the quality and low fat content of venison available today is better suited to our physiological and 1990's life style requirements.

5.0 OVERVIEW OF WORLD DEER FARMING

5.1 Europe (Dr Günter Reinken)

Generally there is an increasing need for quality guarantees of all product (including deer products), particularly since outbreaks of BSE and swine fever. Guarantees of quality include the origin and quality of each product with production controlled by recognised standards such as ISO 9000.

Deer farming began in Europe in the 1970's (Red deer in Scotland in 1971 and Fallow deer in Germany in 1973). Deer farming has developed differentially in European countries and development is affected by many social, political and geographical factors.

A summary of deer farming statistics for Europe in 1997 is contained in Table 1 below.

Table 1 (adapted from Reinken **[1]**)

COUNTRY	NUMBER OF				DEER MEAT TONNE
	FARMS	DOES	HINDS	ANIMALS	
Austria	1,678	15,800	4,020	39,600	522
Benelux	70	200	1,450	3,300	68
Denmark	646	12,900	2,700	31,200	361
France	907	12,000	17,000	58,000	1,026
Germany	4,474	49,240	2,590	103,660	1,463
Great Britain	255	3,600	14,400	36,000	709
Ireland (inc N.I.)	6,014	13,800	16,700	61,000	1,175
Italy	406	10,000	2,000	24,000	329
Portugal	62	300	350	1,300	22
Spain	10		2,000	4,000	96
Sweden	572	8,700	4,200	25,800	437
EU	**9,681**	**126,540**	**67,390**	**387,860**	**6,238**
Norway	18	100	300	800	17
Switzerland	479	3,500	300	7,600	98
Czech Republic	70	3,200	1,700	9,800	151
Hungary	5	50	500	1,100	23
Poland	10	900	200	2,200	31
Slovakia	7	800	200	2,000	28
Europe	**10,270**	**135,090**	**70,590**	**411,360**	**6,586**

Deer farmer associations exists in 10 European countries and regional associations also exist in Germany and Austria. The Federation of European Deer Farmers (FEDFA) was founded in 1990 to maintain contact with the EU commission on behalf of mother countries.

Other than in Great Britain and Ireland, deer farming in European countries requires a licence. Velvetting is not allowed in all European countries.

Difficulties for development and expansion relate to lack of government interest in deer farming and opposition from environmentalists and hunters.

In the future FEDFA will develop a European Quality Mark and looks to differentiating farmed product from game product.

5.2 USA (Dr Raleigh Buckmaster)

The greatest difficulties facing deer farming in the USA relate to State and Federal regulation. The presence of free ranging deer most influences regulations. Some species are classified as livestock and some as game and classification varies between states.

There are an estimated 250,000 farmed deer in the USA. The population comprises 34% Fallow, 24% Red, 13% Axis, 15% White tail, 4% Elk, 3% Sika and 2% other. The Fallow and Fallow hybrid section of the industry is the largest and most mature in terms of venison production.

Chronic Wasting Disease in farmed Elk is considered a serious problem.

Marketing problems exist for producers because Venison is not included in the USDA Red Meat Act.

5.3 Canada (Dr Jerry Haigh)

There are marked differences between Canadian provinces in the administration and support/encouragement of deer farming.

The Canadian Venison Council (CVC) was formed in 1992 as a National industry body with a focus on political lobbying and to undertake research and development activities.

Following the forced destruction of thousands of deer during programs to eliminate the Canadian deer herd of TB and E Cervi several industry controls were initiated. They include that all farmed deer must be permanently identified, transport permits are required and every deer farm must test all deer for TB at least once every three years.

The CVC developed a Code of Practice for the Care and Handling of Farmed Cervids over 4 years. A national velvet harvesting training and certification program is currently in development.

Populations of deer in Canada at the end of 1997 are shown in table 2.

Table 2 (adapted from Haigh **[1]**)

CANADIAN VENISON COUNCIL

Province	**Elk**	**Red Deer**	**White-tail deer**	**Fallow deer**	**Reindeer**	**Other**	**Total**	
							Animals	**Farms**
Yukon and NWT	99				9,500		9,599	7
British Columbia				15,000	250		15,250	74
Alberta	15,700		3,600		50	350	19,700	325
Saskatchewan	13,500		900	5,000	25	300	19,725	342
Manitoba	768		60	600		30	1,458	49
Ontario	3,7001	6,500	750	4,000		900	15,850	275
Maritimes	112	907	100	250			1,369	20
Canada - Totals	34,979	12,907	10,510	28,350	9,825	2,080	98,651	1,667

Traditional markets for venison are principally serviced by Red and Fallow deer producers while Wapiti producers concentrate on velvet antler markets.

