



DEER INDUSTRY NEW ZEALAND

MENDIP HILLS LIMITED FARM FOCUS DAY

19th February 2009

*MENDIP HILLS
Leader Road
Parnassus*

Bring own lunch, morning and afternoon tea - tea & coffee provided

4 Wheel Drives Please

Programme

10.30am Assemble and bring lunch to have at first stop

11.00 am – 11.15am

Welcome & Introductions

Mark Shadbolt - Chairman
Simon & Meisha Lee – Farm managers
Peter Bradley – Facilitator

12.00 noon – 2.00pm

Farm Tour

Tin Hut & Conway (working lunch)

- Overview of property
- Development
- Deer block
- Management update
- Overview Soil Structure
- John's results
- Genetic workshop

Simon Lee/Peter Bradley

Trevor Webb – Soil Scientist Landcare Research
Ian Page – North Canterbury Vet Clinic Ltd
Dr Jason Archer – Ag Research
Tony Pearce - DINZ

2.30pm

Woolshed Discussion:

- Breeding Values
- Hind Efficiency
- Genetic Workshop

Jake Chardon – Deer Improvement
Dr Alastair Nicol – Lincoln University
Dr Jason Archer – Ag Research
Tony Pearce – DINZ

Panel Discussion

4.00pm

Closing comments

Tony Pearce – DINZ

Informal BBQ – Sponsored by Mountain River Processors

Refreshments sponsored by Luisetti Seeds, Canterbury Branch Deer Farmers Assn. & CRT

*In the spirit of the OCCUPATION, HEALTH AND SAFETY ACT the Owners have taken all reasonable care in making your visit to the property as safe as possible, they clearly point out, you enter the property at your own risk.
The Owners will accept no responsibility for any incident or injury to any person or property that takes place while you are visiting the property.*

*Mendip Hills Ltd
Peter Bradley*

1.0. PROPERTY DETAILS

- 1.1 Area:** Mendip Hills 6,132 ha Total 5,232 ha Effective
- 1.2 Labour:** Simon & Meisha plus 5 staff
- 1.3 Rainfall:** Varied
Range between 850 mm – 1,050mm
- 1.4 History:** Land owned by the Black family since 1954. Currently, under the stewardship of Bryden Black. Simon and Meisha took over as manager's of Mendip Hills in 2007.

Mendip Hills is currently being farmed in conjunction with 150 ha finishing property in Mid Canterbury of which 140 ha is irrigated.

1.5 Areas:

Home Flats 320 ha
60 ha deer fenced
Weaner Hinds from weaning
R2 Hinds to after scanning

160 ha non deer fenced
Finishing cattle
Making supplements
This year also for lamb finishing

Lower Hill 495ha
12 paddocks sheep and cattle
Summer dry lighter soil
90 ha of kale for wintering cattle

Hill Deer Block 495 ha
3 blocks for MA breeding Hinds
1 small block plus 3 holding paddocks

Birchdale 414 ha
24 paddocks sheep and cattle

Le Crens 414 ha
2 blocks: sheep and cattle

Leader 541ha
16 paddocks
This year summer Brassica sown
Used to finish lambs

Limestone 710 ha
3 blocks: sheep and cattle

Gilt 865 ha
20 ha Flats
8 blocks: sheep and cattle

Conway 795 ha
11 blocks: sheep and cattle

Mountain 1187 ha
6 blocks Tussock
Summer grazing ewes
Autumn grazing breeding cows

1.6 This years re-grassing and winter feed program.

Spring

Kale	90ha	Lower Hill/Home Flats
Turnips	100ha	Home Flats/Leader
Summer Rape	42ha	Lower Hill/Home Flat
New grass	23ha	Mailbox and bottom deer block

Autumn

Turnips	100ha	Top Percy's, (native), Kowhai Flat (manuka)
		Scottys (kale) and Mid Hill (kale)
New Grass	58ha	Leader, Lower Hill/Home Flats

Lime applied pre development.

All brassicas crops sown with 300kg/ha Serpentine Super.

All new grass paddocks sown down with 400kg/ha Super.

100kg/ha of Urea used on Kale crops.

