RURAL INDUSTRIES RESEARCH
& DEVELOPMENT CORPORATION

Niche Markets for
VENISON

A report for the Rural Industries Research and Development Corporation

by Chris Tuckwell Rural Industry Developments Pty Ltd
and
Lynelle Tume, FoodScape Pty Ltd

August 2000

RIRDC Publication No 00/118
RIRDC Project No DIP-3A (Part A)

ISBN 0 642 58148 7
ISSN 1440-6845

Niche Markets for Venison
Publication No. 00/118
Project No. DIP-3A

Researcher Contact Details
Chris Tuckwell
PO Box 1105
Gawler SA 5118

Phone: (08) 8523 350 0
Fax: (08) 8523 3301
Email: tuckwell@dove.net.au

Lynelle Tume
16 Martingale Court
Cleveland QLD 4163

Phone: (07) 3821 4200
Fax: (07) 3821 4200
Email: foodscape@redland.net.au

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@rirdc.gov.au.
Website: www.rirdc.gov.au

Published in August 2000
Printed on environmentally friendly paper by Canprint

Foreword

The majority (at least 90%) of venison produced by Australian Deer Industry is sold in export markets. This makes the industry especially vulnerable to international market forces over which it has no control (international exchange rates, international import requirements etc) and to international competition from the world's largest industry and close neighbour, New Zealand.

International and domestic market access continues to be compromised by a lack of understanding or acceptance of market requirements.

Producer commitment to programs that overtly demonstrate industry's collective commitment to meeting market specifications of product quality, animal welfare, disease status and absence of contaminants is essential for the immediate and long term future of the industry.

At present, the Australian deer industry competes directly with other countries (in particular New Zealand) in existing markets. One of the industry's priorities is to build demand and spread demand risk by broadening the specialty international and domestic market base.

Information produced by this project and contained in this report will, if considered objectively, contribute to the development and future expansion of the Australian deer industry by encouraging a new confidence in the quality and supply of venison it produces.

Japanese market research reported by the project show opportunities for further investigation and development of niche Japanese markets based on the regular supply of consistently high quality products.

This report, a new addition to RIRDCs diverse range of almost 500 research publications, forms part of our Deer R&D program, which aims to foster an Australian deer industry as a profitable and efficient mainstream agricultural enterprise.

Most of our publications are available for viewing, downloading or purchasing online through our website:

- downloads at www.rirdc.gov.au/reports/Index.htm
- purchases at www.rirdc.gov.au/eshop

Peter Core
Managing Director
Rural Industries Research and Development Corporation

Acknowledgments

Project researchers acknowledge the cooperation and contribution by Mr Warwick Hack (Primary Industries and Resources South Australia), Dr Andrew Hansen (Orange Veterinary Hospital) Mr Bruce McKay (Agriculture NSW) and Mr Jason Flesch and Dr Rob Mulley (University of Western Sydney) to the development of the condition scoring charts.

Venison processors who contributed to the development of the charts were Mr Kevin Barnes (Onkaparinga Valley Venison), Mr Alan Chapman (Bilby International), Mr Des Delaine (Hahndorf Venison) and Mr Rod Maclure (Australian Game Meats).

In particular, Warwick Hack's contribution on behalf of Primary Industries and Resources South Australia was significant and the charts would not have been developed without his help.

Glossary

Fat depth: Used to objectively assess the carcase condition score of fallow deer.

It is a measure of the depth (thickness) of subcutaneous fat (fat between the skin and muscle) that lies immediately above the muscle.

Ideally fat depth is measured using a Hennessy probe and the measurement must only reflect the depth of fat over muscle.

Tissue depth: Used to objectively assess the carcase condition score of red deer.

It is a measure of the depth (thickness) of all tissues (muscle and fat) that lies immediately above the rib bone at the GR site.

The GR site is that position 160 mm from the mid line of a carcase on the 12^{th} rib.

Ideally tissues depth is measured using a GR knife and the measurement must reflect the depth of all tissues over the rib at the GR site.

Contents

List of Tables

Executive Summary

Market demand

The development and maintenance of stable domestic and international markets for Australian venison is an essential ingredient for the long-term future of the Australian Deer industry.

Since its beginnings in the 1970's, the Australian venison industry has relied almost exclusively on international demand for its products, and has generally targeted European markets competitively supplied by the world's biggest producer of farmed venison, New Zealand. Some venison has been, and continues to be, sold to markets other than traditional European markets, but the relative volume is small.

Stimulation of market demand, particularly for export, has been frustrated by a number of issues. Lack of continuity of programs or campaigns to assist market development has been a major factor. This is true of both the deer industry generally as well as individual exporters or processors, and is probably due to a shortage of funds specifically for marketing related exercises.

When all the basic requirements to supply a customer have been met (ability to supply the requested volume, compliance with import protocols, and a suitable price), long term sustainability has often been compromised by failure to meet customer specifications in presentation, quality, accurate cutting lines and attention to packaging detail. The charts produced as part of this project should assist in better knowledge at producer level. Constant vigilance in the boning room should ensure that other quality factors are addressed.

Domestic markets

Until recently, consideration and development of domestic markets for venison has been uncoordinated and limited by a generally inconsistent product quality, lack of regular supply, poor presentation of products and lack of product knowledge by those marketing and selling.

Results of this project clearly demonstrate the lack of confidence potential Australian venison consumers (particularly those in the restaurant and other food service industries) have in the Australian Deer industry's ability to provide venison. However, food service industries still use venison regularly in their businesses but it is venison produced by the New Zealand deer industry.

The Australian Deer industry's ability to influence domestic food service industries is dependent on its ability to produce a consistent (quality assured) product, guarantee regular supply to consumers, present products appropriately and to back up sales with good product knowledge.

Already one or two venison processors have made small advances in the domestic market with quality assured product but their ability to meet consumer requirements is influenced by the quality of stock offered for processing. Industry statistics demonstrate supply variability and quality inconsistency of animals offered for processing. to maximise returns and develop consumer confidence, farmers must manage animals to ensure consistently high quality stock are offered for sale.