The future for the Canadian industry appears bright as improved management and production techniques have reduced the opposition to deer farming.

5.4 Australia

The DIAA president (Mr Henry Shapiro) reported that the Australian industry comprises about 200,000 animals on about 1,200 farms.

Australia produces about 1,000 tonnes of venison annually and about 20 to 25 tonnes of velvet.

Australia is a free of BSE, TB and Brucellosis free and there is no evidence of Johnes disease in Australian deer. The country is also unaffected by many pollutants that plague other countries including the fall out from Chernobyl.

Mr Shapiro indicated that deer farmers in Australia were suffering a substantial downturn in both the velvet and venison prices. This was due to the collapse of some Asian economies and a level of price-cutting by importers into the European market not seen in recent years.

As well as doing considerable harm to the Australian industry such price-cutting devalues the industry world wide, and requires international attention and cooperation to bring under control.

Australian producers are keen to develop partnerships with international producers to help stabilise the industry with high quality products.

5.5 New Zealand

A snapshot of the New Zealand industry suggests 1.6 million deer are currently held on farms. Slaughter numbers exceeded 350,000 in 1993 and 1995 but were below that in 1994, 1996 and 1997. Venison prices tend to fluctuate around supply of stock which is in turn affected by velvet antler prices.

Approximately 2,100 head of deer are required for an economic deer unit in New Zealand today compared with a 143 head unit in 1985.

There is a grazing focus on product quality although production improvement programs continue. The New Zealand Deer QA program covers all aspects of production from 'pasture to plate'. More than 90% of transport companies who carry deer are accredited by the program and 2,300 farmers have voluntarily registered for the program.

Increasingly deer farmers are specialising in breeding, velvetting or venison production rather than attempting all aspects of production in the same enterprise.

The NZDFA is supporting strategies to stabilise the industry and reduce the volatility of the market.

5.6 Asia (Dr Ken Drew)

Countries that farm deer in Asia vary markedly in their environment and so the species of deer farmed also vary. Table 3 shows some Asian deer population estimates.

Table 3 (Drew **[1]**)

Estimates of Asian deer populations

Country	Deer Species	Number estimates
China	Red, Wapiti, Sika	> 500,000
Far East C.I.S.	Sika, Wapiti	400,000?
Korea	Sika, Wapiti, Red	100,000 - 200,000
Taiwan	Sika, Sambar, Red	36,000
Vietnam	Sika	15,000
Malaysia	Red, Fallow, Rusa	15,000
Thailand	Sambar, Rusa	5,000
Indonesia	Sambar, Rusa	small number

5.6.1 China

In China farming systems are almost entirely focussed on the production of velvet antler. Sika deer stags are reported to produce 2.5kg velvet and Wapiti type stags 7.0kg per head per year.

Most animals are housed throughout their lives and fed concentrate rations.

AI breeding programs are used to improve the quality of stock and their genetic potential.

5.6.2 Russia (Combined Independent States)

Sika deer are concentrated in the eastern states in open grazing systems with heavy supplementary feeding during winter.

In areas close to the Chinese and Mongolian borders, Maral deer are farmed on a large scale. Stags spend 7 to 8 months in feed lots while females are run extensively.

Maral stags have exceptional velvet antler productivity, more than 9kg per head annually in one herd.

5.6.3 Other

Korea is the other main Asian deer farming country with between 100,000 and 200,000 farmed Sika, Red and Wapiti deer. The industry is based on velvet production and is growing rapidly. Like China, nutrition is reliant on concentrate feeding.

Other South East Asian countries have small populations of farmed deer that are principally Rusa and Sambar deer. Less research has been undertaken on tropical deer than temperate species.

6.0 THE MARKET

6.1 Western Europe (Karl Wilhelm Beckman)

Discussion of the market potential for venison in Western Europe summarised that:

- There is under production of farmed deer in Western European Countries, (only 1/3 of total European consumption is produced within Europe);
- Deer farming produces products that meet client specification and meet requirements of developing farming trends in Western Europe;
- The market for deer meat is under developed and so little effort is likely to be needed to increase average per head consumption of deer products in Western Europe.

