Deer Industry News

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Growing a good crop
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Deer Industry News

OFFICIAL MAGAZINE OF DEER INDUSTRY NEW ZEALAND AND THE NEW ZEALAND DEER FARMERS' ASSOCIATION

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Contents

Cover: Velvetting stags at the Gaddums' Tuapae block. See Hawke's Bay Originals tour feature, p14. Photo: Phil Stewart.

Maintaining our social licence

When things are going pretty well in the industry, one cannot help but consider the possible problems that could bite us on the backside.

Ian Walker.

THERE ARE UNCONTROLLABLE risks, like natural disasters or weather events – you just have to do your best to be prepared for them. There are also controllable risks – and the one that exercises my mind the most is the risk of some event or series of events doing real damage to the industry's reputation.

This industry's leaders have been so proactive, and everyone in the industry has worked hard over its 40-odd years to build and maintain a great reputation for animal welfare and for environmental stewardship. But all that work could easily be undone by one or two instances of poor performance.

If an industry loses its good reputation, it's at risk of losing its "social licence". What does that mean? Well, if the society that we operate within doesn't believe that an industry or activity is valuable or acceptable anymore, life will start to get tough for that industry. Think about water bottling or battery chicken farming or oil drilling. Society (led by activists, followed by voters and politicians) has determined that it doesn't like those things and they are all now under intense media and regulatory pressure.

Industries that have lost their social licence have not properly grasped the rate at which society's expectations of them were changing and increasing. And they've thought that those increased expectations were not fair, because:

- "they're not considering our contribution to the economy..."
- "they're only looking at the poor-performing operators – most of us are good..."
- "they don't recognise how hard we work..."
- "they don't understand how much it would cost us to change..."
- "other people do things that are as bad as or worse than what we do..."

Well, as my mother used to say, "tough bikkies – life's not fair".

All those arguments may be true, but none of them save an industry's social licence.

So what can you do?

What I expect this industry to do is keep up its amazing tradition of staying ahead of the game. Continue to be sensitive about society's expectations – whether they're fair or not – and be proactive about staying ahead of them.

We know that New Zealand society cares deeply about cruelty to animals. We need to continue to be ahead of the game on the animal welfare standards that we set for ourselves, and have 100 percent compliance with them. We need to act like there is always someone watching when we work with our deer or other animals – and with today's technology, there easily could be.

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EDITOR Phil Stewart, Words & Pictures

EDITORIAL AND ADVERTISING ENQUIRIES
Words & Pictures, 11/94 Dixon Street, Wellington,
Ph 04 384 4688, 021 620 399,
email phil@wordpict.co.nz

CIRCULATION ENQUIRIES
Deer Industry New Zealand, PO Box 10-702, Wellington, Ph 04 471 6114, email info@deernz.org

Bright prospects for dark-facing Ben Dhu

Using breeding values to drive genetic gain and profitability was a big discussion topic at the Mackenzie Advance Party's P2P Regional Workshop at Ben Dhu Station on 26 October.

HAVING INVESTED MUCH time and money in genetics and DNA parentage recording to improve deer performance, particularly velvet production, over the past two years, the topic is close to the hearts of Ben Dhu's owners, Hamish and Pip Smith.

Hamish and Pip Smith – a big investment in genetics.

Ben Dhu, 16km northwest of Omarama, is a 3,500-hectare high country property running 5,000 merinos, 835 deer and 240 cattle. It's a dryland system that has a mix of developed and semi-developed lower-lying heavy country, with tussock and matagouri on the oversown and topdressed undeveloped hill country. The property ranges from 550–1400m and is dark facing – Ben Dhu is Gaelic for dark hills. This means growth is slow to fire in spring but, on the flipside, hangs on well during the dry summers. However it was a "brittle" environment that required a flexible management approach to cope with the environmental extremes.

"It's looking good at moment but we can often be prone to a slow spring because of cold westerly winds from the Ohau range. It holds the property back, but it holds on well in dry summers," Hamish said.

The property was split off from the Benmore Run in 1916 and from 1934 until 2006, when the Smiths took ownership, was farmed by the Ross family. When the Smiths arrived, Ben Dhu was a merino-based extensive and semi-developed system that 12 years later comprised 2,100ha of oversown/top-dressed sheep and cattle blocks, 580ha of oversown/top-dressed deer blocks, and 400ha of lucerne mix pastures.

They inherited the elk-cross deer herd that Don Ross had developed since the early 1980s. The bread-and-butter deer income was from store weaner breeding for the autumn sales, with a secondary focus on velvet production. The Smiths continued along the same lines, but a couple of festering frustrations set them on a new path.

Some of the 60-strong crowd at the Mackenzie Advance Party's P2P Regional Workshop.

"Our hinds weren't as efficient as we'd thought, given the weaner weights, and we also felt that we'd lost the velvet genetics. We probably hadn't been making the right choices with our sire stags and knew we had to make some changes," Hamish said.

Ringing the changes

Joining the Mackenzie Advance Party in 2015 gave them the confidence to start making changes starting with the sale of half the hind herd. The elk-cross hinds were replaced with 40 R2 and 120 mixed age English hinds with velvet genetics from Forest Road Farm in Hawke's Bay, and Peel Forest Estate, along with sire stags. Encouragement from Peel Forest's Mark Tapley and Steve Blanchard led in 2016 to the DNA parentage profiling of hinds and their progeny.

"Mark encouraged us to invest more time and money into the genetic side of things. We've DNA-profiled all the English hinds and two years' worth of their progeny so we can be more selective in our breeding to enhance the velvet genetics."

The DNA information was being used to guide selection and culling. There was now a pool of up to 70 potential replacements from which 20–25% would be selected for the 260-strong velvet herd.

In line with the changes, the herd of 220 mixed-age and first calving hinds had been restructured into maternal and terminal mobs. The hinds producing the poorest-performing velvet stags were diverted to the terminal mob and bred to an elk sire. Other options for these hinds could be to sell them in-calf or send them for slaughter.

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Ben Dhu: continued

Mixed-age red and hybrid stags due for velvetting – signs of breeding success are already appearing.

The signs of velvet breeding success were already filtering through with the 2017/18 velvet average weight, including regrowth across all ages, increasing 300g over the previous year to 4.3kg.

Hamish said they were now tracking in the right velvet breeding direction, striving for a clean style with a heavy beam. They were looking forward to this year when the first velvet from the two-year-old Ben Dhu-bred stags would be cut.

The Smiths were aiming for a velvet weight average of 2.5kg for two-year-olds and 4.8kg for mixed-age stags, although Mark Tapley felt these were conservative targets and predicted an across-the-board average of at least 5kg.

Stags were well suited to the environment because their feed demand matched Ben Dhu's feed growth curve. Numbers would be increased as infrastructure and development allowed, Hamish said.

Crunching the numbers

Mark Tapley overviewed the costs and benefits of Ben Dhu's DNA profiling by calculating the extra velvet production needed to cover the initial investment and annual profiling cost.

Set-up costs included purchase of Gallagher TSi software and a wand ($6,800), and the DNA testing of breeding hinds and 2016/17-born progeny ($12,255 or $28.50/head). Those costs would be covered by an extra 135kg of velvet, assuming a price of $140/kg. On a per-head production basis that worked out at an extra half kilogram from each stag.

The $4,000 cost of annually DNA profiling 140 weaners at $28.50 would be covered by an extra 110g of velvet per stag.

Workshop participants also got to crunch the numbers after Deer Select's Sharon McIntyre and facilitator Pania Flint explained the maths behind estimated breeding values (EBVs). Groups defined and wrote down the parameters and units of measure used in the Deer Select Sire Summaries, which tested the recall of some. McIntyre said Deer Select was built and based around genetic linkage by using the same sires between farms and/or years. She likened it to having the same student sit the same NCEA exam at two different schools and using their results as a benchmark and linkage between the schools. Linkage through the use of common sires allowed for statistical adjustment for environmental differences between farms (or years) in the performance of progeny, allowing animals to be directly compared, she said.

Workshop facilitator Pania Flint.

Flint explained that the extra genetic gain in progeny from using EBV animals was the average of the sire and dam. For example, if a sire has a velvet BV of +2kg and a dam has a velvet BV of 0, the average increase in velvet weight across the progeny will be 1kg.

Groups figured out how much extra money they could make by using a stag with a W12EBV (12 month liveweight) of +25kg compared with one of +5kg.

Answers were somewhat variable, but Flint calculated a payback of an extra $11,000 assuming that each of the 200 fawns produced an extra 5.5kg carcass weight (based on 10kg increase liveweight) worth $10/kg.

Regardless of the dollars and cents, the message was clear: well-considered and consistent sire selection based on EBVs could lead to substantial financial gains.

Enviro Exercise

The interactive learning continued when talk turned to farm environment plans (FEPs). Groups were given randomly listed bullet point steps of the plan writing process and tasked with putting these into chronological order. As with the previous exercise, there was a lot of head scratching and talk as people huddled around and sorted the strips of paper. All had different ideas about a logical sequence, highlighting that perhaps

the smartest first step was to contact the council or a farm environment professional before launching forth.