Venison processors are continually encouraged to pay premiums for stock from quality assured properties or to reduce prices for stock from properties not quality assured.

Condition Scoring Charts

To encourage the production of consistently high quality animals that improve returns to farmers and increase consumer confidence, this project has developed Condition Scoring Charts for red and fallow deer. The chart will help farmers better assess their stock and provide processors with an ability to objectively assess carcases and to pay accurately for the quality they receive. As part of the

Deer industry quality assurance program these chart will, in the long-term, help develop consumer confidence in the market.

Promotion

The anticipated inclusion of venison into the Australian Regional Australian Food Guide will help promote the deer industry and venison to city based consumers and tourists who spend time in major regional Australian centres.

Disjointed efforts to promote venison will have limited success unless a properly researched marketing plan is prepared for the industry generally. A three to five year plan which is fine tuned every year to re-focus on areas of change, opportunities or threats is considered essential for most successful food industries. Preparation of an annual implementation program for the optimal marketing mix of promotion, public relations and advertising in various media streams, is the only way to ensure a permanent place for venison in the food service and consumer market over the long term.

Venison trim

During the period of this project, assistance provided to venison processors has helped the development of markets for venison trim and co products. The demand for high quality (95CL) Australian venison trim now exceeds supply.

Food Service Guide Books

Although project researchers consider that a venison food service guidebook for users of venison has merit as a marketing tool, the production of the proposed guidebooks was not supported by processors and so was not undertaken during the project. It was obvious from the contact with chefs and purchasing managers for hotels and large restaurants that there is a need for some informational resource on venison generically. Additionally, there is a strong desire for better information on the differences in cut sizes and weights between the deer breeds. This is only a feature in areas where chefs may be exposed to cuts from both fallow and red deer, and to a lesser extent, rusa deer. However, some confusion was observed in capital cities where New Zealand venison is marketed, since this product frequently has larger cut sizes than the same muscle cuts from Australian venison.

Specifications for New Zealand slaughter stock are usually for animals in the higher weight range for young (less than two years old), male red deer. Many stock being slaughtered in Australia are considerably smaller, yielding smaller cuts. This is not necessarily a problem for chefs, provided they are presented with relatively consistent product, but many processors do not obtain satisfactory yields from small animals.

Guidebooks produced for the food service industry by the beef and sheep meat industries have had to address the variations in expected sizes of cuts, particularly since the widespread availability of feedlot cattle, which are generally much larger than the grass fed animal. Changes in production techniques and cutting lines for some lamb meats led to confusion over weight of cuts available. Since hogget and mutton are rarely used by the hospitality trade, explanation of size ranges has been confined to the export specification books.

The deer industry would be advised to continue to monitor the needs and expectations of their food service customers, not only as an information service, but to keep Australian venison “top of mind”.

1. Introduction

Australia is a small player in the international venison market and the world's largest player is our closest neighbour New Zealand. The largest 'importer' of farmed venison is Europe, more particularly Germany, and most of the venison traded is sourced from Red deer. German venison imports are principally controlled by ubiquitous wholesalers who purchase venison according to an 'across the board' minimum schedule price (commodity trading).

New Zealand's deer herd is principally made up of Red deer while approximately 50% of Australia's deer herd is Fallow deer and New Zealand's large deer herd is concentrated in a relatively small area while Australian venison is faced with a competitive disadvantage (economies of production scale, market supply volume relative to profit margins, costs of transport, costs of processing, etc.) when compared to the world's largest producer and exporter of venison.

To survive, Australia's deer farmers need to receive relatively high returns, compared to other livestock species, for the meat they produce. Keys to consistently high returns include: (i) reducing direct competition in markets; (ii) the development and adoption of Quality Assurance programs that guarantee clients consistently receive product that meets all their specifications, and (iii) boutique marketing in high value markets suited to the scale of production.

While South East Asian markets (principally Indonesia, Malaysia and Singapore) for Australia's venison showed early promise, recent economic conditions in Asia mean that the small market for venison in those countries has significantly contracted, is likely to remain at this low level (on the basis of price and/or volume) for the immediately foreseeable future. The volume of venison consumed in Australia appears to have changed little in recent times. However, in high value markets of Sydney and Melbourne, available information suggests that a significant percentage of venison that is consumed is imported from New Zealand. In the short term Australian venison marketers are unlikely to have the financial ability to compete with New Zealand venison marketers.

Investigation of 'niche' market opportunities for Australian venison in domestic markets and the development of strategic alliances based on regular supply of quality assured product appears to offer, as yet, un-developed market opportunities for the Australian industry. This project proposed the targeting of Australian regional tourism domestic market opportunities to encourage the use Australian product in preference to New Zealand product.

Similarly, investigation of regional Japanese markets, particularly in the north and west where moderate consumption of wild deer meat has been documented could provide a high value, small volume opportunity for Australian venison. Other small but high value markets like Brunei may offer opportunities although one Australian venison exporter is claiming exclusivity to supply based on supply of other meats. This perception could be challenged, and, with the right contacts alternative supply contracts are possible.

Initial investigations suggest that there are two principal types of restaurant that consume venison in Japan. They are the French restaurants that serve typical European style venison meals and the Japanese restaurants that serve either `Hot Pot' or traditional Sashimi style dishes. Both groups appear to principally use primal cuts although there is some evidence of interest in good quality trim for manufacturing purposes**.**

Returns to producers and processors should improve from a targeted value based marketing approach to individual niche markets. Entry into some markets with a preference for fallow venison would have an advantage over major competitor pricing strategies. Development of highly specific cuts/packs for a small but high value market would allow forward contracts and will be further enhanced by the Australian Quality Brand (currently being registered).

If the industry is unable to quickly develop market outlets for its products that give price confidence to its farmers, its immediate future is in doubt.

2. Objectives

To improve returns to Australian deer farmers by targeting development of niche markets willing to pay a premium price for differentiated cuts of Quality Assured Australian venison.