However development of the market will rely on farmers cooperating to target customers and consumer groups and communicating effectively with them.

6.2 Eastern Europe (Valdas Danilevicius)

Deer farming is less developed and is based on the development of hunting enclosures during Russian control.

There is lack of expertise and knowledge about management and breeding of intensively farmed deer and there are no organised 'deer farmer' groups.

There are many political obstacles to the development of deer farming in Poland and the Czech Republic.

Most deer meat products consumed are sourced from wild shot deer however future membership of the EU will be important in developing markets for farmed venison and for developing the deer industry generally.

6.3 North America (Douglas Harpur)

From 1993 to 1996 the value of venison consumed increased by 82% (27% pa) in North America.

The total venison consumption in 1996 was 1,356 tonnes of which 829 tonnes was imported. Over 90% of all imports were sourced from New Zealand.

Based on consumption in Germany relative to its population, it was suggested that North America could consume 3.7 times more venison than Germany.

Using estimates of potential venison consumption as a percentage of red meat consumption in North America and taking account of the influence on the market of venison produced by hunting, Harpur suggests that the future volume market for farmed venison in North America could be 11,500 tonnes annually (eight times 1996 volume).

However, Harpur also indicates that this theoretical figure could easily be influenced by many factors.

6.4 Australia/New Zealand (Colin Ward)

Discussion revolved around the need for responsible market leadership, the establishment of an international infrastructure and channels of communication to encourage the future prosperity of the international deer community.

The paper recommended:

1. The creation of an international code of ethics.
2. The creation of a low cost but effective conduct and ethics committee.
3. The creation of formalised international channels of communication and dialogue involving both government and private sectors.
4. The establishment of an international licensing policy to embrace all exporters of wild shot and farmed venison.
5. A disciplinary mechanism that could involve both government and private sectors.

6.5 Asian Markets for Deer Products (Jimmie Suttie)

Asia was a major market for deer products well before the expansion of world wide deer farming began in the 1970's.

Major products traded were velvet antlers and co-products including pizzles, tails and sinew. Venison had little importance. Statistics on trade with Asia in these products are difficult to obtain and are mostly sourced from New Zealand, the major world trader in these products.

Most velvet exported from New Zealand is exported in dried form after processing in MAF accredited plants. The USA is an increasingly important market.

Table 4 shows destination for New Zealand velvet antler exports.

Table 4 - Destination of New Zealand velvet antler exports (kg) (Suttie **[1]**)

	1991	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**
Australia	1,207	1,457	1,594	1,393	637	1,488	2,164
Canada	35	57	35	450	249	275	1,952
China	0	0	0	0	10	510	1,901
Hong Kong	63,212	62,279	78,565	114,649	75,347	96,728	81,786
Japan	275	162	1,319	1,251	661	1,796	2,994
Kenya	1,500	200	0	200	2,200	0	200
Korea	52,416	56,454	58,109	78,945	65,584	76,974	87,862
Macau	0	0	0	0	0	0	65
Malaysia	0	0	45	0	0	0	0
Singapore	211	218	262	205	378	202	140
Thailand	0	0	0	10	0	4,480	1,819
Taiwan	6,967	4,358	1,788	3,750	2,842	5,437	1,819
USA	15,190	11,363	9,227	7,225	17,401	22,535	17,753

The percentage of New Zealand venison products sold in Asian markets are small as shown in Table 5

Table 5 - Asian Destinations of New Zealand Venison (Suttie **[1]**)

	Frozen		**Chilled**		**Frozen and Chilled**	
	Volume (kg)	**% of NZ's total venison exports**	**Volume (kg)**	**% of NZ's total venison exports**	**Volume (kg)**	**% of NZ's total venison exports**
1996						
China	1,615	0.02	-	-	1,615	0.01
Hong Kong	29,802	0.29	547	0.04	30,349	0.26
Japan	132,135	1.29	47,318	3.32	179,453	1.54
Korea	23,445	0.23	9,248	0.65	32,693	0.28
Malaysia	894	0.01	-	-	894	0.01
Singapore	52,3010	0.51	6,123	0.43	58,423	0.50
Thailand	-	-	504	0.04	504	0.00
TOTAL	**240,191**	**2.35**	**63,740**	**4.47**	**33,931**	**2.61**
1997						
Hong Kong	64,022	0.60	1,292	0.09	65,314	0.50
Japan	85,404	0.80	33,721	2.30	119,125	1.00
Korea	18,366	0.20	6,605	0.50	24,971	0.20
Singapore	116,894	1.10	5,051	0.4	121,945	1.00
Thailand	412	0.004	-	0.00	12,462	0.10
TOTAL	**285,098**	**2.66**	**46,669**	**3.24**	**343,817**	**2.83**

Almost all New Zealand co products are exported to Hong Kong, Taiwan and Japan.