The Smiths had completed Stage One of an FEP with help from NZ Landcare Trust's Canterbury Regional Coordinator Janet Gregory. Hamish said the main issue was maintaining the health of the Quailburn Stream flowing through Ben Dhu. They were in the throes of fencing off sensitive and critical source areas, and to further reduce pressure on the central part of the deer farm had brought in from the sheep and beef blocks another 30ha. Ben Dhu is one of 10 farms in the AgResearch and DINZ high country water quality monitoring project, which is helping the Smiths with their environmental measures through monthly water sampling and mapping of the Quailburn over time to get a better understanding of farming impacts.

The measures appeared to be working, judging by the samples collected. Water-filled ice cream containers had good counts of macro-invertebrates such as damsel fly larvae and mayflies. Such species would not be present if there was sediment, debris and run-off entering the waterway because it would smother and kill them, Gregory said.

She said it was important for farmers to document and provide evidence of waterway health and a good online resource to help get started was from Wai Care: **https://bit.ly/2Sa3gZk**. It had good pictures of the insects, each with an indicator number. The highest (8–10) were the most sensitive species and, if present in a sample, indicated good stream health.

Another waterway health initiative was to get a group of local farmers together and apply for council funding for planting and fencing. Gregory is putting together a resource on establishing such a group.

Ben Dhu was in ECan's Red Zone, where the theoretical nitrogen loss exceeded 20kg/ha/year. Under the prescriptive rules the stock carrying capacity was capped until there was a proven reduction in nitrogen run-off across the catchment zone.

"For us that means increasing productivity without affecting the environment. We think we can do this in a dryland system," Hamish Smith said.

A major environmental issue has been wilding pines. When the Smiths arrived in 2006 most of the flats around the woolshed – now tree free and sown in lucerne – were covered with the rogue conifers.

"We tried to our best to control them using spray knapsacks and grubbing, but they were beating us."

The pines were finally recognised as a significant problem and over the past two years MPI has co-funded an eradication programme with farmers. On Ben Dhu 150ha has been sprayed and felled. Hamish was quietly confident that the problem, with regular follow-up, would be kept under control. ■

Environmental winners

An associated environmental focus was the official presentation of the NZDFA Next Generation Award to Hamish and Julia Mackenzie of Braemar station, also members of the Mackenzie Advance Party. In presenting the award co-judge and NZ Landcare Trust Canterbury Regional Coordinator Janet Gregory said the Mackenzies had demonstrated outstanding environmental and financial performance in an extremely challenging physical environment that was subject to significant public scrutiny and council regulation.

"Julia and Hamish have an in-depth understanding of their environmental challenges and opportunities, which has led on to development of farm accommodation and tourism as an integral part of their business," Gregory said.

Julia had further stepped up to environmental stewardship by taking on chairing the Mackenzie Country Trust, a stakeholder group of farmers, irrigators, tourist operators and conservationists committed to developing an environmentally and financially sustainable community that met wider community expectations.

NZDFA Next Generation Award winners Julia (left) and Hamish (right) Mackenzie of Braemar Station, with co-judge Janet Gregory.

Editorial: continued

We also know that New Zealanders care deeply about their natural environment – especially freshwater quality – but also increasingly about the protecting and nurturing of native plants and animals. If the deer industry comes onto society's radar around environmental issues, we need to ensure it's because we're being seen to be part of the solution to societal expectations, not part of the problem.

Most deer farmers are great environmental stewards, wanting to make a positive contribution and enhance the place where they live for future generations.

Putting together a Farm Environment Plan is a great way of documenting the work that you've already done and thinking systematically about future priorities.

I encourage all deer farmers to invest time in a Farm Environment Plan, not just to enhance the value of their land and farm, but also to help safeguard the deer industry's good reputation – an asset we all share. ■

– Ian Walker, Chair, Deer Industry New Zealand

Growing a good crop

by Phil Stewart, *Deer Industry News* Editor

About 45 visitors to a P2P Regional Workshop on 30 October got the good oil on growing a successful crop as well as on-farm case studies covering everything from copper deficiency to dealing with grumpy stags.

THE WORKSHOP WAS at Scotts Gap in Southland and presented by the Southland Next Generation Advance Party. Host farm was the Paterson Family's Dalmore Deer Farm and facilitator was Dave Lawrence.

Farm profile

Two contrasting and complementary farms accommodating velvet and venison operations make up Bruce and Jenny Paterson's deer business.

Dalmore (120 hectares, summer safe) is an intensive, flat, fertile property used for breeding velvet stags, growing venison replacement hinds and finishing all venison animals.

The drier 160 hectare Lockmill is a few kilometres away and is on rolling hill country on a clay base. All velvet stags are moved to Lockmill from the age of two. The farm is also home to the venison breeding herd.

Young velvet stags at Dalmore.

Bruce Paterson said they are reducing the European influence in their red venison genetics to about a 50:50 English/European to get the hinds back down from the bigger-than-desirable mature weights of 130–140kg. Wapiti terminal sires are used on the mixed-age hinds and red sires used over the first and second fawners to breed replacements and accelerate genetic progress. All venison sires are selected on growth eBVs.

Bruce Paterson.

The velvet breeding policy favours early-maturing stags with good length and weights, as well as temperament. Paterson does DNA parentage testing ("much easier than spotting") with all velvet hinds and fully records all of them using his TSi. This way he can multi-sire mate and soon identify poor performing stags or hinds to cull.

Velvetting stags are all evaluated at two years and they're getting good results. The overall average two-year-old weights in 2016 were a whisker under 4kg and even those sold or culled all averaged more than 3kg. His mixed age herd average (first cut) has climbed steadily over the past five years to about 6.5kg last year.

His attention to genetic merit in the velvetters has been rewarded over the years with four wins in the two-year red velvet class of Rising Stars.

The two breeding herds are managed separately, identified with different-coloured tags. Some of the cull velvet hinds do go into the venison mob, but there is no traffic the other way.

Visitors discuss crops at Dalmore Farm.

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Southland Next Gen: continued

Paterson uses some Peel Forest velvet genetics via AI, but mostly uses homebred sires. Surplus velvetting stags are sold, with some also sold as sires.

Being Southland, winter cropping is important, and 52 of the total 280 hectares is under crop each year. Paterson said he's cutting back on fodder beet (Brigadier and Feldherr, now used only for spikers and beef calves) and turning more to swedes (Clutha Gold, Invitation, CleanCrop swedes) and clover for the fawns and Regal kale for the hinds. All deer except about 30 older hinds and a few smaller fawns are taken off pasture over winter and put onto crop, with the fawns going onto swedes. "The grass is chewed out by May and then left so it's fresh for the stags in spring."

Paterson commented that growing a good crop is only half the battle. Like many, he has found deer go off the boil on fodder beet in winter after 60 days. "Sometimes you grow a great crop but the deer won't eat it!"

Red clover paddock

A quick farm tour took visitors to a 5-hectare red clover paddock that had just been cut, yielding 52 bales. Paterson said the clover had followed fodder beet and although he'll get two or three cuts of baleage, it "wasn't great". He said he would put in red clover after kale or swedes next time.

"It's good to grow but we can't graze it in spring because we have it shut up for baleage."

Agronomist Brian Young suggested the paddock would be suitable to a mix of 4kg white and 12kg red clover.

Tom Macfarlane, who farms near Fairlie, said a paddock of red clover gives an opportunity to get on top of weeds, but he warned that it can be deceptive, appearing to be yielding more than it really is. He suggested drilling grass back into a red clover stand after about two and a half years, as the clover starts to thin out.

Good brassica crop advice

Guest expert was PGG Wrightson agronomist **Brian Young**, who asked the rhetorical question: why does a potential 15-tonne brassica crop produce only 9 tonnes? Here's some of his advice.

Planning

- Planning is everything! Paddock selection, fertility, soil testing, drainage, relationship to waterways and spraying out are all important to get right.
- Think also about the sowing method in relation to crop and conditions: direct drill, drill into cultivated ground, broadcasting, ridged, precision drilled.

Brassica options

- Kale, swede, rape, turnip or hybrid (e.g. Raphno)

Fertiliser

- Use a starter fertiliser, preferably some of this with the seed.
- If extra P is added, make sure it's beneath the seed, or the roots will stay on the surface seeking it out.
- Minimise sulphur use with brassicas.
- Avoid over-use of late autumn nitrogen so you don't get nitrite poisoning when plants have taken up too much N.

Season

- Different cultivars have different maturity dates. Some kales are good winter and summer feeds. Turnips are also useful for summer grazing. So is Pallaton, a spring-sown kale x radish hybrid brassica.

Disease

- Avoid repeated brassica cropping in a paddock, to prevent disease buildup.
- To avoid disease problems have a robust cropping rotation:
  - single crop swedes then kale or beet, or
  - beet then swede or kale.
- Pests such as aphids spread disease but it's hard to control these completely.
- Diseases of kale such as *Alternaria brassicae*, mosaic virus (aphids) and dry rot can be spread up to 10km through the air, often from trash of last year's crop that hasn't been properly buried.
- Disease such as clubroot, black rot or bacterial leaf spot can be spread between paddocks and farms on machinery.

