

Venison Supply Systems

'research for a profitable and sustainable industry'

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Outline



- Research Programme Outcome
- VSS Structure
- Alignment to Industry Strategy
- Subjective Target Map
- VSS Milestones
- Progress to date (by Objective)
- Emerging Issues
- Upcoming Milestones



Photo courtesy of
Chris Parkinson

Research Programme Outcome

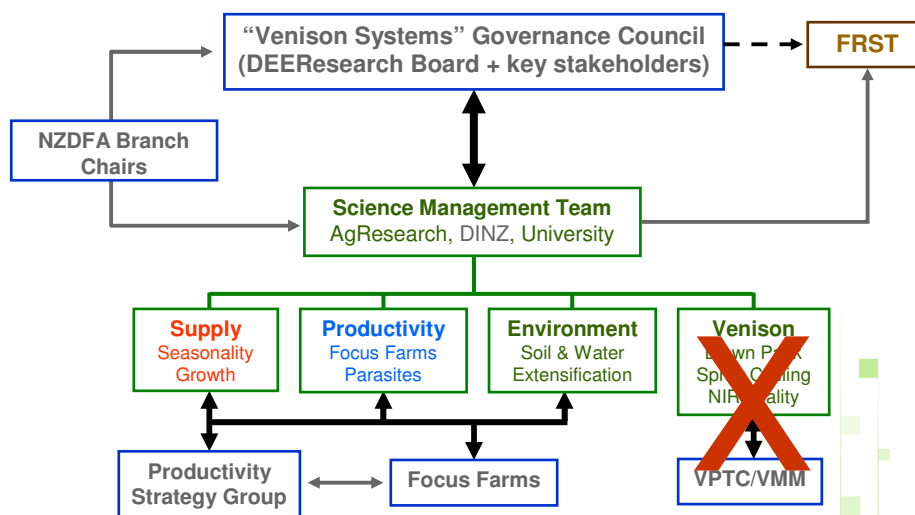


Improve the **biological** and **economic** efficiency of the venison industry, thereby enhancing long-term financial and environmental sustainability.

...enabling the venison industry to:

- Shift the balance of venison supply between August and December to better match supply with market demand.
- Increase on-farm productivity by 1% per annum through technology implementation and better management of parasites.
- Sustainably manage venison production on extensive systems, thus increasing options for profitably farming lower production rangelands.

VSS Structure



Alignment to Industry Strategy



Productivity Strategy Objectives

Improve fawning percentage from an estimated national average 80% to 90% by 2012

Improve national average weaning weight of mixed sex weaners to 70 kg from 47 kg by 2012

Science Tool/Project

- Hind development/metabolism
- Genetics
- Parasitology
- Feed management *

- Rumen development
- Early calving genetics
- Parasitology
- Feed management *

- * Diet choice in extensive systems
- Deer use of extensive systems
- Antlerless venison

VSS Objective Outcomes

Objective 2: Increase on-farm productivity by 1% per annum

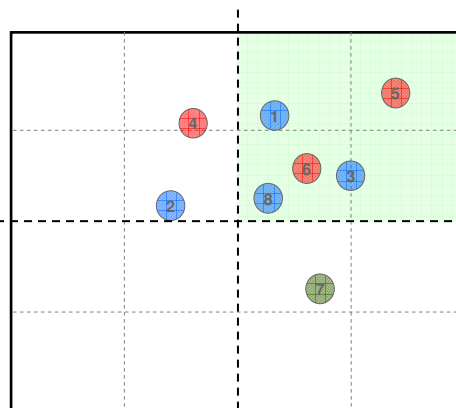
Objective 1: Shift the balance of venison supply between August and December

Objective 3: Sustainably manage venison production on extensive systems

Subjective Target Map



Value to Industry/Farmer



Probability of Success

VSS Targets

1	Early calving
2	Early growth gain
3	Increased live weight
4	Parasite control
5	Increased fawning
6	Focus farm uptake
7	Sustainable extensive systems
8	Antlerless venison