Available information suggests that the future for velvet marketing must lie outside of Asia.

A modest increase in venison markets is foreshadowed for the foreseeable future. Co-product availability is directly related to the kill rate and as kill rates increase markets in China for co-products are expected to expand.

6.6 The Retailer/Consumer View (Gareth Jones, Managing Partner, Lloyds of Europe)

6.6.1 Global trends in Big Food Retailing

In more developed markets in Western Europe, regulation and planning restrictions are hitting very hard. These factors are having a significant influence in the retailing trade, particularly in business size.

To survive large retailers need to meet a critical size of $8 billion turnover to be profitable and $2 billion just to survive.

A net result is an expectancy that there will be a huge number of mergers that may result in only 8 global players in the food retailing business. These mergers obviously will include cross border take overs including movement into emerging economies like those of the former Soviet Union.

A suggestion that the "Big Three" world wide will be: Wal-Mart in the Americas; Metro in Europe; and Dalei in Japan.

However already the suggested geographical confinement of these groups was broken in February 1998 with Wal-Mart moving into Germany by buying the Wert Kauf chain of 16 Hyper markets.

6.6.2 Top Twelve in Europe

The top twelve retailing companies in Europe are:

1.	Metro	4.	Aldi	7.	Rewe	10.	Auchan
2.	Edeva	5.	Tengelmann	8.	Carrefour	11.	Tesco
3.	Intermarché	6.	Promodés	9.	Leclerc	12.	Sainsbury

Only those underlined have developed business out of Europe.

6.6.3 Pressures in Europe

- Regulated out of town developments that will cause even more pressure when the EU expands in 1999 to comprise a total 15 European countries.
- Introduction of the Euro currency in 1999.
- Low margins for retailers in mainland Europe (1% net) although they are a little higher (5% net) in the UK.
- Low growth in the overall food market within the EU.
- Cross border expansion where a large volume of revenue will be moved into new EU countries to assist their development.
- Attractive new investment markets in Czech, Hungary and Poland.
- Fragmented large markets of Italy and Spain.
- Continued strong performance by discount markets of quality products.
- The entrance to the European market of Wal-Mart

6.6.4 Action for Venison

- Minority market needs coordinated trade marketing.
- Retailers need to be influenced by and understand the whole industry.
- Need international cooperation to strengthen message to the retail industry.
- Need to maintain higher margins to reflect the minority market.
- When undertaking promotional programs it is important to remember that most markets are more stimulated by product packaging and development than advertising. Product should be packed for different markets, and packaging should be convenient.
- The industry should plan to introduce bridging products designed to encourage trial and family consumption of the products.

6.6.5 Food Sales – Other Markets

Independent retailers are dealing across the whole of Europe.

Catering is very highly fragmented and a difficult market but it is a growing market.

Direct selling options are certainly increasing where committed people will distribute product to friends and people who are like minded and wish to try quality with confidence.

The future of marketing food products by internet is developing. For example new Wal-Mart stores are designed as dual purpose buildings so that when (if) internet marketing becomes important buildings can be used as warehouses.

6.6.6 Results of the Internet Trading

The Sainsbury company, a large multi product retailer in the UK predicts that they will lose customers as a result of internet trading.

Customer loss will come from the following categories:

- busy professionals;
- families;
- people who find visiting supermarkets a chore;
- the less mobile (with an aging population this sector is increasing); and
- those in rural areas.

These groups represent a wide cross section of the whole community.

Suggestions are that by 2005 about 6% of shopping will be lost by superstores to the internet and by 2020 about 20% will be lost.

To put that in perspective, each 1% of superstore shopping represents about £4 billion (AUD$10.5 billion) in Europe.

6.6.7 Farmer Markets

There is a slow but steady development of farmer markets throughout Europe. They tend to work from a perspective of local quality produce for local people ('green' concept).