Pests

- Seed treatment is important to give some protection against fungal disease and pests like springtail or wheat bug (Nysius fly), but it isn't a silver bullet.
- Watch the crop carefully in the first 10 days for insect damage. Get off the bike and have a walk around – don't just look over the fence as you drive past.

Preparation

- If you've just bought a place, find out as much as you can about paddock history.
- Crops with small seeds especially need a fine seedbed and compaction for good soil contact.
- Pelleted seeds can offer significantly better yields than unpelleted.
- Avoid leaving clods in the seedbed also because they will keep releasing weed seeds as they break down.

Brian Young, PGG Wrightson agronomist, said good seedbed preparation and consolidation is essential for a successful brassica crop.

Weeds

- A good pre-emergence spray programme works best as you can use "tougher" chemicals at that point to knock down weeds.
- Spray accurately so you don't miss any patches.
- Spray newly establishing grass and clover well to keep on top of weeds post emergence.

Grazing system

- Brassicas fit well into a deer system. For example, weaner stags fed 1.2kg dry matter of kale plus 0.7kg dry matter of silage per day in winter would be receiving 22.3 megajoules per day to meet energy targets, while also getting enough crude protein (16.8 percent of diet, minimum required 14 percent). Fodder beet can be used in place of kale but supplies less protein. (Also watch CP levels in cereal silages, hay, straw etc.)
- Do a feed budget.

- Measure yields so you can ensure stock are getting access to the right amount.
- For winter crop grazing ensure good access to water.
- Make sure electric fencing is up to scratch before you start.
- Take care with animals' trace element status through winter.
- Watch teeth and make sure you're not feeding frozen crop.
- Ensure brassicas are fed with enough supplement to meet fibre and protein requirements (feed hay/silage in the morning).
- Beware of toxicity with some crops (e.g. when flowering, or nitrite poisoning)
- Take care with transition times, usually 10–14 days (ensure animals are full to prevent gorging).
- Ensure environmental requirements are met (grazing direction on slope, grass buffers, etc.).
- For bulb crops, manage breaks (ideally long and narrow) so tops and bulbs are both utilised.

Quality

- Silage/baleage quality checks are advisable but it's also a good idea to herbage-test standing crop. Fast-growing stock need plenty of crude protein, so be sure your crop supplies enough – especially bulb crops, which can lose a lot of leaf in winter.
- Beware of mouldy supplement, which can carry listeria.
- Insect infestations or crops going to flower can affect quality and palatability.
- Other signs of quality drop are: leaf drop, stem hardening, bulb chalking (over mature).

Yield

- The sowing rate will affect yields. Overall, lower rates give higher yields because of reduced competition.
- With kale, a rate of about 4kg/hectare gives the right balance between stem thickness, yield and amount of leaf. With higher rates, the kale will "self-thin" and leaf yield is less; with lower rates the stem will be too thick.
- Thinner stems (higher sowing rate) are more palatable.
- A higher sowing rate can be justified on a difficult site or where it's important to get more ground cover to retain moisture or suppress weeds.

Cost

- Bought-in winter supplements can cost you 40 cents/kg dry matter. A good brassica crop can cost only 6–8c/kg.

Advance Party member case studies

Getting to the bottom of fawn losses

Pāmu Farms Mararoa manager **Matt Canton** reported that the scanning rates in their 4000 hinds – both mixed age and first fawners – had been okay overall in 2017 at 93 and 94 percent respectively. (There had been one failed mating mob among the mixed age hinds, which dragged down their average.)

However the fawn losses were higher than they wanted, especially among their first fawners, which lost 19.5 percent of their fawns, for an overall weaning rate (to hinds mated) of just 74 percent. The mixed age hinds had a 10 percent fawning loss, better but still not great.

Canton said they used EID to monitor losses paddock by paddock for seven fawning mobs of mixed-age hinds and found wide variation. The percentage of wet/dry hinds to those scanned pregnant and set stocked ranged from 2.3 percent up to a whopping 15.9 percent. Canton said there was clearly something going on in several paddocks. "If it had been losses during pregnancy, these would have been more evenly spread," he said.

They plan to repeat the exercise to make year-on-year comparisons to see if there are definitely problem paddocks. He said one possible factor might be paddocks with less natural cover, more man-made hazards (e.g. ditches), less shelter and greater exposure to disturbance. "We need multi-year data to be sure."

They haven't done a paddock-by-paddock analysis among the first fawners yet.

Keeping the old gang together

Troy Griffith, deer stock manager at Pāmu Mararoa, reported on a new strategy last year where they kept their weaner winter crop mobs of about 400 together right through until they began to be drafted off for the works and after, rather than re-sorting them by weight when they came off crop onto grass.

As the tops from a mob went off to the works, the residual deer were not "boxed" with other mobs. He said this created more mobs than they otherwise would have, but maintaining the stable social structure right through seemed to give growth advantages by reducing stress. Average growth rates were:

Early September:	230g/day
September average:	290–325g/day
Mid–late October:	480g/day

Stroppy stags

Nathan Coburn.

Nathan and Selena Coburn have a small velvet-focused operation. Their KPIs are very good: 100 percent weaning in the mixed-age hinds, and good average velvet weights (two year-olds 3.4kg, mixed age 6.65kg).

But the stags have been as grumpy as hell. Roaring was carrying on right through to button drop, with even a stag death from fighting. They have to feed out from the tractor and Nathan has been chased around the paddocks on his farm bike.

It's clearly a social problem and Nathan has simplified the mob structure to two-year olds, 3-year-olds and above, and sire stags. This has reduced the roaring and the number of aggressive stags but a couple of the previous offenders are still at it. "Shoot them," was the advice from the floor. More helpfully, he was also advised to provide a couple of old pine logs or suchlike in the paddock for the problem stags to take out their aggression on. The original reason for maintaining them in multiple age group mobs was to minimise stress to optimise velvet production.

Minimal response to B12

Alan and Tania Clarke manage the herd at Netherdale Red Deer. On the basis of results they'd achieved with sheep, they tried giving vitamin B12 injections in deer following weaning – B12 is thought to stimulate appetite and help cope with stress.

In a split trial in spring with weaner hinds grazed together on red clover for 67 days, half were given a 3ml "Smartshot" injection and the others were untreated. There was only a small (6g/day)

growth advantage in the treated animals. The carcass weight advantage, even at an $11 schedule, was barely enough to pay the $3.40 cost for the shot.

However a much cheaper, shorter-acting alternative, "Proloject", costs just 7 cents a shot and is being given three times (weaning, pre-winter and spring). The Clarkes intend to persist with this treatment to see if there will be a more cost-effective advantage. (It may be more telling to try the treatment on less palatable feed to see if the appetite stimulant effect is greater.)

Copper problem

Bruce Paterson reported a serious copper deficiency problem that had cropped up in just one paddock at Lockmill farm. This manifested in fawns before weaning where they were arthritic and crippled with a characteristic "bunny-hoping" gait. They died or required euthanasia. Soil fertility was being progressively improved there and the issue became bad around the same time as a sharp spike in soil sulphur (S) and lifting in soil pH, which can make more molybdenum (Mo) available.

A 2016 herbage test showed copper was actually high, but so was S, iron (Fe) and Mo. It's known that S, Fe and Mo can inhibit copper uptake and it's likely this was happening here. In the meantime the issue is being dealt with by giving hinds a copper injection and this seems to have resolved the problem for now. Coincidentally, S levels have returned to normal.

Dave Lawrence commented that an injection is more reliable that copper bullets, which don't always stay where they're meant to, although bullets tend to provide much longer duration of benefit. He said the copper deficiency was probably a secondary issue caused by the other elements inhibiting uptake.

Copper response surprises

Nind Deer in northern Southland did an on-farm trial to check whether the pre-winter copper injections routinely given to weaners were actually worth it. A mob of 600 was wintered on fodder beet plus baleage, with half injected and half untreated.

The copper-injected weaners grew 39g/day faster than the untreated weaners between May and September. This yielded an average 5.6kg liveweight advantage, translating to a $34 return for a $1 investment in the copper injection.

Dave Lawrence, who presented the findings on behalf of **Aaron Nind**, said farmers have had a fetish for copper and wasted millions pouring it down throats. He said it was uncommon to see a growth rate response to copper treatment, so was surprised by the results. He noted the two mobs were managed the same, although run separately, which may have influenced the outcome. He also noted the injections were done two weeks after the initial weighing. "In a perfect world they would have been run in one mob," he said.

Young stock on winter crop at Nind Farms East Dome property.

DINZ Animal Health Programme manager Lorna Humm said farming methods have changed and it's important to find out what is appropriate for your own property with regard to copper.

Rearranging mating setup

Tom Wylie, Lora Valley Farms, said mating older hinds with wapiti terminal sires in 2017 gave a poor result with only 64 percent in calf. The two mobs of 150 hinds had each been run with three wapiti bulls. Each mob had access to three paddocks and mating mobs had some adjacent paddocks in common. In one of the mobs, a new younger bull had joined two others, and the bulls were swapped between mating mobs for the last cycle.