Paddocks coming out of native are usually disced in the autumn and winter fallowed.

1.7 Stock Water

Own system and Waiiau/ Cheviot county scheme

Natural springs and creeks.

Stock water has been under pressure this summer especially within the Hill Deer Unit. A new stock water system for this area is being investigated.

1.8 Soil Tests:

MENDIP HILLS								
Name	Test Date	pH	Olsen P	K	S	Mg	Ca	Na
Lower Hill								
Tonk B14	10.09.07	5.8	23	14	9	52	8	9
Mid Hill	10.09.07	5.5	15	12	10	39	5	5
Cocksfoot	13.10.07	6.1	20	22	18	10	9	9
Top Hocks	10.07.07	5.2	18	8	9	39	5	
Heather	10.07.07	5.1	22	6	14	48	6	
Conway								
Tin Hut	10.09.07	6.0	19	41	17	39	14	6
Leader								
Island	11.10.06	5.6	11	6	6	30	5	4
Woodchester	11.10.06	5.7	14	14	6	17	7	3
Gardens	11.10.06	5.9	25	27	9	23	9	3
FirstMedM6	11.06.06	6.0	12	2	7	27	8	7
Flat Deer Paddock								
18 acre	22.09.06	6.1	25	2	6	16	13	6
Yard House	22.09.06	6.1	37	7	8	28	13	8
Chrisy	22.09.06	6.1	23	3	10	23	13	10
Mailbox	11.10.06	5.7	18	6	6	20	8	6
Hind Block								
Optimise Trial								
South East		5.3	14	8	4	36	5	3
North East		5.4	15	7	5	31	4	3
South East		5.3	17	7	7	22	4	2
North East		5.6	13	8	5	18	4	3

Deer Hill Block Development

	pH	P	Mg	K	Na	S	P Retention	A1
Airstrip	5.4	7	28	5	6	4	20	3.8
Road Block	5.6	2	27	4	8	2	17	2.4

2.0. HISTORIC AND TARGET STOCK NUMBERS & STOCK UNITS

	2006/07 1 st July	2007/08 1 st July	2008/09 1 ST July	2008/09 19 th Feb	Target Numbers in 3 years
DEER					
MA Hinds	1,000	1,173	1,172	1,050	1,500
R2 Hinds	173	268	200	96	200
R1 Hinds	280	293	342	303	350
Herd Sire					
Red Stags	45	47	24	18	70
Wapiti Stag	10	8	8	8	8
Terminal Stag				7	20
DEER STOCK UNITS	2,971	3,682	3,390	2,851	4,050
<i>Percentage of Total Stock Units</i>	<i>11%</i>	<i>20%</i>	<i>21%</i>	<i>9%</i>	<i>27%</i>
SHEEP					
MA Ewes (Corriedale)	8,800	8,800	8,564	8,198	8,800
2 tooth Ewes					
Corriedale	2,700	2,100	2,150	1,500	
Corriedale/Romney		600	600	1,350	2,000
Ewe Hoggets					
Corriedale	4,100	3,200	3,150	2,000	
Corriedale/Romney	600	1,000	1,000	2,420	2,400
Finishing Lambs			800	580	400
Killers	70	70	70	40	70
Rams	123	125	125	90	125
SHEEP STOCK UNITS	15,453	15,055	15,855	15,468	16,550
<i>Percentage of Total Stock Units</i>	<i>50%</i>	<i>51%</i>	<i>52%</i>	<i>55%</i>	<i>50%</i>
CATTLE COMMERCIAL					
MA Cows + R3 Heifers	840	840	915	864	900
R2 Heifers Replacements	264	275	300	283	220
R2 Heifers Fattening			90	28	190
R1 Heifers	370	367	368	360	387
R1 Steers	340	360	368	367	387
R2 Steers	350	340	357		372
Breeding Bulls	30	29	29	35	29
Grazier – R2 Steers			116		150
CATTLE STUD					
MA Cows	45	44	44		44
R3 Heifers	20	18	18	24	18
R2 Heifers	20	9	9	7	9
R1 Heifers	20	20	26	20	6
R1/R2 Bulls	22	18	14		14
Stud Bulls	2	2	2	2	2
CATTLE STOCK UNITS	11,918	10,296	11,466	10,193	12,445
<i>Percentage of Total Stock Units</i>	<i>39%</i>	<i>29%</i>	<i>37%</i>	<i>36%</i>	<i>37%</i>
TOTAL STOCK UNITS	30,342	29,033	30,711	28,152	33,051