The markets generally offer producers much higher margins than otherwise expected.

6.6.8 The Consumer Media - Venison

Discussion with journalists in the UK who write about food revealed the following points:

- venison market is a niche market;
- venison has a strong taste (with positive and negative aspects);
- 'foodies' love it but not so good for families;
- very little communication from the trade about how to prepare, cook, etc;
- low perception about farmed vs wild venison;
- not a food for families;
- low interest from readers;
- 'real' venison comes from the farm and the corollary is that supermarket product is not so good; and
- low awareness of health aspects.

6.6.9 The Changing European Consumer

- populations are aging;
- people have '99 lives' (people are very busy and need quick, easily prepared food);
- prosumers: people who seek out product because they know it is good and once they have a rational approach to the product they stay with it;
- growth of 'organic';
- search for healthy eating;
- declining consumption of red meat;
- increasing consumption of white meat;
- safe meats (BSE) and traceability; and
- massive growth in prepared foods.

6.6.10 Conclusion

- Venison is a niche market;
- Need to adapt a coordinated strategy for trade marketing to big companies;
- Many direct channel opportunities exist;
- Catering and developing 'fashion' needs to be exploited;
- Get the right cooks telling about venison;

- Farmed venison has many good points which are not communicated to consumers with sufficient weight; and
- Major opportunities exist for product and packaging development and for targeting family consumption.

6.7 New Zealand Perspective (Richard Riddiford)

Although NZ is the worlds largest producer of venison the volume of venison in world meat markets is minute.

Mr Riddiford described the NZ Game Industry Board's role and explained its powers and leadership role.

NZ's priority focus is on creating demand and lifting NZ produce pressure through branding.

Some research programs will extend further the NZ definition of quality to include the ability to trace meat from the plate back through animal pedigrees.

The NZ industry is committed to changing its situation of over exposure in European markets while remaining a major player in the market.

The NZ industry is looking to leave its past volatility behind and create a new more secure more stable future.

7.0 PROFITING FROM THE MARKET

7.1 Factors Influencing Cost and Returns (Russell Marchant)

The parameters that most affect profitability are weaning percentage and carcase value. Production must concentrate on these parameters and those factors that influence them.

Generally across the world available and estimated data indicates that compared to other species, weaning rates in deer are poor.

Management practices to increase weaning rates were discussed.

It is important to maximise carcase weights through management and feeding (perhaps including extended lighting in sheds) to maximise returns.

7.2 Trophy Hunting for Extra Income (Johan Solheim)

Johan discussed deer hunting as a culture, society's view of deer hunting, regulations, trophy assessment and pricing.

In some areas of Europe deer parks for trophy hunting are profitable.

7.3 Velvet and Chinese Pharmacology (Jimmie Suttie)

Jimmie related the traditional users of deer velvet antler and described the effects of velvet antler.

He also reported on research to assess performance enhancing effects, restorative ability and anti-aging effects of velvet antler.

There is no evidence for a specific anti-microbial or anti-viral function for velvet.

The future for velvet antler is not as a cure in its own right but as a tonic with wide spread benefits as a strengthener, restorer and stimulator of nerves and blood vessels.

7.4 Additional Sources of Income - Deer Skins (Jeremy Law)

Jeremy described the care and tanning of deer skins for extra profit.

7.5 Deer Farming and Tourism (Didier Rogues-Rogery)

Didier described the development of deer tourism in France and indicated it revolved around either hunting parks or Farm visits.

Income is sourced from entry fees for both situations and from accommodation of restaurants in hunting parks and from direct sales of products on farms.

8.0 PRACTICAL VENISON PRODUCTION

8.1 Feeding the Pregnant Hind (Dennis Chapple)

Information was presented on behalf of Dennis and Mervyn Davies.

In summary, Dennis said while still growing, Red deer hinds in their second pregnancy require at least 15 Mega Joules (MJ) of Metabolisable Energy (ME) per day in winter to produce acceptable calves at weaning.

However mature hinds that are housed and in good condition only need 11 MJ ME/day provided good grazing is available during late pregnancy and early lactation.

8.2 Management of Grazed Pastures and Forages for Optimum Deer Production (T N Barry et al)

Tom Barry discussed research into pastures and deer production.

Research concluded that perennial ryegrass/white clover pastures should be maintained in a vegetative state at a minimum height of 10cm to maximise deer growth rates.