At least some of these factors probably contributed to the poor result, so things were done differently this year. Wylie said mating paddocks were kept more separated, each mob kept in one paddock rather than three, mating ratios were reduced to 1:35, hinds were well prepared and more care was taken with the bull ages and social structures. Wapiti bulls joined on 5 March at weaning and red chaser stags joined from 12 April for 22 days. This led to a much improved scanning result (94.5 percent), with 75 percent in calf to the wapiti sires.

Wylie said the strategy will be pursued next year.

Value of regrowth

Recording individuals' regrowth is useful for making culling decisions.

Josh Gill of Merrivale farm assessed the contribution to velvet value regrowth makes. The farm is a mixed venison and velvetting enterprise. Velvet is the main passion and they are setting the bar high for themselves. They are on track to achieve average two-year-old weights of 4kg within three years. Bought-in sires must be cutting at least 7kg by age three and mature homebred sires must be cutting over 10kg to earn the key to the mating paddock.

Last year Gill recorded the average weights and values of regrowth. Weights varied from 0.9kg average for three-year-olds, up to 1.82kg average for stags seven years and older. Overall average was 1.52kg per stag that cut regrowth. A total of 364 stags produced regrowth which was about 70 percent of all stags 3 years and older. He said the regrowth contributes 10–12 percent of the overall value of the velvet harvest, noting that it is cut at a time that suits herd management, and not necessarily the optimum time for value and quality. Aside from the value of regrowth, recording regrowth against individual animals was invaluable for culling decisions. ■

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Hawke's Bay Originals host a most excellent tour

by Phil Stewart, *Deer Industry News* Editor

If you want to host a visit by a bunch of deer farmers from another part of the country and show them how you're doing it in your district, then do it like the Hawke's Bay Originals Advance Party. They have set the bar very high indeed.

FACILITATOR RICHARD HILSON and Chair Ru Gaddum led the organisation and hosting of a meticulously planned and memorable two days on 10–11 October. The group of 15 visitors from the Otago, Mackenzie, Southland Next Generation and Elk/Wapiti South Advance Parties were whisked around seven properties and some of Central Hawke's Bay's finest scenery and hospitality.

Above all, it provided a chance to talk. The conversation about deer flowed all day and well into the night with visitors and hosts keen to share experiences and learn from each farm they visited. All but one of the farms in the Advance Party were visited.

Accommodation was at Ben and Rae Gaddum's charming Arapata Lodge above Havelock North and logistics – right down to texting coffee orders ahead to the Hatuma café to save time between farm visits – were organised with military precision.

The visit, organised as part of the Passion2Profit programme, reciprocated a visit to Otago by the Hawke's Bay Originals Advance Party earlier this year.

The following is a brief rundown on each farm visited, with insights into what being in the AP has meant for them.

Evan and Linda Potter, Elsthorpe

When the Potters bought the 640-hectare Waipapa 20 years ago it was extensively run and would respond to major investment. They've delivered just that, putting in a huge effort including much-needed tracks, capital fertiliser and water reticulation. They're just completing a new deer shed and now have 135 hectares deer fenced.

A bush-clad gully has been put into a QEII covenant with strong support from the Trust and regional council. Evan said his contribution was his labour double-fencing the block. "The covenant got 3km of fencing and I got 1km for myself," Evan said. He was full of praise for the council, which also helped with part of a water scheme, necessary when the gorge was made inaccessible to stock.

The velvet-focused herd has nearly 200 breeding hinds plus replacements and about 230 velvetting stags plus R1s. The deer make up nearly one-third of the stock units with the balance sheep and cattle. It's quite steep country, high and cold in winter with variable rainfall. The Potters maintain a hind herd "as insurance" and are fairly ruthless with culling their replacements. Evan said they're concentrating on lifting weights and pursue traditional clean velvet, not trophy styles.

They single-sire mate in small mobs with mixed-age stags only, and are careful to supplement hinds to get their body condition scores up for mating – something that's rewarded with good conception rates. First fawners are run with sires from January to get socialisation sorted well in advance. Evan said they soon learned to keep mating mobs well apart.

He said they had "come in cold" to the Advance Party. There are few deer farms in the Elsthorpe district (Central Hawke's Bay has dropped from a peak of 75 breeding herds to about 40) and they have really valued the support and advice from other members. The Advance Party outperforms the district averages for scanning and focuses strongly on how to achieve the best results.

Linda and Evan Potter.

Matt and Paula von Dadelszen, Tourere

The 990-hectare Mangapurakau has been in the von Dadelszen family more than 100 years and the next generation – Matt and Paula – stepped up when they bought the farm last year.

A mixed venison breeding and velvet operation accounts for about one-third of the 10,250 stock units on the property. The normally summer-safe 1200mm of rainfall isn't as reliable as it once was, and ranging up to 580 metres it commands a spectacular outlook over Central Hawke's Bay towards the Ruahines.

About half the farm is deer fenced and there's some rotation of stock classes. For example, deer go in for fawning once lambing is done, while cattle are used for controlling pasture.

Matt said they are doing a lot of regrassing and they've recently started using the hybrid Raphno, which will give them three or four summer grazings for lambs and then deer, which love the crop. Matt said it was hard to get rape to mature there, so the Raphno fits in well. Chicory is also planted and weaners do well on it.

He's realistic about the property's strengths and finishing deer isn't one of them, so the venison side is strictly breeding. "We have enough stock classes here as it is." With this year's crop of wapiti-cross weaners fetching about $450/head at 64kg liveweight, he's more than happy, although he'd like to get those weights closer to 70kg.

The venison breeding hinds are multi-sire mated to wapiti bulls at a ratio of 1:40, while the hinds mated to red sires for breeding

replacements and velvet are single-sire mated to Netherdale stags. Reproductive performance isn't bad, with the hinds mated to red sires weaning 90–95 percent and those mated to the wapiti weaning 80–90 percent.

Matt said the property is split between two catchments and two regional councils, which makes things interesting. The farm is crisscrossed by creeks and there are plenty of springs, so water quality could become a big issue as councils dial up the pressure on farms. He said it's always better to be proactive and get on with jobs like fencing waterways before they're made to.

"The Advance Party has been great for helping us fine tune what we're doing. There are also plenty of good tips, like a better way to make flood gates using corrugated iron rather than mesh to stop the deer getting through."

Matt von Dadelszen: AP helps with fine tuning operation.

He said watching others first hand trying new crops was a great way to explore better ways to feed their stock. Being in the Advance Party has also helped them realise their stags need to be fed much better. "They can eat a lot more than we thought they could – it used to be thought they could survive on nothing!"

Karen and Michelle Middelberg, Waipukurau

Sisters Karen and Michelle run Clovelly, a 565-hectare property originally purchased by their parents in the early 1990s. Just under half the farm is deer fenced and deer make up about one-third of the 5590 stock units. About half are sheep (which "fit in where they can"), with the balance being cattle.

Manager Tom Paget is the son of a former manager on the property. The Hawke's Bay Originals Advance Party started up around the time Karen and Michelle took over the farm. The family had endured a tough period with the death of father Bert Middelberg and then a major drought in 2013, so the advent of the group was timely.

Karen said an earlier focus on wapiti has been left behind and they are now running a mixed venison and velvet operation based on red deer. They're pretty happy with the shape of the deer operation and are now looking to do some fine tuning to improve performance – especially hind feeding during summer, improving weaning weights and lifting velvet weights.

Because there were no velvet genetics in the breeding herd, they are growing that side of the business from a standing start. There are about 100 velvetting stags, made up from a mix of bought-in stock and retained animals from their own breeding herd (picked initially on the basis of coronet size).

All slaughter stags are gone by Christmas and given that some are retained for velvet, the Middelbergs are happy with the 54kg average carcass weights achieved last season.

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HBOAP: continued

They weigh young stock regularly and use the DINZ growth curve charts to benchmark progress. R2 hinds are well looked after and managed to target weights, and they have been rewarded with good conception rates in their first fawners. Karen said their mature hind weights were 120–130kg, which is plenty.

A suggestion from one of the southern visitors that wapiti terminal sires could help them improve carcass weights was politely declined – the Middelbergs feel there is still plenty of scope for genetic improvement using red lines.

The farm gets wet and muddy over winter and runoff is a risk. However a series of connected sediment traps is doing a good job. The dams have been fenced but they aren't required to fence the many creeks, which is something of a relief.

Karen said joining the Advance Party when they did has been a big help. For example their deer lane was very steep and uneven, making stock handling difficult. With the encouragement of Advance Party members and help from earthmoving guru George Williams they had the confidence to reshape and improve the track.

Clovelly team. From left: Karen's son Jonty Hilson, Karen Middelberg, manager Tom Paget, Michelle Middelberg and Clovelly 2ic Tai Robinson.

Over there! Visitors look out over the main basin at Clovelly.

Richard Hilson and Karen Middelberg, Takapau

While the 220-hectare Jedburgh is lower and much flatter than the family-connected Clovelly farm, each property has a similar stock policy with deer and each also runs sheep and a few cattle (the latter used as a release valve if it gets dry at Jedburgh). In both cases, a velvet business is developing within an already-established venison operation, showing that the two enterprises can complement each other well.

The least productive animals on the farm are a herd of 40 Mesopotamian fallow, inherited from AgResearch. "They are pretty and endangered, but they are also very stupid," Richard said.