VSS Milestones



Objective	Sub-obj	FRST Milestone	Landcorp		DEERresearch Milestone	DEERresearch \$	2007/08			2008/09			2009/10			2010/11			2011/12			2012/13		
			\$	\$			Oct	Jan	Apr	Jul	Aug	Oct	Nov	Dec	Jan	Mar	Apr	Jun	Jul	Oct	Jan	Apr	Jul	Oct
1. Venison market supply systems																								
	Overcoming seasonal constraints		\$223,200	\$100,000		\$162,000																		
	1.1 Resource population established				1.1.1 Oestrus cycling	\$52,000																		
	1.1.2 Quantitative genetic of conception date				1.1.2 Early Breeding Date	\$102,000																		
	1.1.3 DNA tests for conception date																							
	1.1.10 Red deer hind metabolism and fetal growth																							
	1.1.11 Improved antler/ear performance of young red deer hinds																							
	Rumen development and growth performance																							
	1.1.4 Rumen development described																							
	1.1.5 Factors influencing rumen development																							
	1.1.6 Impact of rumen development on growth																							
	Antibody and growth in venison systems																							
	1.1.7 Immunological control of antler development																							
	1.1.8 Determine impact of anti-GHIF on pasture formation																							
	1.1.9 Genetics of pasture rotation																							
2. Enhanced on farm productivity from venison systems																								
	Focus farms		\$215,000		2.1.1 Focus Farms	\$102,000																		
	2.1.1 Focus farms established																							
	2.1.2 Practice change on focus farms																							
	2.1.3 Assessment of practice change																							
	2.1.4 Focus farms established - round 2																							
	2.1.5 Practice change on focus farms - round 2																							
	2.1.6 Assessment of practice change - round 2																							
	Parasitology				2.2.1 Parasites	\$70,000																		
	2.2.1 Diagnose and pathogenicity of parasitism in deer																							
	2.2.2 Which parasite species infect red deer?																							
	2.2.3 Drench resistance within NZ deer herds																							
	2.2.4 Antiparasitic activity of native plants																							
	2.2.5 Genetic susceptibility of deer to parasites																							
	2.2.6 Cross infection between co-grazed pastures																							
	2.2.7. Inoculation trials for management of deer parasites																							
	2.2.8. Assessing parasite infectivity of deer pastures																							
3. Environmentally responsible venison systems																								
	On-farm mitigation of key water-borne contaminants		\$197,000			\$90,000																		
	3.1.1 Urine sensor and fecal distribution tools for red deer																							
	3.1.2 Spatial distribution of ruminant excretory products																							
	Extensive systems				3.2.1 Extensive Systems	\$90,000																		
	3.2.1 Mapping extensive deer systems																							
	3.2.4 Animal and plant production on extensive deer farms																							
	3.2.5 How do deer use extensive habitats?																							
	3.2.6 Doe choice of red deer																							
	3.2.7 Managing on-farm extensive systems																							
	3.2.8. Managing extensive systems																							
			\$1,323,333	\$100,000		\$400,000																		

Progress to Date: Objective 1 Venison market supply systems



- Overcoming constraints on seasonal reproduction to enable deer to calve 1 month earlier
- Maximise growth performance in the first six months of life
- Provide tools that reduce management costs (e.g. antler removal prior to slaughter)



Progress to Date: Objective 1 Venison market supply systems



Overcoming constraints on seasonal reproduction

- Study on oestrous cyclicity of red deer genotypes is nearing completion. Reporting by 30 March 2009.
- DEERSelect module written to enable calculation of conception date BVs in industry herds.
- 700/2100 yearling hinds treated with melatonin implants Dec/Jan to assess potential effects on enhancing pregnancy rates in R2 hinds. Scan in May.
- Trial on hind voluntary food intake and foetal development on-track to start in late February.

Progress to Date: Objective 1 Venison market supply systems (cont'd)



Maximise growth performance in the first six months of life

- New trial started in December 2008, due for completion in March 2009.
- Cristina Vanstone (Honours Student) from Adelaide University will complete a dissertation on the study.
- Nonja Remijn (Agricultural Intern Student) from Wageningen University (Holland) is also doing a project from the study.

Progress to Date: Objective 1 Venison market supply systems



Provide tools that reduce management costs

- Anti-GnRH vaccine (Bopriva) is immunogenic in red deer but multiple boosters are necessary. Immune response is analogous to 'temporary' physical castration (i.e. pedicle ablation/retardation and growth depression).
- Liquid N₂ treatment of pedicle buds showed high efficacy, low cost and high ethical acceptability (full reporting at next Board meeting).
- First year of monitoring liveweight and pedicle development of stags on Landcorp stud herds completed.

Progress to Date: Objective 2 Enhance on-farm productivity



- Improved technology implementation via Focus Farms
- Mitigating production losses through parasitism



Progress to Date: Objective 2 Enhance on-farm productivity



Improved technology implementation via Focus Farms

- Project is progressing well and is on-track.
- Newsletters and field days are on schedule.
- Increased input from VSS team has been a positive outcome of the FF Workshop held at Invermay in September 2008.

Mitigating production losses through parasitism

- On-going issues with obtaining a PhD student
- Project milestones are on track but requires greater direct staff input from Massey University.
- 2009/10 project has been contracted and is underway.

Progress to Date: Objective 3 Environment



- Production benefits vs costs of farming deer in extensive environments



Progress to Date: Objective 3 Environment



Production benefits vs costs of farming deer in extensive environments

- Dr Wendy Griffiths resigned 19 December, project now led by Geoff Asher.
- Analysis of GPS data from Haycocks Station is nearing completion (full reporting at next Board meeting).
- Complex mathematics/statistics required for the unique data sets (e.g. estimation of calving time and site).
- Analysis of WhiteRock Station data will be much easier because of the new algorithms.
- Interview survey of 20 high-country deer farms has been conducted by Dr Sue Peoples; high level of enthusiasm shown by the farmers (full reporting at next Board meeting).

Emerging Issues



- New scientist position advertised (replacement for Wendy Griffiths)
 - Closing date 30 January
 - Deer, sheep, beef and dairy systems
- PhD Student for parasitology studies proving to be elusive and evasive
 - DEERresearch should perhaps consider a scholarship for parasitology
 - Competing against other scholarships
- Meeting with Massey people in early February
 - To keep the parasite work on-track

Upcoming Milestones

- Final reporting 30 March 2009
 - (1) Oestrous cyclicity (Asher)
 - (2) Liquid N₂ inhibition of pedicle/antler
 - (3) GPS study of calving hinds on Haycocks Station (Asher)
 - (4) Survey of high-country deer farming productivity and issues (Peoples)