Inputs of red clover and chicory consistently increased the percentage of animals reaching target liveweights. Chicory and red clover swards are winter dormant so should only be sown over 20% of a deer farm. They should be allowed to grow to 30cm and grazed down to 10cm and stock removed.

It is suggested that other legumes that grow well in dry conditions such as lucerne should be considered as forage for farmed deer.

When properly managed, stands of chicory can be used to increase deer growth and reduce internal parasitism.

8.3 Artificial Breeding Technologies for Farmed Deer (Geoff Asher)

Dr Asher reviewed 'state of the art' reproductive technologies for red deer/wapiti and fallow deer.

In summary, Geoff indicated that although artificial breeding technologies have developed rapidly since the 1970's, it is generally only used at a low level within the industry.

The 'newer' In Vitro Embryo Production (IVEP) is only just beginning to have an impact in the deer industry. The fundamental technology of IVEP is the effective harvest of unfertilised ova (eggs) from females that are fertilised in a test tube before storage or transfer to surrogate mothers.

Artificial breeding technologies have been used to hybridise different species of deer where various factors make natural hybridisation difficult.

The technologies are likely to play an increased role in farming systems and in the propagation of endangered species.

8.4 An Ecological Approach to Pasture Management (P Ernst et al)

This German research has shown that reduced stocking rates and a program of alternative grazing and mowing leads to improved nitrogen utilisation from the soil and a subsequent reduction in nitrates in soil.

8.5 Farm Gate Sales (Dr Julian Ridge)

The paper by Dr Ridge summarised that in the UK farm gate sales offer an opportunity for increased farm profitability.

The practice requires strong belief in the product sold.

This method of sale appears to provide less opportunities in Australia where human populations are less dense than those in the UK.

8.6 Feeding and Management of the Deer Calf from Weaning to Slaughter (Vigh-Larsen et al)

This paper examined the possibilities of improving year round supply of venison from young animals housed over winter exposed to a combination nutritional regimes and day lengths.

Summary findings in relation to compensating growth were that:

(i) groups of deer on winter restricted feed diets are unable to fully compensate and reach the same 15 month weight as groups that receive high nutrition during the winter months.
(ii) in a farm situation, a restriction in the quantity or quality of summer feed may severely affect the amount of compensatory growth received.

Results of experiments on the effect of photoperiod on voluntary feed intake (VFI) and daily liveweight gain (DLG) were reported. In all experiments the introduction of a regime of 16 hours of light and 8 hours of darkness eliminated the reduction of VFI and DLG normally seen over winter.

The research also demonstrated the relative lower efficiency of food conversion of Red deer compared to cattle.

A risk of intensive feeding with controlled day length is an increased fatness of animals. The fat content of carcases can be controlled by advancing the slaughter date.

9.0 HEALTH AND QUALITY

9.1 Animal Health (Jerry Haigh)

Jerry discussed deer health and suggested that an understanding of health requirements requires an understanding of deer biology. With an understanding of deer biology, health is based on providing deer with their nutritional, behavioural, reproductive and productive needs while taking account of their susceptibility to disease.

Aspects of nutritional and reproductive requirements were discussed and a note made of different species requirements.

Deer disease was discussed and the role of surveillance and prevention in maximising farm productivity.

Welfare requirements of deer, especially in consideration of their 'recent' domestication and aversion to some farm practices was highlighted.

9.2 Carcase and Meat Quality Characteristics: Venison in a Competitive Market (Alan Foster et al)

The introduction to this paper described that venison is favourably priced in current European markets, however not so much through its own interest values but rather the lack of confidence in competitive red meats.

When confidence returns to beef and mutton markets the ability to attract/maintain market share will be dependent on many qualities that will be used to compare and contrast each product.

The paper described comparative data on one aspect of meat quality, the composition of the fat in relation to human health.

Comparisons with beef and sheep meat were made with venison from Red deer stags. In summary Red deer stag carcasses contained a higher percentage of lean (meat) and less fat and bone than bull and ram carcasses.

The lean to bone ratio in limbs of carcases were compared with deer better than cattle which were better than sheep. The ratios were reversed when compared for neck, thorax, lumbar and abdominal joints.

This means that generally the deer provide a greater percentage of meat in the more valuable cuts of the carcase.