Specific objectives were:

- To identify, investigate and report on niche domestic and Japanese markets for Australian venison and identify and evaluate the potential of Australian domestic market sub-sectors and product preferences.
- Develop cuts and packaging/presentation appropriate to individual niche market needs.
- Prepare food service guidebooks for most suitable uses and methods for (a) selected fallow venison cuts and (b) selected red/rusa venison cuts.
- To initiate development and coordination of industry serving to the markets on a basis of supplying only Quality Assured product while controlling growth of demand to ensure that contracted demand does not exceed ability to supply.
- To target end user groups, organisations and training centres and professional associations in identified markets.

3. Methodology

Objectives 1, 2 and 3 were under taken, at lest to some extent, concurrently.

Objective 1

Desktop assessments of known contacts in Japan and Australian specialty sectors and identification of potential client markets. Analysis of current market statistics for venison and competitor meats is required to enable objective estimates of the likely size and value of the markets.

Contacts to be investigated included personal contacts made during other contract work and included current importers of New Zealand Cervena and other game meats.

Objective 2

To establish phone and electronic contact with potential clients to investigate their interest and determine specific production, processing, cutting, packaging and presentation requirements. Concurrently, assess any preferences for meat from particular breeds to identify specific breed opportunities.

An investigation of potential product demand patterns and volumes was planned during this phase of the project that involved travel to personally meet with potential clients. During visits to specific markets, attempts to evaluate competition, particularly from New Zealand venison or Cervena were planned to establish their product positioning strategies and branding success.

Objective 3

On the basis of 1, 2 and 3 above, food service books for specific markets will be developed for use as information marketing tools. The development of key branding messages for Quality Assured Australian venison and strategic product positioning for each market sector will form the base for the booklet contents.

If cuts not specifically required by Japanese markets were identified, the proposed an attempt to develop domestic consumer interest in these cuts – with the assistance of the food service books.

The project did not include in its funding application consideration of printing costs for any promotional material.

Objective 4

Discussion with industry marketers will identify those who are able and prepared to meet the DIAA's strict quality and production guidelines. It is anticipated that individual clients will contract to the DIAA to supply product and that the DIAA will sub-contract the supply to marketers who can adhere to the industry and client specifications of quality requirements.

Objective 5

Transfer of product attributes information and communication of the quality focus of the DIAA to user groups, organisations and training courses will be undertaken in identified markets.

4. Results

Initial Research

Research of the Japanese market has identified the Autumn/Winter period as the peak demand season for venison as the meat is considered to have a warming effect and to strengthen the body against winter ailments. The Japan External Trade Organisation believes that development of the Japanese venison market is possible using a planned program of promotional activities and attending various food fairs. While this is a reasonable approach, it will be relatively expensive and will be difficult to maintain over a general market promotion. Since there are so few Japanese companies importing or wholesaling venison and other game meats, it could be more productive to establish a relationship with one of these and concentrate any promotional efforts.

Japanese consumers are said to prefer delicately flavoured venison from local stock to strongly flavoured product sourced from wild stock imported from France. However, no deer farming for meat occurs and any “local” product is the result of culled feral Sika deer causing destruction of crops in some areas of the country. It is highly unlikely that this meat would be as subtle flavoured as farmed venison. Research has been conducted on this venison from culled Sika deer because of the development of off-flavours during storage. Facilities are not available in the countryside to vacuum pack the meat, and it is packed aerobically. Optimal aging of this venison takes 7 days when stored at 3 degrees C, but off-flavour develops which is thought to be produced by lipid peroxidation. Research is continuing at several research institutes in a collaborative project, to determine wether development of these off-flavours can be prevented by feeding anti-oxidants such as vitamin E, before slaughter.

Japanese experience with, and preference for, local venison is with product sourced from these `small’ deer. Opportunities may exist for Australian fallow deer venison in this market primarily due to the similarity of size and the appearance of the cuts. This possibility was confirmed during later in-market research at Foodex 2000 in Tokyo.

According to Japanese statistics, 200 tonnes of venison are imported into Japan each year, apparently from New Zealand. It is not clear if this is all prime cuts, or includes trims and offals from other meats as the statistical category includes these items and no individual figures for venison exist.

Apart from New Zealand venison, some venison imports from Denmark and Sweden were discontinued after the Chernobyl disaster (as were all food imports from the extended fallout zone). It is thought, but not confirmed, that this may have been fallow venison.

Contacts were made with Australia’s regional chefs and food writers during the international food and wine festival, `Tasting Australia’ held in Adelaide during September 1999.

Negotiations to purchase venison trim from Australian processors have begun with an Australian importer of significant quantities of New Zealand venison trim

Japanese Market analysis

In Japan, venison is favoured for its low calorie and low cholesterol content relative to other red meats and its predominant use is in food service at high-class Japanese, Chinese and French restaurants. Another observed market niche appears to be the extensive network of traditional Japanese Inns or Ryoken. These are popular weekend “get aways” for city people and are also popular with tourists of all nationalities. Whether ski or snow resorts or just peaceful inns set in beautiful countryside, they are known for their excellent traditional food. Deer, rabbit, hare and game birds have long been hunted and served in various areas of Japan.

The supply system to such venues is through the wholesalers specialising in mainstream as well as "new" meats. There is a trend towards further processing by these companies to present products in completely trimmed, portioned, seasoned, rolled or filled form to stimulate interest by the modern Japanese chefs. Because labour costs are very high in Japan, suppliers of products such as venison are increasingly being asked to prepare cuts to such specifications. At least one New Zealand venison exporter is preparing small tray size packs of perfectly trimmed sashimi tenderloin and other cuts.

Japanese in-market research and Foodex 2000 trade fair

One Australian exporter with an office in Tokyo was displaying venison from Victoria in the form of chilled, vacuum packed, denvered primals. (Tender Plus P/L, Qld & Tokyo; Top Cut P/L, Vic & NSW). They were interested only in Fallow venison as previous attempts to market Red deer venison were unsuccessful as it was unable to be differentiated from New Zealand venison or compete with their prices. Tender Plus is now promoting fallow venison's preferred smaller cut sizes and premium image, which is for deer carefully reared in a clean, healthy environment. (NZ venison has the image of large, wild almost feral product).