3.0 DEER POLICY AND PERFORMANCE

2006/07	438	MA Hinds	-	Wapiti Stag
	562	MA Hinds	-	Red Stag
	200	R2 Hinds		Red Spikers
2007/08	398	MA Hinds		Wapiti Stag
	775	MA Hinds		Red Stag
	270	R2 Hinds		Red Spikers
2008/09	303	R2 Hinds	95	R3 Hinds
	298	R4 & R5 Hinds	727	Ma Hinds

- Wean late March.
- All Weaner Stags and surplus Weaner Hinds sold to finishing property on truck weight.
- Replacement Weaner Hinds go down to flats and stay there.
- In calf R2 Hinds return to the hill after scanning. October this year.
- Empty and surplus in calf R2 Hinds to be sold.

3.1 Deer Policy

a) Breeding Objectives and Performance.

- Grow Hind numbers to 2,000 Hinds as development allows.
- Focusing genetics on growth rates and Hind efficiency.
- Maximise number of Hinds to a suitable terminal sire.
- Lift fawning percentage.
- Increase weaning weight.

3.2 Johne's Disease Antibody Blood-test Results to Date:

Date	Class	Test Positive Prevalence
July 08: sample testing	Older MA hinds 1:17 tested	7%
Oct 08: age group tested	R2yr hinds ('07 born)	50%
Nov 08: sire group	MA stags	10%
Jan 09: age group tested	yearling hinds ('08 born)	20%

The 303 yearling hinds currently on-farm were blood tested for Johne's Disease on 28.01.09

Results:

Negative = 240

Suspect = 3

Positive = 60

Total = 303

20% Prevalence

Deer Research Laboratory Report: Recommendations

“Samples from 14-mth female hinds were received in the DRL for Paralisa testing on 29 Jan 2009. Of the 303 samples received 60 tested Positive & 3 tested Suspect (20.7%) - (last year's R2 tested in September were approx 50% positive). The standard recommendation from the Deer Research Laboratory (DRL) is to cull the positive and suspect animals now before mating to minimize risk to the rest of the group and to maximize feed utilization from now until the next selection process, pregnancy scanning. Any attempt to salvage animals by running separately involves continuing risk of infection and potential stock losses which might be acceptable depending on the long term aim for the property. If the aim is to minimize the effect of Johne's disease on the property then we would not encourage salvage of test-positive animals as a preferred strategy. Based on the high test rate last year and DRL's experience from other herds testing younger animals (8-14months) we would also like to retest this group before fawning (ideally early Sep, so the option to cull in-fawn hinds is still available).

In summary we recommend the immediate slaughter of all test positive/suspect animals as:

- the venison schedule is relatively high (45-50 kg @ \$7.50) = \$340 approx.
- this will reduce ongoing environmental risk from animals which may become high shedders (5,000, to 1,000,000 MAP organisms /g faeces).
- better feed utilization for residual stock by elective removal of 63 reactor animals (10th Feb-30th Aug. = 201 days) that are the least likely to be productive and most likely to produce a higher proportion of clinical disease cases.
- these infected hinds will most likely produce infected off-spring.

Future Action Recommended:

- Blood test 2005-06 born hinds to determine the prevalence of the disease in this age group of Mendip-born hinds pre mating.