Because of the overall leanness of deer carcases, consumption of saturated fat would be reduced by eating venison compared to other species. Another nutritional advantage of the venison is that the intake of poly unsaturated fat would be increased by eating venison resulting in a high poly unsaturated to saturated fats ratio (P:S) from eating venison.

These factors should be carefully considered and use in competitive marketing programs.

9.3 Quality Assurance (Prof. David O'Beirne)

The paper discussed objectives of Quality Assurance (QA) schemes and in particular the elements of QA schemes that are common to most schemes. The main elements are: traceability, identification, movement controls, health and hygiene, animal welfare, feeding records, veterinary remedies, slaughter facilities and carcase quality.

One of the main difficulties of all QA schemes is that consumers often rank hazards wrongly or with inaccurate or inappropriate information.

The facts that influence consumers in the UK to purchase beef are price, cut appearance and quality assurance marks. Information on quality assurance and in particular animal welfare is also important. In the UK country of origin is also a very important influence to consumers.

Quality assurance schemes for venison are important and will become more important in the future. The objectives of the QA schemes are:

- to get production right;
- to ensure meat is produced to minimum standards;
- equally and perhaps more important to address specific concerns of consumers.

Standards improved relate to standards for production systems, slaughter houses, processing, food handlers.

In the UK, the Ministry of Health requires that all stock entering an abattoir are ‘clean’, not be ‘dirty’. This is an attempt to reduce *E. coli* infection risks to humans.

From July 1998 all deer in France will need to be TB tested before movement. It is considered likely that the remainder of the EU will soon adapt this movement testing program.

One of the most important aspects of any QA program is the need for independent auditing of the QA status of each section of the program.

10.0 FINAL DAY

10.1 Government Funding of Research and Development for Emerging Livestock Industries of Australia (Prof J Thonard)

The paper described the Australian Deer Industry Association's (DIAA) relationship with funding bodies in Australia and in particular the Rural Industries Research and Development Corporation (RIRDC).

Particular mention was made of the first Deer Industry five year plan jointly developed by RIRDC and DIAA. The objectives of the plan are:

1. Increase the size of the deer population in Australia;
2. Improve slaughtering and meet processing efficiency;
3. Enhance information transfer;
4. Produce high quality deer products;
5. Develop non-chemical means of harvesting velvet;
6. Improve production efficiency by producing superior venison and velvet at lower costs and receiving higher prices at the farm gate;
7. Develop value added products; and
8. Develop current markets more effectively, offering better returns and identifying new markets.

In summary the belief in the future of the Australian industry is demonstrated by RIRDC and DIAA commitment to essential research and development programs.

10.2 Global Deer farming: Past Performance and Future Promises (Ken Drew)

The number of deer extensively managed greatly exceeds the number of domesticated farmed deer. Products of these animals, particularly reindeer, are mainly used by people managing the deer.

The industry's origins were discussed in earlier papers but in summary, China has the largest Asian industry. China's industry is based on Sika deer and to a lesser extent Red and Wapiti deer. Its production focuses on velvet antler and co-products for local medicinal markets.

North America actively farms Fallow, Red and Elk. Elk are mainly kept for velvet antler production and livestock sales while Red deer are kept for

venison and velvet antler and Fallow are kept for venison. Research into DNA testing is advanced.

European deer farming is based on small holders of Red and Fallow deer. There is a significant influence of conservationists on deer farming in Europe and geographical situation also influences production. Nutrition research is ongoing.

Australasia's deer industries are concentrated in New Zealand. Industries rely on natural pasture grazing for production and research concentrates on improved pasture use and development/use of artificial breeding technologies. Scale is an important determinant of profitability.

The future of all deer industries is dependent on their ability to meet consumer demands that include aspects of animal welfare, food safety and traceability.

In future the industry will need to produce ultra clean (bacteriologically) product to attain long shelf life and meet market requirements for chilled products.

Ken's final comment was "the challenge for the future among deer farming countries is to find a way to ensure that there are minimal differences in product quality between countries so that international demand for this gourmet lean, light and tasty meat will grow steadily.

10.3 Welcome to the US and the North American Deer Farmers Association (Jill Bryer-Wood)

Jill detailed the origins of Deer farming in the United States and of the establishment of the North American Deer Farmers Association (NADeFA).

The World Deer Farming Congress III will be held at Texas A&M University in College Station , Texas in 2003.

Twenty-five percent of NADeFA members are in Texas and Texas A&M University has a major research program in deer covering aspects of nutrition, breeding, management and meat quality.