Two Japanese wholesalers of mainstream and game meats exhibited NZ venison at Foodex Tokyo. Top Trading Co. (Far East) Ltd had New Zealand National venison as vacuum packed, frozen denvered striploins, leg cuts and tenderloins. Frozen portioned tenderloins (200-300g) were in clear trays with skin film packs. Although frozen, drip was evident in all packs and extensive gas bubbles present. Shinpoh Foods Co Ltd also displayed NZ venison striploins and portioned tenderloins. This company is focusing more on value added products, producing prosciutto wrapped meat rolls, salmon fillets rolled around scallop filling, duck breasts smoked, peppered or teriyaki glazed and horse and venison tenderloins in sashimi portions. These are popular additions to the menus in Ryokens (Japanese Inns).

Value adding is expensive in Japan (high labour costs), but there was great interest in these products displayed at Foodex. If an Australian processor employed the skill and time to produce and appropriately package such venison products, the high costs could be recovered by selling directly to these wholesaling companies in smaller volumes, which would better suit the resources of the Australian industry. There is evidence of extensive use of cold set binder technology as well as traditional egg albumen and starches in forming these products.

The Japanese CEO of Tender Plus Tokyo believes it will be slow to increase the 200 tonne per year import of venison, but that there is potential to replace New Zealand venison with Australian fallow product if well promoted. Importers are usually responsible for promotional costs and initiatives to chefs and hoteliers, although they do not supply them directly. They print much material regarding their own company services, quality (including HACCP) accreditation, and general Australian environmental information, but receive Japanese language promotional material from Meat and Livestock Association (beef and lamb) and from the Pork Corporation. They are obviously looking for game meats including venison to provide Japanese language specifications and cooking information.

New product trends in Japan

The United States of America is a major meat supplier to Japan. Their meat display at Foodex was expansive, with expensive and comprehensive books for each sector of the Japanese market – retail, foodservice, menu development, home cooking, healthy menus and value added guidebook. Some American companies packed pre-tenderised, individual portions as follows:

- Beef bottom sirloin steaks (petite cut) injected with 7% papain solution derived from papaya (or pawpaw). Six, skin film sealed steaks to a pack had a total box weight 851grams.

- Filet of sirloin steaks injected with papain (up to 12%). Six sealed steaks to a pack had a total box weight of 908grams.
- Boneless pork loin chops injected with papain (up to 21% solution including other ingredients), guaranteed, “tender every time”. Eight chops individually sealed had a total box weight of 908 grams.
- Top Trading Co. (Japan) exhibited vacuum packs of 5 frozen beef sirloin steaks that were “cheap Australian grass fed beef”, injected with white fat from Japanese Wagu cattle to give extensive marbling and desirable fat flavour.

It is worth noting that the American pre-tenderised products were obviously packed for American consumers who commonly purchase in packs of six or eight. Japanese beliefs concerning the association of the number four, six and eight with death customs, means that multiple item packs usually contain 5, or occasionally 3 items. This extends to tableware, sets of chopsticks, bowls and other serving ware. The sirloin steaks packed by the Japanese Top Trading Co. had only 5 to each pack.

Food Service Guide Books

Research on the desirable content of the proposed venison food service guidebook began by canvassing the needs of industry professionals during August and September 1999. The reported need of individuals was varied and dependent on each individual’s position within the industry (purchasing, marketing, chef, etc) and for chefs, their experience with game meat.

Summary information generally accepted as required for the proposed book included:

- A description of cuts currently available for supply to the food service sector.

- Location of each cut on the carcase, for example, the forequarter, loin or hindquarter.

- The size range of each cut. This caused particular confusion because of the difference in size of red, fallow and rusa deer. Some chefs commented that even within the same breed, they had received cuts from the same muscle with widely differing weights.

- Trim or presentation of the venison product was important to most chefs. Where time is limited and plate costs are relatively high, as in fine dining establishments, they are often prepared to pay higher prices for fully denvered cuts, vacuum packed and aged for an agreed period (usually 3 to 5 weeks).

- Identification of cuts according to cooking characteristics was of interest, particularly to chefs with less experience with game meats. Some were not sure if venison has similar characteristics to beef or lamb when it comes to cooking performance. Guidelines on appropriate cooking methods for specific cuts were considered to be useful (eg slow, moist methods for cuts with high connective tissue content, and fast, high temperature methods for dense, lean, tender muscles with little connective tissue / collagen).

- Information on the texture of muscles in specified cuts if it has relevance to the way a chef might present a dish. This could be important with cuts such as the smaller muscle of the silverside (semi-tendinosus), which looks similar to some other leg cuts but has a coarse texture with extensive collagen. This can produce a less tender result unless cooked by a slower, moist method.

Many of these issues, and much of the requested information could be provided in copies of the Venison Language and Specifications book that is available through the Deer Industry Bookshop.

This publication does not include expected weight ranges of red or fallow venison cuts, nor information on suitable cooking styles for various cuts.
Lack of support for the guidebooks generally related to individual processors and marketers indicating that they know their own customer needs and that the variation in customers' needs means that the guidebooks would have limited application.

The production of the proposed venison food service guidebooks was not considered further by the project researchers.

Domestic Australian Market

Market Demand

During the first week of October, the `Tasting Australia' Food Festival was held in Adelaide. This was the second biennial Tasting Australia Food Festival and included: The Australian Food and Wine Writers Festival; The Lifestyle Channel Australian Regional Culinary Competition; Oddbins 25th Anniversary Premier Wine Auction; Festival of Fish and various Tours. The Festival culminated with a two-day `Feast for the Senses'

Reports of the 1997 Tasting Australia Festival show that more than 40,000 food professionals and media took part along with about 30,000 members of the public. Organisers estimate that more people took part in the 1999 Festival.