He explained the farm is made up of an original block once owned by his grandparents, plus a purchased additional block. Genetics are now based on various English lines, including homebred sires as well as Windermere and Stanfield sires and a good leased stag. A European stag is used as a terminal sire over cull English hinds.

The genetics are reflected in the velvet weights, with all two-year-olds topping 3kg on average and four-year and older stags averaging nearly 7kg. Richard said the herd has been fully recorded, with offspring growth rates being a main driver for culling hinds, while good velvet genetics among hinds are now being favoured.

Although – or perhaps because – he's a vet, Richard says the animal health inputs are quite modest when it comes to drenching. That's thanks in part to the grazing system where the sheep and cattle are moved around enough not to dirty up their own paddocks, keeping the parasite challenge low. This also benefits the deer. A mower is used at times for controlling pasture "and that doesn't need drenching", Richard said.

They have been quick to take advantage of the financial assistance available for environmental mitigation work. Lines of flax and poplars to help mitigate wind erosion, plus a new deer fence, attracted a 50 percent grant and also provide useful shade and shelter for the deer. Fencing off a wetland and river attracted similar support. A 0.75-hectare dam, which cost about $25,000 was also subsidised by the regional council by $5,000 and Ducks Unlimited by $3,500.

An island on the dam provides a haven for birds, although this protection will be balanced somewhat by the location of a maimai on the shoreline. The edges of the dam were excavated and filled with rocks to help mitigate erosion from wave action.

The area is infested with mustelids and wild cats and Richard says they are trapping to help protect the wildlife. Son Jonty helped with the plantings around the dam as part of a Duke of Edinburgh Award.

The visitors also had a quick look at the deer yards, which were adapted from cattle yards built by Richard's grandfather in the 1970s. They use close-boarded sides in the lower part to prevent deer being spooked, and slatted rails at the top to break the wind. The deer shed features a solar panel that provides power for up to 6 hours of light per day.

Part of the small but growing velvetting herd at Jedburgh, currently cutting 750kg.

Richard Hilson explains the background to the 0.75-ha dam.

Half time refreshments

A welcome surprise during the lunch stop at Jedburgh was a wine tasting hosted by former All Black John Ashworth with wife Jo. The couple run Junction Wine nearby at Takapau. John told guests his love of wine began during an ABs tour of France, when he also managed to convert a few of his team-mates to the fruit of the vine.

George Williams and Laura Billings, Tikokino

Te Maire is a well-known Hawke's Bay deer, cattle and cropping enterprise and was also winner of the supreme Elworthy Award in the 2015 Deer Farmers Environmental Awards.

George has deer in his blood, having sweated through building 50km of deer fencing on the farm as a 16-year-old.

Over the past 20 years the farm has grown with the acquisition of several adjoining properties. The family is now running 1188 hectares (970 effective) including 340 hectares of flats used for barley, peas, potatoes, hemp (planned) and fodder crops plus short rotation ryegrass, clovers and a triple mix for the cattle and deer. The stock are run on 600 hectares of medium hills with the focus now almost solely cattle and velvet. Sheep numbers have been slashed to just a handful.

George said there is capacity to build the current velvetting herd of about 740 up to 1000. They are now pairing second fawner and older hinds with fawns and using that information to cull the poorer velvet genetics out of the breeding herd. Last year they averaged 4.4kg, 5.2kg and 6.5kg for the 3, 4 and 5+ year-old stags respectively.

They can't use the "Aitken technique" for weaning because they need to move the weaners to a different part of the farm. However the grain used in the two weeks before weaning and for another two weeks after helps keep weaners settled. George said the EnviroWands used on deer fences (see *Deer Industry News* October 2018, p18) have nipped fence pacing in the bud, with grass now growing right up to the fences where they are used.

For the past few years Te Maire has also hosted Wilkins Farming's North Island sale each December. George said the big stags are venison focused and are "huge and quiet". He said they receive a management fee for looking after the deer from August to December, plus they take a cut of velvet before they're shipped off. Breeding Values are taking greater importance now, he added. "We had one buyer at the auction who just wanted to make his picks based on the BVs published in the catalogue. He wasn't interested in how they looked."

After a farm tour, visitors looked in on the impressive new sales complex/velvetting shed.

George Williams: Hoping to keep building velvetting herd.

Some of the new season's velvet on display for visitors at Te Maire.

Grant and Sally Charteris, Tikokino

Grant and Sally bought Forest Road Farm from Grant's father in 2009 and since then have continually ramped up the deer business, focusing on velvetting and growing out a handful of older stags for trophy, so Grant can afford to "go out and buy some over-priced sires" when he needs to.

It's challenging, class 6 land with virtually no flats but is mostly cultivable. Grant takes advantage of this to plant kale and swedes for wintering the stags, followed by Pasja to grow R2 hinds through to good mating weights. The paddocks then go back into permanent pasture with Ceres One50 (autumn) or Shogun (summer).

Grant was one of the first in New Zealand to put up his hand to join an Advance Party and he's still enthused. Early advice from the group about the configuration of a new lane was a big help. "Without that advice it would have been a pig's arse." He said the group of "eight good farmers" feeds off each other and bounces ideas around. "It gives you the confidence to take the next step. Once we've said it we're committed [to action]. The Advance

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Parties are better than field days – there's more structure and good record keeping."

He maintains quite a big breeding herd of 410 mixed age hinds plus 99 R2s, giving him plenty of leeway to apply selection pressure, plus a good cash stream from surplus hinds and velvetters. The culling cutoff for two-year-olds is an impressive 3.3kg. Those cutting between 2.5–3.3kg are sold to a large velvetting operation nearby. He's also started selling three-year-old sire stags, having a successful inaugural sale last December.

Deer provide the bulk of their income but they also run some cattle, which complement the deer nicely. Grant and Sally recently switched from fattening bulls to running a small Hereford breeding herd. They still trade in cattle as the seasons allow.

Environmental work has also been progressing well. The current project is to fence off an ephemeral stream down a gully. A track has been bulldozed and fencing is under way. Grant said the council had advised him to wait until funding could be approved, "but we didn't want to wait, so we've gone ahead for now, under our own steam".

That restless enthusiasm also translates to his thinking about feeding. A newly sprayed out paddock might be good for a crop of Raphno, he said. "I don't need another summer crop, but it could save us in a drought – and maybe the two-year-olds could winter on it when the grass shuts down, so we could save some grass for later..."

Commenting on the visit, Julia Mackenzie (Mackenzie Advance Party) said it was exciting to see so much passion and enthusiasm. "You embody P2P and the Advance Party concept."

Grant Charteris: Still enthused to be part of the Advance Party.

The Charterises are pushing on with fencing and planting this gully.

Stags await velvetting at Forest Road Farm.

Ru and Ben Gaddum, Kereru

The last farms on the tour were the Gaddum family's Rangimoe, Tuapae and Huia blocks (there is also a fourth block near Havelock used for finishing cattle). The steepest and largest of these is Rangimoe (810 hectares, 415 hectares deer fenced), which is 680 metres at its highest. The three farms are close to the ranges and Rangimoe is reasonably summer safe, with an abundance of streams and springs.

Ru Gaddum: Influence of Advance Party has been very positive.

Rangimoe and Tuapae are breeding, velvetting and finishing blocks, again reflecting the integrated nature of most operations in this Advance Party. The more than 1000 hinds at Rangimoe are split into velvet (400) and venison (660) breeding herds. A new fawning block is about to be opened up (see photo below).

Interestingly, all stags (venison and velvet) at Rangimoe and Tuapae are kept until age two and velvetted. Those cutting over 2.5kg are retained in the velvetting herds with the rest slaughtered. About 20 percent of the velvetting herd were born to venison hinds, showing there is some genetic overlap between the two

Ideal fawning country at Rangimoe.

Velvetting stags at Tuapae.

operations. In total, 2.8 tonnes of velvet a year is being cut and a good chunk of that comes from the two-year-olds.

Ben said it would be possible to finish some of the stags in one year, "but we have land to fill and we need animals on it". With the mix of cull hinds, yearling hinds and two-year-old stags, they can keep up a year-round supply of animals for slaughter. There is also flexibility to kill stags earlier if pressure comes on. The cost of feeding them for another year is offset by the additional income from extra carcass weight plus about $350 for the cut of two-year-old velvet.

With four farms within the one company there is plenty of flexibility to move stock and labour around as needed, Ben said.

Ru said the influence of the Advance Party has been "awesome".

"They've really picked our complex system apart and chewed over the options to simplify things." ■

Thanks, it's been a blast!

Hawke's Bay hosts and southern guests pause for morning tea at the home of Ru and Kate Gaddum. All agreed the two-day visit had been a roaring success:

There's a lot going on here – you've been making fast gains with your velvet. Tom Wylie, Southland Next Generation AP.

I can't remember ever seeing a better group for leveraging ideas off each other. It's been invigorating to see. Peter Young, Rabobank.

It's great to see deer and cattle [at Rangimoe] integrated so well; we don't do that so much in the south. Murray Hagen, Elk/Wapiti AP.

This tour has been a credit to you all – it's obvious you're all good mates. Hamish Mackenzie, Mackenzie AP.