All delegates were welcomed to the Third World Deer Farming Congress in Texas in 2003 and are promised an interesting seminar and exciting social events.

REFERENCE

[1] A Tribute to World Deer Farming (1998), Proceedings of the Second World Deer Farming Congress, Limerick, Ireland.

APPENDIX

Conference Program

OPENING ADDRESS	
Welcome to Congress	Bertie J Wall
Welcome to Ireland	Minister of Agriculture and Food Joe Walsh
The First New Domesticant for 5000 years?	Dr T J Fletcher
OVERVIEW OF WORLD DEER FARMING	CHAIRMAN: BERTIE WALL
Overview of World Deer Farming - Europe	Professor Dr Günter Reinken
Deer Farming in the USA	Dr Raleigh Buckmaster
The Farming of Deer in Canada	J C Haigh and I Thorleifson
Overview of World Deer Farming - an Australian Perspective	Henry Shapiro
Overview of World Deer Farming - New Zealand	John Spiers
Deer Farming in Asia	Dr K R Drew
THE MARKET	CHAIRMAN: RAINIS CEDRINS
Market Potential in Western Europe	Karl Wilhelm Beckman
Deer Framing in Eastern and Central Europe	Valdas Danilevicius
The Potential Market for Venison in North America	T R Douglas Harpur
The World Market Potential: Australia/New Zealand	Colin Ward
Asian Markets for Deer Products	Dr J M Suttie and M J Loza
The Retailer/Consumer View	Gareth Jones
New Zealand Perspective on Achieving Market Potential	Richard Riddiford
PROFITING FROM THE MARKET	CHAIRMAN: DR PAUL AUDENAERDE
Factors Influencing Costs and Returns of Venison Production Worldwide	Russell Marchant
Trophy Hunting as an Additional Source of Income for Deer Farmers	Johan Trygve Solheim
Velvet and Chinese Pharmacology	Dr J M Suttie and S R Haines
Additional Sources of Income - Deerskins	Jeremy Law
Deer Farming and Tourism	Didier Roques-Rogery
PRACTICAL VENISON PRODUCTION	CHAIRMAN: DR FRANK VIGH-LARSEN
Feeding the Pregnant Hind	Dennis Chapple and Mervyn Davies
Management of Grazed Pastures and Forages for Optimum Deer Production	T N Barry, P R Wilson and P D Kemp

PRACTICAL VENISON PRODUCTION	CHAIRMAN: PROFESSOR DR GÜNTER REINKEN
Artificial Breeding Technologies for Farmed Deer	Dr Geoff Asher
An Ecological Approach to Pasture Management	Dr Pierre Ernst and Dr Wilhelm Zähres
Farm Gate Sales	Dr Julian Ridge
Venison from the Valley of the Huisne	Dominique Vade
Feeding and Management of the deer calf from Weaning to Slaughter	F Vigh-Larsen and M H Davies

HEALTH AND QUALITY	CHAIRMAN: DR JOHN FLETCHER
Animal Health	Dr J C Haigh
Carcass and Meat Quality Characteristics: Venison in a Competitive Market	Alan V Fisher, Jacqueline A Bayntun and Michael Enser
Quality Assurance	Professor David O'Beirne

THE FINAL DAY	CHAIRMAN: TONY ARMITAGE
Government Funding of Research and Development for Emerging Livestock Industries in Australia	Professor Emeritus John C Thonard
Global Deer Farming: Past Performance and Future Promise	Dr K R Drew
Welcome to the United States and the North American Deer Farmers Association	Jill Bryar Wood

CONFERENCE SUMMARY AND FAREWELL	EJVIND HERLEVSEN

FARM VISIT AND DEMONSTRATION

Springfield Castle - The Home of Jonathan and Betty Sykes

The Cookery Demonstrations	- Nichola Fletcher - Chris Steen
Fashion Show	Creato of Belgium and Jeremy Law of Scotland

Report on the Fourth International Deer Biology Congress

Pannon Agricultural University, Hungary
30 June - 4 July, 1998

by Chris Tuckwell

The attached sheet provides an outline of the contents of another international deer congress which took place a few days after the Second World Deer Farming Congress.

If you are interested in obtaining a copy of the full report of this second congress, please contact Andrea Bryant, phone 02 6272 3088.

CONTENTS