As part of this RIRDC-funded project contract appointments were made to meet high profile Australian chefs and food writers particularly associated with regional food promotion. The purpose of the appointments was to discuss the promotion of venison in popular regional tourism areas of Australia.

A common perception encountered during all appointments was that there is positive reaction to venison itself and its appeal for use in the preparation of high quality food dishes. However, opinions strongly suggested that Industry had done itself significant damage in the past and that there was little inclination from high profile people and groups to provide any complimentary assistance now.

Negative industry comments included: "in the past the industry has treated the food industry very poorly"; "most of those involved in `marketing' venison know very little about their product"; "we never know where to buy the product", "the quality that we are offered is very variable", and " we are never sure that our orders will be filled when we expect them to be filled".

People were generally encouraged by information that the Industry was planning a new direction, but indicated very strongly that for the short term, irrespective of future activity, the Industry will continue to be burdened by the baggage of a poor image it carries from the past. To progress and gain the confidence of food professionals, food media and consumers, the industry, including marketers, must work to overcome its poor reputation in any new program it undertakes.

Promotion

Following the Tasting Australia Festival contact was made with the author of the Australian Regional Food Guide (Ms Sally Hammond) to discuss venison and the Australian Deer industry. Although Sally generally agreed with comments from other people about the past performance of the Deer Industry in relation to domestic venison marketing, she expressed interested in including information on venison and the Deer Industry in her next publication.

Information requested by Ms Hammond has been provided in the hope that it can be included in her next publication.

Trim and Co products

Negotiations with an importer (Rohan Trading Company of Sydney) of high quality venison trim (importing about 18 to 20 tonnes of venison trim per month from New Zealand) encouraged the discussion of Australian venison trim purchases from Australian processors. Major export processors were given details of the interest in purchasing Australian venison trim and encouraged to negotiate privately.

One of the processors successfully negotiated the sale of a trial shipment with Rohan Trading Company. Reactions to the first trial shipment were positive and following changes to packaging and presentation of product to meet buyer requirements, a long term, mutually acceptable supply contract has been negotiated.

A direct result of the contract negotiation with Rohan trading has been the development of two other domestic contracts to purchase Australian venison trim. A Brisbane based company is currently purchasing 2 to 3 tonnes of 95 CL (chemical lean) trim per month and a Melbourne based company is purchasing 2 to 3 tonnes of less than or equal to 65 CL per month.

The Australian company that processes the largest volume of Australia's venison has also successfully negotiated markets in the United States for deer tongues, hearts, livers, lungs, spleens, kidneys and blood.

A guide to prices currently (July 2000) achieved ($/kg) for deer co products is shown in table 1 below.

Table 1: Current (July 2000) sale prices for co products

Item	Red deer	Fallow deer
Sinews	$9.00	$4.50
Heart	$9.00	$0.00
Liver	$0.00	$2.00
Blood	$3.90	$2.80
Kidney	$0.00	$7.00
Tails	$10.00	$0.00
Pizzles	$9.50	$0.00

Venison Quality and Condition Scoring

As the general response from chefs and food writers to the Australian deer industry was poor, programs to encourage the improvement in average product quality available to the local market within this project were considered.

A major factor that influences the price that deer farmers receive for their venison animals and the average quality of venison available from processed stock is the body condition score of the stock processed.

Although most processors pay differential prices for stock on the basis of breed type and hot standard carcase weight (HSCW) few have made any attempt to differentiate farmer payments for stock on the basis of body condition. Processors usually pay a single HSCW price for animals of a species that fit within a weight range irrespective of the animal's body condition. This payment system penalises those who produce animals with ideal carcases to cover processing and marketing losses incurred by animals with emaciated or over fat carcases.

A system of visual, live animal assessment combined with objective HSCW measurement will benefit farmers who produce ideal carcases, penalise those who don't and subsequently improve the average quality of venison available to all markets.

Australian Body Condition Scoring Charts For Deer have been cooperatively developed for the Australian Deer Industry by RIRDC project funding, South Australian Department of Primary Industries and Resources, University of Western Sydney. They were developed as a guide and may be amended in the future if new information becomes available. They were been developed to aid Australian deer farmers and processors objectively assess the body condition of deer. Body condition may influence many aspects of deer production and profitability including reproductive performance, susceptibility to disease and returns from processed animals.

Live Animal (body) Condition Scores

The body condition score descriptions used in the charts are based on RIRDC project work undertaken by Dr Andrew Hansen and Bruce McKay (RIRDC project OVH-1A – report in press), project work undertaken by Dr Rob Mulley and Jason Flesch (RIRDC project USW-16A – report in press) and on the New Zealand Body Condition Score Chart For Deer produced by Audigé, Wilson and Morris.

Scoring is based on palpation of the spine, pelvis and rump of live animals. The simple scoring system varies from score 1 (emaciated) to 5 (over fat) and relates directly to carcase condition scores.

Table 2: Guide Body Condition Scores for All Deer

Score	Name	Description
1	Emaciated	No fat cover Pelvis, ribs and spine are prominent Concave rump area
2	Lean	Minimal fat cover Pelvis, ribs and spine still prominent but appear rounded rather than sharp
3	Prime	Ideal fat cover Pelvis, ribs and spine not readily distinguished Rump area is flat
4	Fat	Fat (some trimming necessary) Pelvis and rump rounded Spine covered by fat
5	Over Fat	Over fat (excessive trimming required) Pelvis concealed by fat Rump very convex Spine hard to palpate

Carcase Condition Scores

Fallow deer

Guide carcase condition scores are determined by **fat depth** over the loin as suggested by research work (report in press) undertaken by Dr Rob Mulley and Jason Flesch at the University of Western Sydney (RIRDC project USW-16A) and in consultation with existing Australian venison processors.