I can't speak highly enough – this has exceeded all my expectations. Glen Harrex, Otago AP.

Summer feed strategies for dryland farms

by Vivienne Haldane, *Deer Industry News* contributor

Attendees at the Hawke's Bay Advance Party summer grazing workshop on 17 October got down amongst the lucerne to hear about the role of water, nitrogen and legumes in dryland farm systems.

TWENTY-SEVEN DEER FARMERS gathered at Richard Hilson and Karen Middelberg's farm, Jedburgh, at Takapau in Central Hawke's Bay to hear plant scientist and lucerne expert Professor Derrick Moot talk about the value of legumes.

Advance Party facilitator Anyika Scotland, a veterinarian at Vet Services Hawke's Bay in Waipukurau, asked attendees what they wanted to learn. This was a good way to kick off discussion, with farmers keen to know what soils, topography and fertiliser were needed, as well as the possibility of mixing it with other feed species, and how it might fit into a deer system.

Climate change and drought resilience

Derrick Moot has long been interested in climate change, having first delved into it while doing postdoctoral studies in the United Kingdom in the 1990s.

On his return to New Zealand he focused on use of legumes to improve dryland pasture and create resilience to drought conditions.

In 2017 Moot won the Beef + Lamb NZ Sheep Industry Science Award for his work on lucerne use in dryland pastures.

Derrick Moot: A long-standing interest in effects of climate change. Photo: Vivienne Haldane.

Creating resilience

"East Coast dryland farmers are the most vulnerable when it comes to climate variability and they need farm systems that can cope," Moot said.

Nitrogen was actually a greater limitation on production than water, he added. Legumes were the most sustainable way of getting nitrogen into the system and boosting production.

"All plants except legumes are nitrogen deficient all the time."

Getting nitrogen in the system and boosting production by planting legumes was preferable to "putting it on out of a bag", he said.

"Urea releases a huge amount of greenhouse gas whereas legumes fix nitrogen from the atmosphere for nothing. It's the most sustainable system." Lucerne can fix 25–30kg of nitrogen per tonne of dry matter produced, making lucerne-dominant systems sustainable.

Taking note of some not-too-flash grass out the door of the woolshed, Moot noted that the variation in colour was due to urine patches, signifying lost production and opportunity.

"Lucerne is a very efficient plant in spring, which works well for any system that has a lot of stock arriving then, such as lambing, calving, or hinds," he said.

The search for efficiency

Lucerne and clovers are high-quality forages that maximise water use efficiency, fix nitrogen and grow in early spring when soil moisture is available, Moot said.

Grazing management systems that maximise spring liveweight gain but enable the high quality forages to thrive and survive are also important, he added.

Persistent grass species like cocksfoot, that respond to moisture during summer dry periods, provided another dimension to summer grazing systems.

In the lucerne paddock

The lucerne paddock visited on the Hilson-Middelberg farm was planted nine years ago and is part of a 17-hectare lucerne block. The three paddocks cost between $1,100–$1,430 per hectare to establish and are used on a six-week rotation with 350 sheep currently.

Moot noted that the knee-high lucerne was a little too long, with the ideal height for grazing being 30cm.

However, at its current length it was useful for baling, he said.

"There is only 2.5–3 tonnes per hectare of high quality lucerne in any stand and that's what you want to be feeding animals as much as possible. In 10 days you will have to move them on because what's left is like eating cardboard. This is the normal problem people have with lucerne – it gets away. The stock don't eat it; you lose a day of liveweight gain and they suffer from empty gut syndrome. When they do feed, they gorge themselves and then

Visitors get amongst the lucerne at the Hilson-Middelberg farm. Photo: Vivienne Haldane.

you may have an animal health issue. Deer are a bit different but it's the same principle."

It was best to start grazing lucerne in spring at 15–20cm and make sure you had two paddocks ahead at 30cm, Moot said.

Stay alert! The value of herbage testing

The lucerne paddock visited during the Regional Workshop appears a vibrant green and was a good one to show off many of the attributes of lucerne. However Professor Moot wondered aloud during the visit about the possible cause of some small yellow spots that were not immediately apparent in some of the topmost leaves.

Within three days of the workshop, the whole paddock had adopted a distinct yellow tinge at the tops of the plants (see photo on next page). So, too, had the next paddock, which had already been grazed once this spring by ewes and lambs. The only good news was that the deer farmers and the good professor had left by this time, so the farmer was spared some embarrassment. Photos showing the yellowing leaves were promptly emailed to Professor Moot. He advised getting a herbage test and not to guess at the cause.

Two sets of herbage were submitted for analysis, which revealed a lack of molybdenum, potassium and magnesium – background deficiencies not seen on this property in 11 years.

Moot advised applying fertiliser that included trace elements (Mo, Mg) immediately after the next graze – and then hoping for rain to dissolve it. "Do not apply it as liquid – use a solid fertiliser," he said. "I would also get a soil test with basic requirements and pH. The lack of Mo may be due to an unusual pH, possibly too low."

With advice from new local Ballance adviser, George Redpath (incidentally a relative of Phil Stewart and Richard Hilson, among others – it's a small world), a fertiliser mix including serpentine super, potash and molybdenum was applied the following week, with a view to correcting the deficiencies as well as adding an annual dressing a bit ahead of the normal autumn cover.

The lessons? Regular soil tests are not enough, and following the advice on annual herbage testing from the Beef+Lamb NZ Lucerne texting service would have been a good idea in this case (**https://beeflambnz.com/user/newsletter-signup** to join).

While the plants have been carefully managed for a decade, the sole previous herbage test had been several years earlier and was now irrelevant.

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HB feed workshop: continued

Tell-tale yellow tops: A herbage test helped pinpoint the cause. Photo: Richard Hilson.

Other recommendations

- Aim to have a 42-day rotation with week-long breaks.
- Lucerne stores sodium in its root, so salt should be supplied for grazing stock.
- Lucerne needs one period of decent growth in autumn to let it flower and replenish root reserves.
- An option to retain lucerne in a crop that is running out:
  - graze down in autumn until there is no leaf, then spray out weeds with Round-up
  - drill in Italian, Prairie grass or brome (lucerne grass mix).
- When a lucerne stand is finished, crop the area for at least 1–2 years to deal with weeds.

Lucerne for deer

Moot said that although there is a shortage of data on using it for deer, his advice about lucerne management applied to all stock classes. He has worked with deer farmers in North Canterbury, the Mackenzie Country and Central Otago who use lucerne as their main feed source, mainly dryland farms with some irrigation.

"Lucerne often works better for deer and I wonder why it hasn't been used more. I've never seen a bloat issue, everyone reports good liveweight gains and it has flexibility.

"It is protein rich and keeps its quality longer than grass; it's also deep rooted and drought resistant.

"If it's getting away you can take a cut of lucerne and feed it at some other time, although we don't want to be making silage and baleage if we don't have to. The cheapest form of food is always direct feed."

Moot noted that lucerne also requires sound management and isn't suitable for set stocking, needing short rotations to allow for regrowth.

In keeping with the key theme of feeding, the workshop rounded out with a lunch of biblical proportions and a chance for local deer farmers to catch up on the local deer farming scene. Several also availed themselves of an opportunity to have a look over a set of new cattle and deer yards next door – with some new deer yards overdue to be built in CHB, this also provided some food for thought.

Farmer feedback

Duncan Holden (Ongaonga) was very impressed with the workshop and agreed the forage system proposed by Moot also related to deer. "We don't grow lucerne so I am here to find out if it will fit with what we do. The trick is to have enough area so you can rotationally graze it with deer. We currently have chicory, new grasses, peas, maize and grain. In summer we grow 28–30ha of chicory with irrigation."

Duncan Holden: Interested to see if lucerne fits his system. Photo: Vivienne Haldane