Frank Griffin and Simon Ligget

4.0. SHEEP POLICY

- Base flock Corriedale ewes
- Romney genetics now being used
- Past sold most of the lambs store

4.1 Animal Health

- All Ewes pre-tup get Iodine and Selenium
- 2 tooth ewes and lighter ewes drenched pre-tup
- 2 tooth ewes Toxo
- MA ewes and 2 tooth ewes Campo
- Pre Lamb all ewes Oral Drench, 5 in 1 and Iodine
- Lambs FEC and strategically drenched

4.2 Scanning Results

	2008	2007
Terminal Ewes	147%	147%
MA Ewes	151%	148%
4 th Ewes	145%	128%
2th Ewes	134%	110%

4.3 Lambing Percentage

Total Lambs	12,342
Lambing % through tailing pen	121%
Lambing % to Ram	109%

4.4 Lamb Sales to Date

Killed off mothers	1,600	@	16kgCW	\$74.00
Stores to Finishing farm	3,100	@	27.5kgLW	\$52.25
Lamb Plan	1,709	@	27.0kgLW	\$56.70
Lambs to go this week	933			

5.0. CATTLE POLICY

- Hereford herd
- Small Hereford stud, however some Angus bulls are purchased
- Calf as 3 year old
- All weaners retained

5.1 Animal Health

MA Cow

- Poupon for lice late Autumn
- Long acting Selco pre calving

R3 Heifers

- Copper and Selenium Autumn
- Poupon worm drench pre calving

Other young cattle

- Copper, Selenium, B12 and drenched strategically.
- BVD vaccinating program of 1st and 2nd calvers has been undertaken.

5.2 Pregnancy Testing Results

MA Cow 9% dry
R3 Heifer 5.5% dry

5.3 Simon is currently still calf marking. Actual numbers will be reported on the day

6.0. DEVELOPMENT

Mendip's objective is to continue to clear regrowth scrub.

Two areas are currently being developed, one mechanically and the other spray/oversow.

Mechanically

Kowhai Flat

20 ha cleared followed and sown in turnips.

Spring Oversow

Road Block

70ha - 5 ha clear
 - 50 ha regrowth Manuka sprayed with Metsulphron
 - 15 ha bush (to be retained)

7.0. DROUGHT STRATAGY

Not making a decision is the decision to do nothing.

Specifically re feeding and water requirements.

Lactating hinds need 4.5 to 7 litres of water per kg of dry matter eaten (with mean daily temps ranging from 20 to 30 degrees C). Considering they are eating (or have the potential to eat) 4 to 5 kg DM/d then they need 18 to 35 l/d. Now some of that may come from the grass. If the grass isn't completely dead then the dry matter content is likely to be around 50%, so they will get 8 to 10 l water from the diet. Leaving them potentially 8 to 25 l short, which they need to get from a water source.

If they are weaned then they only need 2.5 to 5 l per kg DM eaten, and they will only need 2 kg DM so their requirement becomes 5 to 10 l/d, and with 50% DM in the grass then they need 2.5 to 7.5 l/d from a water source.

Feed wise the hind will either need 30 to 40 MJME/d at this time of the year or use her body reserves to meet the demands of the calf. With say 900 kg DM/ha on offer then the hind may be able to eat 3 kg DM/d at 9 MJME/kg leaving her 3-13 MJME short. If she uses body reserves (if she has any left) then she might recover 20 MJ/kg of liveweight lost, so might be expected to lose up to .15 to .65 kg/d. This will mean a loss of 1 BCS in 15 to 30 days.

This leaves the calf's intake, that should be 1 to 1.5 kg DM/d. The calf will reduce that depending on the milk supply of the hind and it could be as low as 0.5 kg DM/d. That does two things. It puts the demand back onto the hind, making sure she loses weight at the 15 day rate, and lowers the performance of the calf, down towards the 200 g/d growth rate.

So in a drought we get intake reducing to between 3.5 and 4 kg DM/d/hind calf pair, hinds losing BCS at around 1 CS per 15-20 days, and calves growing at 200-250 g/d, and so weaning at low weights. Weaning

If we wean then the overall intake requirement does not change much, as we still need 2 kg DM/d for the hind, and 1.5 kg DM/d for the calf. But we stop the decline in BCS, we increase the gain on the calf, back towards 300-350 g/d, and we have more control of the use of different types of feed. So the hind can go onto relatively low quality rations, while the calf can get the higher quality rations, or can be moved off the property.

This means that weaning is really important, not just to conserve feed but also to conserve water. This combination is why weaning seems to do much greater things than we expect.