Steps to locate the standard site and measure **fat depth** on a fallow deer carcase are:

I. Move along the spine from the head towards the tail;
II. Find the vertebra that is associated with the last rib (usually the most prominent vertebrae in a hanging carcase);
III. Count the next five vertebrae towards the tail;
IV. Measure 25 mm perpendicular to the mid line, and;
V. Measure **fat depth** (a Hennesy probe is an appropriate tool).

Table 3: Guide carcase condition score for fallow deer

Score	Description	Fat Depth
1	Emaciated	No fat
2	Lean	Less than 2.0 mm
3	Prime	At least 2.0 but less than 4.0 mm
4	Fat	At least 4.0 but less than 6.0 mm
5	Over fat	6.0 mm or more

Red deer

Guide carcase condition scores for carcases are determined by tissue depth over the GR site for deer that, based on unpublished work by New Zealand researcher Dr Ken Drew, is a good predictor of whole carcase fat content.

Steps to locate the standard site and measure tissue depth on a red deer carcase are:

Locate the GR site as described in the Australian Venison language and Specifications manual. It is that position 160 mm from the mid line of a carcase on the 12^{th} rib and;
Measure tissue depth from surface to the bone (measured with a GR knife).

Table 4: Guide carcase condition scores for red deer

Score	Description	Tissue Depth
1	Emaciated	Less than 5 mm
2	Lean	At least 5.0 and less than 10.0 mm
3	Prime	At least 10.0 but less than 15.0 mm
4	Fat	At least 15.0 but less than 20.0 mm
5	Over fat	20.0 mm or more

Interpretation of Condition Scoring Charts

For each of the condition scores, the charts provide line drawings of live animals, photos of live animals and the carcases derived from each of the live animals.

The carcase shown as condition score 1 (emaciated) in the charts, depicts a carcase at the upper end of the range. This carcase and all carcases that have less condition, (muscle and fat) than that shown by the picture, must be considered emaciated.

Similarly, the carcase shown as condition score 5 (over fat) depicts the lower end of the over fat range. Any carcase with more condition than that shown (see depth measurements) must also be described as over fat.

Farmer Use of Condition Scoring Charts

Visual assessment of the body condition of live deer is difficult, particularly during cool months when coat hair is long. A long coat can disguise the actual appearance of the pelvis, ribs and spine while short coat can make an animal's appearance more irregular and highlight these areas. The charts highlight to farmers that the only reliable method of assessing live animal body condition is by palpation of the pelvis and spine.

The charts are used to explain to farmers that processors will pay less ($/kg hot standard carcase weight) for animals that are over fat or emaciated and that accurate estimates of animal body condition can improve their returns by ensuring only those animals that meet processors specifications are made available for sale.

Written information on the charts advises that condition scoring can also be used to identify appropriate husbandry programs that may be required to maximize reproductive performance, reduce susceptibility to disease, when to commence supplementary feeding, etc.

Processors Use of Condition Scoring Charts

Processors are continually being encouraged to differentiate farmer payment to penalize carcases that do not meet objective specifications and benefit those that do.

The charts provide an objective method of determining the body condition score for red and fallow deer carcases. The assessment can then be used to determine the hot standard carcase price that should be applied to each carcase. It ensures that prices are reduced for carcases that have low yields (emaciated) or require excessive trimming (fat).

Producers that provide carcases more closely aligned with processor requirements are assured of better returns than may be realised from fat or emaciated animals and subsequently farm profitability will improve.

5. Discussion of Results

Domestic Australian Venison Market

It is obvious that many of those involved with the domestic marketing of venison during the early years of the Australian deer industry have negatively prejudiced many food industry professionals about the Australian deer industry. The negative image of the Australian industry is confirmed in direct discussion with food industry professionals and with the knowledge that only a very small percentage of the venison produced by the Australian industry is consumed domestically.

However, the general negative perception of the Australian deer industry by Australian food professionals does not appear to extend to a negative perception of venison per se as venison imported from New Zealand continues to be used by Australian food industries.

It must follow that the generally poor perception of the Australian deer industry has resulted from historical industry activity. In particular Australia' s food professionals generally report experience with some or all of the following: poor service; lack of continuity of supply; lack of product knowledge; inconsistent product quality and; lack of available information about supply lines.

These results obtained early in the project suggest that programs to further develop the domestic market for Australian venison are likely to be expensive and more likely to be successful if undertaken with specific niche market clients by individual processors committed to production and supply of quality assured products.

For the remainder of this project, development of new interest in the domestic venison market was considered from a perspective of providing industry with an ability to objectively assess animal quality. This will improve the average quality of venison available to domestic marketers of venison and in turn, assist development of niche markets by improving confidence in the quality of products offered to the market.

Trim and Co products

Although the markets have existed for some time, as evidenced by the regular importation of venison trim from New Zealand, in the past the many non-cooperative Australian processors of Australian deer have been unable to separately market their small volumes of variable quality trim and co products. Obviously dissatisfied by variations in quality and supply negotiated supply from New Zealand.

The recent rationalisation of the deer processing industry means a few processors will have access to volumes of co products that are commercially saleable. Improvement in the value of co products sourced from red deer and the creation of value for co products available from fallow and rusa deer will significantly improve returns to Australian deer farmers.

One of the major reasons for the consistently greater returns realised by New Zealand farmers from animals sold for slaughter is that New Zealand marketers have created ongoing, profitable demand for co products collected during animal processing.

Venison Quality and Condition Scoring

One of the major reasons for the lack of confidence in the Australian deer industry is lack of consistent quality of product.

A major contributor to returns achieved by deer farmers from sales of animals for venison is the carcase condition of the animal. Animals in prime condition realise significantly higher sale prices than animals that are emaciated or over fat.

Data about the range of quality of animals processed (provided regularly in the Australian Deer Farming Magazine by RIRDC project DIP-4A) shows that the quality of animals offered for sale varies greatly. The variation is animal quality clearly affects individual farmer returns (price per kg hot standard carcase weight and price per head) and supports quality concerns described by Australian food professionals.