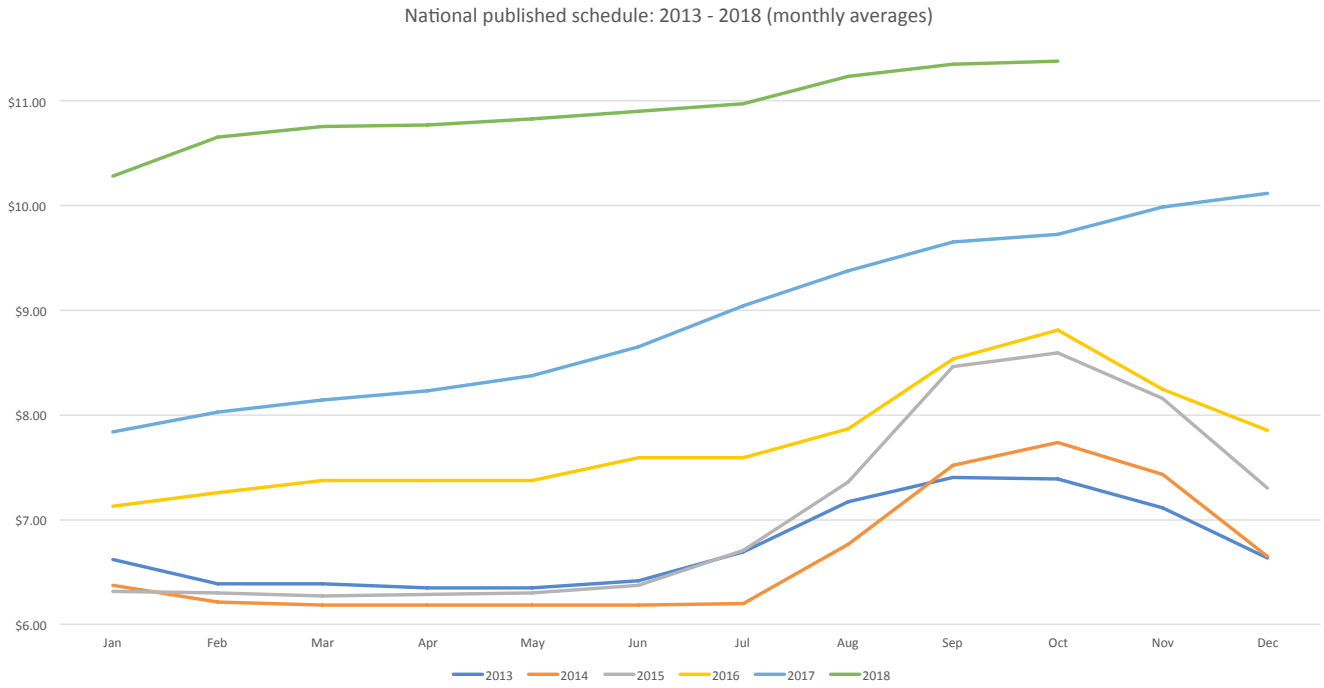
Glenn Sirett (Tikokino) said he'd learned that you can push out and grow more lucerne than you think you can. "We are all confined by the idea that lucerne only grows between certain months but I think with global warming lucerne is going to be more user friendly as its growing season will increase with the warmer days. It's not an overly expensive crop either, when you compare it with brassicas such as Pasja or rape. Besides, you get more years out of it. The information about nitrogen was interesting; I can see that's a big factor too."

He was impressed with Moot's passion for his subject. "He is very inspiring – this will put lots of fire into people."

Dan Mans (Tutira) said, "This type of cropping technology definitely adds value to what I do. Farming is a competitive market and if you want to be a good farmer you've got to be on top of your game."

- Sources: Additional information courtesy of Anyika Scotland and Richard Hilson. ■

Market update: Venison schedule



Tasting Auckland

by Ali Spencer, *Deer Industry News* contributor

Auckland foodies got a taste of New Zealand farm-raised venison from ambassador chef Neil Brazier in early November as around 30,000 of them descended on the Taste of Auckland festival at the city's Queen's Wharf.

There was opportunity for attendees to taste and discuss venison's merits with Neil Brazier (right) after the demonstration.

Looks good enough to eat! One of the plates from the Chefs' Secrets masterclasses.

FORMERLY WITH PETER Gordon's Sugar Club restaurants, Neil Brazier is taking some family time out before starting a new venture, neatly fitting with the timing of the event, now into its tenth year.

Brazier's skills were on show during a demonstration in the Taste Theatre, where he showed 100 people how to cook venison roast with spiced beetroot, baby carrots, asparagus and butter crunch (see recipe on page 25). Another 48, who attended his Chefs' Secrets masterclasses, got the opportunity for more hands-on culinary insight, cooking the dish alongside the chef.

Involvement in the activity also led to an introduction for New Zealand venison to a dozen of Auckland's hottest restaurants, which set up kitchens on the wharf where people could try their signature dishes. Modern yum cha restaurant Culprit served up a venison carpaccio. DINZ Venison Marketing Manager Nick Taylor – who organised and attended the activities – says the dish "was delicious". Another restaurant, The Smoke Room at the Sawmill Brewery, which specialises in slow-cooked meats, offered venison ribs.

Organised by DINZ in conjunction with Taste of Auckland, the aim was to get New Zealand farm-raised venison in front of Auckland's foodies, explains Taylor.

Representatives from Silver Fern Farms and Greenlea Butchers, which now stocks Firstlight venison products, were also at the show.

"We made sure there was plenty of venison available for sampling through the canapés served to all 6,500 VIP corporate-hosted visitors. The farm-raised New Zealand venison logo was also visible in printed material, on the website and on social media."

Several lucky visitors won venison packs at the various sessions. These contained Woodburn Venison Mince and Silver Fern Farms Roasts, along with wine, oils and seasoning. ■

A lucky few won this tasty farm-raised venison goodie bag containing everything they needed to whip up delicious meals.

Roast venison with spiced beetroot, baby carrots, butter crunch and star anise jus

by Neil Brazier, Ambassador Chef

Venison roast

1 x 400g packet venison roast

Bring venison to room temperature, pre heat oven to 180°C, remove from packet, brush with oil, season with salt and pepper. In a frying pan on high heat, seal the venison quickly on all sides, then place on an oven tray. Cook in the oven for 8 minutes on one side and then turn over and cook for further 8 minutes. Rest on chopping board for 10 minutes then slice.

Spiced beetroot puree

1 tsp	Cumin ground
1 tsp	Coriander ground
1 tsp	Cinnamon ground
¼ tsp	Chilli
2 tsp	Flaky sea salt
4 Tbl	White wine vinegar
1 Tbl	Soft Brown sugar
500g	Beetroot, cooked
150ml	Water
250g	Ricotta

In a pot on medium heat, sweat off the spices, salt and chilli in a little cooking oil for 30 seconds. Add all remaining ingredients except the ricotta and bring to the boil. Cook for 5 minutes until most of the liquid has evaporated from the beetroot mixture. Place in food processor, blend till smooth and add the ricotta. Taste for seasoning.

Leave at room temperature or, if making a day or two in advance, refrigerate and bring out to room temperature for use.

Baby carrots

200g	Baby carrots
1tsp	Coriander ground
1tsp	Cumin ground

Place baby carrots in a pot, add enough cold water to just cover carrots, add salt, place on high heat and bring to boil. Drain carrots when they come to the boil. Place on an oven tray and coat liberally with cooking oil, coriander and cumin. Mix together and roast in oven at 220°C till the carrots are caramelising.

Butter crunch

150g	Butter
50g	Skim milk powder

Bring butter to boil in a pot.

Add in milk powder. Stir until golden brown, pour through sieve and then place the solids on to baking paper, spreading them too cool evenly.

Star anise jus

1	Brown onion, sliced
10	Garlic cloves, cut in halves
4	Star anise
100ml	Red wine
400ml	Beef stock

In a frying pan on a medium/high heat, put 50ml of oil, and cook garlic halves till brown all over. Then add in onion and star anise, season with sea salt and a generous amount of cracked black pepper. Stir till caramelised; at this point the garlic cloves should be soft and sweet. Add red wine, reduce until nearly all evaporated and then add stock and reduce until thick. Remove the 4 star anise before serving.

To plate

I also have served the dish with asparagus lightly blanched in salted water, at room temperature and a little soft goat's cheese which adds a little bit of sharpness to the dish and brings out many flavours. ■

Flavour pairing science reveals exciting combinations

by Ali Spencer, *Deer Industry News* contributor

What do oysters, kimchi, rose and emmental cheese have in common? It turns out their flavours are all good pairings with Cervena® venison.

THESE NOVEL COMBINATIONS have emerged from applying science to aromas, also confirming that the best flavour pairings for pan-fried Cervena venison are indeed the delicate flavours associated with spring and summer dining.

Inspired by *Fat Duck* chef Heston Blumenthal's work on flavour pairing, Belgian food technology company Foodpairing® was co-founded in 2009 by Michelin-star chef and culinary scientist Peter Coucquyt, bio-engineer Bernard Lahousse and business developer Johan Langenbick. Using chemistry, physics and data science, the team has developed an innovative platform to calculate surprising food and drink pairings for chefs and the food industry. Using advanced algorithms, for which patents have been applied, entirely new, scientifically based and fully customisable recipes can also be generated.

With, on average 80 percent of flavour experience down to aroma, Foodpairing's method uses gas chromatography mass spectrometry (GC-MS) to analyse the aroma characteristics of a food item.

The aroma profile of raw and pan-fried Cervena was recently analysed under commission from DINZ.

"This was initially undertaken to be used during the Summer Cervena promotion but I see it as a great tool, which can be used in a number of markets," explains DINZ Venison Marketing Manager Nick Taylor.

There were four steps to the work: analysis of the aromas associated with Cervena; establishing the aroma profile; comparing the aroma intensity and complexity to similar products; then finding out which flavours most distinctively match the Cervena profile.

Belgian chef Peter Coucquyt, co-founder of the global Foodpairing platform.

Foodpairing's analysis identified 14 main aroma types, which between them have around 70 subordinate aroma descriptors. Initial analysis revealed grass-fed raw Cervena is predominantly determined by green, dairy and caramellic notes, with

Peter Coucquyt demonstrated how well pan-fried Cervena paired with kimchi, lettuce among other ingredients in a taco at the workshop.

descriptors of butter and onion, and undertones of phenolic acid and cucumber.