Overall a little extra work is well worthwhile. It not only works out better for the animals but also gives the staff something to do that is positive. It also saves on feed in the autumn, when the 1 kg live weight lost takes 5 kg grass to regain. So a loss of 10 kg needs 50 kg pasture to recover which is 25% of a hinds winter maintenance requirements.

Options

- Wean pre Rut
- Feed Supplements
- Use Nitrogen

*David Stevens
Ag Research*

Silage Feeding

	Per hour	Per TDM	
1 hour to feed 1.5 TDM			
Tractor Depreciation	15	10	
Tractor Fuel	24	16	
Wages	15	10	
Tractor R&M	10	7	
Wagon Depreciation		12	- 12 years, \$50,000. Feeding 360 TDM / year
Wagon R&M	4	3	- \$1,500 / year, 360 TDM / year
Interest tractor - none	0	0	-\$75,000 tractor @ 8.5 %
Interest Wagon	11	7	-\$50,000 wagon @ 8.5 %
TOTAL	79	64.7	
		6.5	Cents per kgDM
		4.4	Cents per kgDM

PKE Feeding

	Per hour	Per TDM	
1 hour to feed 1.6 TDM			
Tractor Depreciation	15	9	
Tractor Fuel	16	10	
Wages	15	9	
Tractor R&M	10	6	
Tractor Depreciation		2	- 12 years, \$5,000. Feeding 180 TDM / year
Interest Wagon		5	-\$10,000 trailers+storage @ 8.5 %
TOTAL	56	42.0	
		4.2	Cents per kgDM

8.0. GENETIC WORKSHOP

Mendip Hills breeding program

Aims:

1. To increase the growth rates of weaners
2. To have a healthy herd with Johne's disease well controlled.
3. To have a highly productive hind herd in the future, with a good genetic base producing good weaners.
4. To maximise the return on investment in genetics and Johne's testing.
5. To demonstrate the impact of high BV sires

Note: Aims 1 to 4 are core farm aims (ie are goals which would be set regardless of the focus farm program), number 5 is a suggestion and specifically to contribute to the focus farm program as a practical demonstration.

What do we have to work with?

Hill Deer Block 495 ha
4 blocks for MA breeding Hinds
plus 3 holding paddocks.

2008/2009 Hinds set stocked
421 Ma hinds Middle Hill (red stag)
306 older hinds Swamp Block (wapiti stags)
298 2nd and 3rd calvers Hides (red stags)
96 1st calvers Airstrip (red spikers)

Home Flats 60 ha deer fenced
Weaner hinds from weaning
R2 hinds to after scanning
Last year wintered 325 weaner 270 R2yr hinds and 28 Stags

Current Situation

Hind age	Number	JD tested negative	Incidence of JD
Yearling (R2)	303	240	63
First calvers	96	96	
Second and Third calvers	298		
Ma hinds	421		
Older hinds	306		