Live animal assessment that trains and encourages farmers to objectively assess animals before sale will: (i) help encourage farmers to manage animals in a manner that maximises farmer returns (produce and sell only prime stock); (ii) help minimise variations in quality of venison available to the market, and (iii) subsequently increase domestic demand (and perhaps prices) for Australian venison.

Objective carcase assessment by processors will help ensure that: (i) growers are paid accurately and according to the quality of each animal they produce, and; (ii) processors are able to provide accurate feed back to individual farmers about the quality of the animals they sell. Feed back to farmers will directly improve farmer returns by encouraging continual amendment of management practices in an effort to produce animals with prime carcases and indirectly, by increasing demand from domestic market clients by improving average quality of venison available to the market.

Japanese Market Development

The Japanese market for venison, as for all game meats, is not large but has the potential to increase significantly as younger, more adventurous consumers seek new and different foods. Wider travel experiences by more independent Japanese people are also exposing them to different meats.

As the results of the project indicate, any increase in the market size will be relatively slow, and continuity of effor t in promotion and positive public relations are most likely to assist this process. Australian exporters or processors who are interested in accessing this small but high value market should be prepared to offer consistently high quality, and possibly value added or further processed product. It is suggested that direct contact with the wholesalers currently distributing game or new meats could be a more appropriate method of market entry.

6. Implications

Domestic Australian Venison Market

The food industry, that the Australian Deer Industry services, obviously has a long, slow-to-forgive memory. It appears that a direct effect of this is that future domestic venison promotion and marketing programs, are faced with a huge, although surmountable, barrier of disinterest before they begin. This barrier will add costs both in time and funds required to achieve desired goals of any program.

On an encouraging note a few small processors are making encouraging progress in the Australian domestic venison market. In fact venison supplied by a domestic processor was used by a chef in the National Culinary competition in Adelaide to create to the `Best Presented Dish' at the competition, and to create a venison dish that received the runners up award for the `The Best New Food Service Product' at the Sydney Fine Food Festival.

These results suggest that opportunities for the development of domestic markets for Australian venison still exist for those who are prepared to commit to market development on the basis of consistently available, quality assured product supported by people who know and understand their product.

If the Australian deer is to develop long term domestic markets, it;

I. Cannot afford to damage any remaining consumer confidences;
II. Must provide potential consumers with details of approved (Quality Assured) suppliers of consistently high quality products;
III. Must be able to supply products when requested by a client and according to the client's specifications (probably means openly cooperative, strategic relationships between processors);
IV. Must encourage the rapid adoption of the industry Quality Assurance program that will give potential clients confidence in the quality of products they purchase;
V. Develop legally binding forward supply contracts between producers and processors/marketers. These contracts should give marketers more confidence in the availability of animals for processing and subsequently confidence in investing in market development activities. The contract would also reward those who produce to specifications and penalise those who do not.

Trim and Co products

Although this project has assisted the early development of domestic markets for venison trim produced by Australian processors, keys to ongoing improvement industry and individual producer returns from venison co products include: (i) the development and access of markets for co products based on the ongoing supply of quality assured products and; (iii) development of value added co products for the Australian domestic market.

Venison Quality and Condition Scoring

A small (A3) colour chart for each species (fallow and red deer) has been provided for no charge to all known deer farmers (those who receive the RIRDC deer industry newsletter) and a single large laminated poster for each species has been provided to each known processor. The Deer Industry Bookshop retains extra copies of the small and large charts for future dissemination.

Charts are available to industry on the RIRDC website (http://www.rirdc.gov.au).

Japanese Market Potential

From research into the existing venison market in Japan, it is likely that any increase in volume will be relatively slow unless combined with a concentrated effort in terms of promotion and public relations. There is certainly a growing interest in new products including new meats, particularly by mature, younger consumers. The young teenage market is heavily influenced by the American lifestyle image as featured in movies and shows a proliferation of American or American style fast food outlets. Diet and health concerns are already being expressed by authorities for this population group and it is not clear if the current teenagers will focus on a more healthy diet as they proceed into their twenties and beyond.

However, for the segment of the market interested in healthy foods, there is a realisation that the meats they consume will need to be lower in fat and cholesterol than the traditional highly marbled, fatty beef and pork. As the traditional diet was almost exclusively centred around seafood, small amounts of chicken and duck, and very small amounts of red meats, the emphasis was on flavour which was known to come from the fat. Modern Japanese are consuming much more red meat than before and are prepared to spend a greater percentage of their disposable income on food and dining out.

Promotion of venison as a commodity is unlikely to be successful in this market, and widespread promotion would be unrealistically expensive and likely to produce a situation of inability to supply. The Japanese food market is extremely sophisticated and manufacturing of added value and convenience products is advanced. This is also true of many prepared foods manufactured and supplied by countries such as Taiwan and Korea.

Linking with a food wholesaler already committed to promotion of ready prepared or semi-prepared foods as speciality items for the food service industry, would seem to be a suitable market entry strategy. It would also mean that initial volumes of venison required would be small. Although the Australian deer industry has been slow to develop such new products, it is possibly the only way to enter small volume but high value markets. Initial qualitative market research, probably using focus groups would need to be conducted in Japan with the assistance of an interested wholesaler. It is also possible that an exporter such as Tender Plus might be interested in new venison product development.

It is true that the costs associated with producing such high quality products would be high, but returns have the potential to be significant providing that launch strategies and a public relations campaign are combined with an effective promotional activity. To save on costs and maximize exposure, launch of the products could be timed to coincide with one of the major food trade fairs.

7. Recommendations

Food Service Guide Books

Project researchers still consider that a food service guidebook for users of venison has merit. It would be a useful marketing tool, particularly for introducing new chefs to venison, by providing information on its nutritive value and appropriate cooking methods for specific meat cuts. However, on going customer support needs to be provided in association with provision of the books, possibly in the form of seminars, workshops or demonstrations.

Venison Quality and Condition Scoring

The importance of body condition and body weight of deer processed for venison is clearly demonstrated by payments available to farmers for their livestock destined for processing. Research in New Zealand and other countries has demonstrated the importance of body condition and body weight on reproductive performance of farmed deer.