Stags on Hand

Red Stags 15 Ma stags
3 2yr stags

Wapiti 7 Ma stags
1 2yr stags

B11 7 3yr stags

PARALISA RESULTS -----											
Tag No	Paralisa	Johnin	PPA	Herd of Origin	Mouth Status	W12 BV	Breed Composition ex DEERSelect				
Red Stags											
275/05	NEG	26	28	G. Gill, Southland	good mouth	Tb reactor					
2384/02	NEG	0	11	Remarkables	Low mouth	-0.8	Danish 25% Unknown 28.125% European 46.875%				
2334/02	SUS	16	40	Remarkables	Good mouth	-1.4	European 46.875% Unknown 53.125				
693/01	NEG	0	9	Peel Forest	No teeth	+1.3	Yugoslavian 12.5% German 37.5% Furzeland 50%				
839	NEG	38	12	J. Bates, Cant. Imported Red	Low mouth	Tb reactor	+6.8	If born in : Unknown 3.125% Romanian 37.5% Eastern 59.375%			
2276/02	NEG	2	8	Remarkables	Good mouth	-1.4	Unknown 50% European 50%				
01/111	NEG	0	0	No herd tag	No teeth						
432/02	NEG	21	19	Peel Forest	Good mouth	+4.8	Unknown 25% Woburn 25% Romanian 50%				
44yellow	NEG	0	10	Arawata Deer Farm	Good Mouth		cant identify as no birth year information				
04 -4077	NEG	0	0	Remarkables	Low mouth		Not on database				
343/02	NEG	9	30	Foveran	Low mouth	+8.7	German 12.5% NZ Red 25% Warnham 25% Unknown 37.5%				
382/05		0	12	Black Forest	Good mouth	+11.8	Romanian 25% Eastern 31.5% Unknown 43.75%				
03 / 3040	NEG	0	0	Remarkables	Low mouth	+3.3	Unknown 25% Composite 25% European 50%				
05/477	NEG	24	29	Black Forest	good mouth	+11.6	Eastern 37.5% Unknown 62.5%				
02/ 2281	NEG	3	16	Remarkables	low mouth	+0.0	Unknown 100%				
2706/01	NEG	26	22	Foveran	Low mouth	+3.4	German 37.5% Unknown 62.5%				
114/04	NEG	12	15	Arawata Deer Farm	Good mouth	+12.1	NZ Red 1.5625% English 3.125% Woburn 4.6875% Unknown 92.1875%				
654/05	NEG	17	28	Mendip Hills	Good mouth						
Terminal Sires											
112	NEG	0	13	Hillcrest Wapiti Park	Low mouth						
17-04	NEG	0	7	Carran Farms, Te anau	Good mouth						
03 / 91	NEG	0	5	Bayview, Marlborough	Low mouth						
03 -53	NEG	15	21	Merryland Deer. (R. Gibson)	Low mouth	Tb reactor					
99/38	NEG	0	0	Lloyd Knowles, Southland	Low mouth	blind 1 eye					
04/106	NEG	4	34	Merryland Deer. (R. Gibson)	good mouth	Blue 15					
01/446	NEG	3	19	Ken Heckler, Kaiapoi	Low mouth						
107	POS	15	62	N/K disbanded herd number	low mouth	elk-type					
157/04	POS	64	90	Merryland Deer. (R. Gibson)	Good mouth						
48/99	NEG	13	33	Lloyd Knowles, Southland	Low mouth						
New Stags											
05009				Peel Forest		+15.4	NZ Red 6.25% Unknown 12.5% German 18.75% Romanian 25% Eastern 37.5%				
6065				Remarkables Park		+14.1	If 65/06	English 12.5% NZ Red 25.56% Unknown 25.56% Eastern 34.375%			
547				Doncaster Deer		+15.0	If 06547	Eastern 43.75% NZ Red 56.25%			

Workshop Question

What should our plan be for this year to achieve our aims?

- *Where to invest in Johnne's testing?*
- *What stags should be used over what hind groups?*

Breeding Objectives:

- *Who in group has them (written down?)*
- *What are they?*
- *Do you agree with Mendips objectives?*
- *If not then what should they be?*

Replacement hinds of what quality and quantity should be Mendips aim?

- *Taking into account efficiency and constitution*

How quickly do you want to get to ideal type hind?

- *What Stags will allow you to get to that objective?*

In groups of 8-10, develop a plan, write it on paper and be prepared to present it when we get back to the woolshed. Think about a range of options available (eg. use of DNA parentage, additional JD testing, AI if appropriate).

At the woolshed, we will discuss the suggestions and also present what the genetics sub-committee has suggested. The genetics committee's plan may be modified to incorporate useful suggestions received from this workshop.

DINZ Focus Farms are funded by Deer Industry New Zealand, New Zealand Deer Farmers Association, Ag Research and Deer Research.

The Focus Farm would also like to thank the following contributors to this field day.

Speakers

Dr Jason Archer	Ag Research
Jake Chardon	Deer Improvement
Dr Alastair Nicol	Lincoln University
Trevor Webb	Landcare Research
Ian Page	North Canterbury Vet Clinic Ltd
Tony Pearce	DINZ

Sponsors

Mountain River Processors
Canterbury NZDFA Branch
CRT Ltd
Luisetti Seeds

We also thank the following organizations and individuals for their support and contribution during our first year of Focus Farm.

Ballance	Jeff Morton
North Canterbury Vet Clinic Ltd	Ian Page
DINZ	Tony Pearce
Environment Canterbury	Phill McGuigan.