Farmers should be encouraged by industry extension programs to use the condition scoring charts to regularly assess body condition of animals in their care. Body condition scoring can be used as an aid to animal management programs (i.e. feeding requirements, health assessments) that encourages maximum reproductive performance and consistently high quality venison production.

Industry extension programs should encourage use of Body Condition Charts by deer farmers and venison processors. Farmer payments should be increasingly based on a price grid determined by factors including: age, sex, body weight and body condition score and processor payment should be increasingly based on objective measurement of those factors.

In this way body condition scoring will improve the quality and quality of venison available to Australia's domestic markets and subsequently provide a basis for increasing Australia's consumption of venison.

Trim and Co products

Although the interest in venison co products and velvet antler from Western cultures (particularly nutritional and health food supplement markets) continues to grow slowly, the basis of most demand for the products is from Asian people.

Australian Bureau of Statistics (ABS) reports show that in 1995/96, about 1.6 million overseas tourists visited Australia on packaged tours and of that number about 75% were of Asian origin. It is reasonable to estimate at least a similar number of similarly categorised tourists will visit Australia in 2000/2001. ABS data shows that the 1.2 million tourists of Asian origin that visited Australia during 1995/96 paid a total of $1.062 billion dollars for their tours (an average of about $860 per person).

These statistics suggest that the likely domestic market for venison co-products (and velvet antler) in Australia could be significant and at least is worthy of detailed objective assessment.

Investigation and development of markets based on Asian tourism may provide previously unachievable profits (from co product and value added sales) that can be passed directly back to all deer producers and only improve their returns. Niche domestic and international market development for deer co products and value added velvet antler products will give further confidence to a small but expanding number of producers whose product meets strict quality standards.

Cooperative consideration of market opportunities by a small number of dedicated venison and velvet antler processors and marketers should allow the aggregation of volumes of quality assured product that will attract interest from existing markets and provide a basis for the development of new niche markets.

Japanese Market

The implications of this research project have suggested some possible approaches to entering this market, and perhaps other low volume, high value markets or market niches. This could even extend to a certain section of the Australian domestic market, but this would be particularly small due to the small size of the total domestic market. It would not be justified to develop specific products for the domestic market, as they would almost certainly be unsuitable for the Japanese market, either in terms of flavour or texture.

Success in this market is likely to hinge on a good relationship with a Japanese wholesaler and / or an interested Australian exporter of other meats. Development of new venison products, particularly for this market, but also for any market needs to follow the classic product development pathway or flowchart used by food technology teams. This would be maximum effort and research expenditure in the early stages, before any decision to proceed to a prototype product is made. It is pointless making products because it is possible, unless there is demonstrated interest from the marketplace.

It is also likely to be a relatively long process to develop the market, as venison, along with other “new” meats is largely unfamiliar and some incentive to taste the meat is probably necessary.

8. Appendix

Copies of the Australian Venison Condition Scoring Charts are available from the Australian Deer Industry Bookshop or directly from RIRDC. The charts will be posted on the RIRDC web site for viewing interested people (http://www.rirdc.gov.au)

Japanese Market Entry Contacts

Tender Plus Japan Ltd. ; Managing Director: Hiroshi Odaka
Tel: 03- 5401-3431 Fax: 03- 5401-3434 Email: hiroshi@tenderplus.co.jp

Tender Plus Pty Ltd. ; Export Manager: Barry Knock
Tel: 07- 5568 8888 Fax: 07- 5568 8899 Email: barry@tenderplus.com.au

Import Promotion Department
Japan External Trade Organization (JETRO)
Level 19, Gateway, 1 Macquarie Place, Sydney NSW 2000
Tel: 02- 9241 1181 Fax: 02- 9251 7631

Shinpoh Foods Co. Ltd.
Tel: 03- 5763 2411 Fax: 03- 5763 2420
Email: aac02732@pop07.odn.ne.jp

Top Trading Co. Ltd
Tel: 03- 5821 1180 Fax: 03- 5821 1197

9. References

Audigé, L., Wilson P.R., and Morris R.S. (1988). A body condition score system and its use for farmed red deer hinds. NZ Journal of Agricultural Research, 1988, Vol. 41:545-553

Hansen A McKay B (RIRDC project OVH-1A – report in press)

Mulley R and Flesch R (RIRDC project USW-16A

Kobelke T. J. (1991). Changes in food intake, live weight and body composition as determined by computed tomography, of male fallow deer through the rut. B. Rur. Sc. Honours Thesis. Department of Animal Science, University of New England, Armidale, NSW.

Weber M and Thompson J.M. (1994). The effect of pregnancy on body composition in female deer. In: Proceedings of the International on the Biology of Deer. Edinburgh, (Abst) Department of Animal Science, University of New England, Armidale, NSW.

Jopson N.B., Thompson J.M. and Fennessy P.F. (1993). Body compositional changes during fasting periods in fallow deer bucks. In: Proceedings of the First World Forum on Fallow Deer Farming. *Mudgee* Australia, 10-13 March 1993. Australian Fallow Deer Society and New Zealand Fallow Deer Society.

Weber M. (1996). The effect of reproduction and nutrition on seasonal changes in feed intake, body weight and body composition in female fallow deer (*Dama dama*). 1996 Ph.D Thesis Department of Animal Science, University of New England, Armidale, NSW.

Drew K (2000). Personal communication.

JETRO Import Opportunity Data Division (1992). Feasibility study for Exporting to Japan. Market Survey on Horse, Lamb, Rabbit and Deer Meat.

JETRO Import Promotion Department. (1997). Marketing Series in Japan, *Access to the Japanese Market.* Game Meat Market Survey and Summary.

Okabe y, Watanabe A, Shingu H, Kushibiki S, Hodate K, Ishida M, Ikeda S, Takeda T. (1998) Effects of Alpha-Tocopherol Concentration on Lipid Peroxidation and Volatiles in Raw Venison During Storage.