"This is because raw meat contains a lot of lipids, which are precursors for aroma molecules and their oxidation," explains Foodpairing's Peter Coucquyt. Aldhydes, for example, have a green, grassy, fatty smell, 1-octen-3-one has a mushroom, earthy and vegetable smell, while trans-(E)-4,5-epoxy-2-decenal has a more green, metallic, blood aroma. (Z)-1,octadian-3-one smells like geraniums, while citrusy notes have a more green, waxy smell in raw meat. Another 4-hydroxy-2,5-dimethy-3(2H)-furanone is responsible for the meaty smell, he explains.

"The animal and phenolic smelling molecules can be attributed to the deer's diet."

However, after pan-frying, the aroma type adjusts to caramel, with less prominent dairy, nutty and buttery descriptors and heightened rose, honey and floral flavours.

"Many of the aroma molecules present in raw meat are precursors to the typical savoury, meaty molecules that are developed in the process of pan-frying the meat," explains Coucquyt.

"The three most important chemical reactions that occur during this process are the Maillard reaction, Strecker synthesis

Foodpairing's aroma wheels showing how raw Cervena's cheesy and grassy notes (left) change to the characteristic caramel, nutty and cheesy notes after pan-frying (right).

and caramelisation. Pan-frying not only creates new molecules but also changes the concentrations of those already present in the raw meat, such as the green, fatty and cucumber-like aldehydes."

When comparing the profiles of pan-fried Cervena with wild Belgian product, the analysis showed Cervena has a less complex aroma and a much more subtle flavour with stronger caramel and nutty and less distinctive floral elements. The aroma of the Belgian venison, however, was more intense and complex, as might be expected from a game product.

While different cooking methods would present slightly different aroma profiles, what is most interesting for Taylor is the analysis confirmed Cervena is less intense and complex than European deer meat, which makes it more suitable for the fine and delicate flavours of spring and summer.

"While we already knew this, it gives us science-based evidence to guide us further towards presenting a distinctive flavour profile for Cervena in the summer programme," says Taylor.

Coucquyt and his team then used the Foodpairing Flavour Database to establish the best and most distinctive pairings of products that share key aromas – ranging from zero percent for no-match and 100 percent for the best match.

"We found the most important drivers for the pairings with raw Cervena are the orange, grass, floral and buttery aromas, while the pairings with pan-fried Cervena are mostly driven by orange, fruity and floral descriptors," he reports.

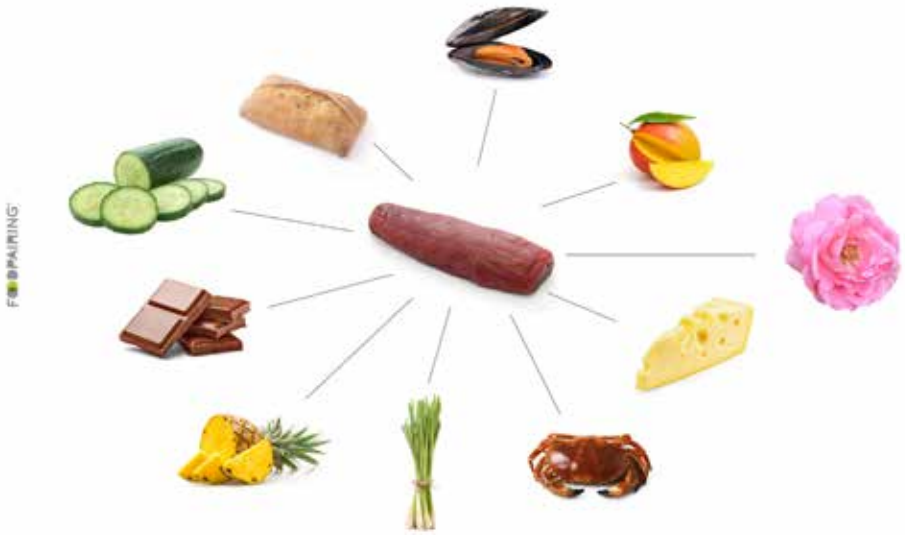
The analysis highlighted a number of interesting distinctive pairings for Cervena including, oysters, kimchi, rose and emmental cheese, notes Taylor.

As part of Foodpairing's work, Coucquyt hosted a workshop in Belgium for the sales staff from one of the wholesalers that sells Cervena during the summer. Taylor also attended. Participants were invited to try Cervena with a wide variety of ingredients. Feedback from the sales staff, many of whom are former chefs, suggested the Foodpairing approach was a novel way to present Cervena.

"Many of the sales team didn't realise Cervena could be matched with such a wide variety of ingredients," he reports.

"For the 2019 Summer Cervena campaign, we hope to undertake a number of Foodpairing workshops with chefs in Germany, Belgium and the Netherlands, as well as looking to use the findings in the North American and New Zealand markets."

- Chefs, foodies and the food industry can access the database at **www.foodpairing.com/en/home** ■



The analysis revealed ten distinctive pairings for raw Cervena, including ciabatta bread, mussels, cucumber and chocolate.

Saliva driver: Look for CARLA

If you're buying sire stags this season, ask your breeder if they have the CARLA® research breeding value (rBV) available for sires that catch your eye.

CARLA IS SHORT for **Car**bohydrate **L**arval **A**ntibody response. It refers to an antibody that the immune systems of deer (and sheep) produce in response to infection by gut parasites. The antibody attacks the carbohydrate sheath that protects the larvae when they're on pasture.

Some animals produce a higher CARLA response than others and this trait is moderately heritable in deer. That's good news because it could potentially help reduce dependence on drenches, although it's unlikely to mean we can stop using drenches altogether. However, lower parasite burdens for deer might change the way we drench.

Sampling easy

Measuring the CARLA response in individual animals is fairly easy for breeders because it's expressed through mucosal membranes, so a saliva sample at 10 months of age is all that's needed. The response increases with age in R1 deer so long as there is a parasite challenge.

Because the response is heritable and breeders can select for it, some are now publishing the CARLA rBV. CARLA is positively related to R1 liveweight, but this is a relatively small effect, accounting for 10 percent of variation in R1 growth.

A word of caution

The CARLA rBV is a step forward, but we aren't all the way there yet. That's because we still need to establish a link between CARLA levels in deer and ***how*** they might protect against nematode parasites. In lambs there's a direct correlation between a higher CARLA response and lower faecal egg counts (FEC), which in turn means fewer infective larvae on pasture.

Finding evidence of this effect in deer is still a work in progress. (AgResearch is quantifying the impact of high and low CARLA on parasite burdens and FEC output this coming year.)

Meaning of the CARLA rBV

The CARLA rBV is centred around a zero value, but breeders have been using it in selection decisions. The current average value is about +35. A higher value indicates a greater response. For animals in the top 10 percent, go for rBVs of 150+ (November 2018 sire summaries). Unlike many other BVs, there is quite a high top end due to the nature of the response, with the occasional animal exceeding +400. Negative values will bottom out at around -100.

See **deernz.org/deerselect** to find CARLA rBVs.

• Acknowledgement: **Jamie Ward** for assistance with article.

Borlands receive award in their own patch

by Phil Stewart, *Deer Industry News* Editor

Some 18 months after Shabor Ltd was announced as the winner of the 2017/18 NZ Landcare Trust award for excellence in sustainable deer farming through action on the ground, the award has been formally presented where it should be: on the winners' home patch.

NZ LANDCARE TRUST chief executive Dr Nick Edgar and award judge Janet Gregory (also of NZ Landcare Trust) came to a well-attended winners' field day on 9 November to make the award at the Oparau farm of Steve and Judy Borland and son Chris. (Shabor also won the Premier Elworthy Environmental Award last year.)

Edgar said the judges had been inspired by the careful planning and attention to details such as the siting of fencelines to minimise runoff, as well as protection of native vegetation and biodiversity and their understanding of animals' requirements.

The NZ Landcare Trust award was accepted by the Borlands on behalf of Shabor. The other partners in the velvet breeding and growing business, Bob and Jackie Sharp couldn't be there because of, well, velvetting at their Whakamaru farm.

It's been a torrid and busy time on the Oparau farm since the award was announced last year, which is why it took a while to

Steve Borland (centre) prepares to plant a Tanekaha (celery pine) to mark the family's environmental awards. He is accompanied by (from left): DINZ Chair Ian Walker, Chris Borland, Judy Borland and award judge Janet Gregory, NZ Landcare Trust.

continued on page 30

Shabor: continued

arrange the on-farm day. A flood in the Mangahoanga stream that skirts the property reached the top of the deer fencing and blew out about a year's worth of the work the Borlands had done to protect it. Several packets of posts were lost – swept by the flood

Yearling hinds at Shabor's Oparau property.

out towards the sea. But they have bounced back, repaired the damage and now expect to have the stream completely fenced off from stock by March next year.

Lanes and a ring road connecting the whole farm have now been completed and most of the fencing – there's been about 35km done since the farm was bought in 2014 – is done. Capital fertiliser has also been a major investment – an estimated $1.2m since the farm was purchased. A big development has been a strategically located sediment trap, which Steve Borland estimates has already captured 20 tonnes of sediment.

This quiet looking stream took out a year's worth of fencing work during a big flood.

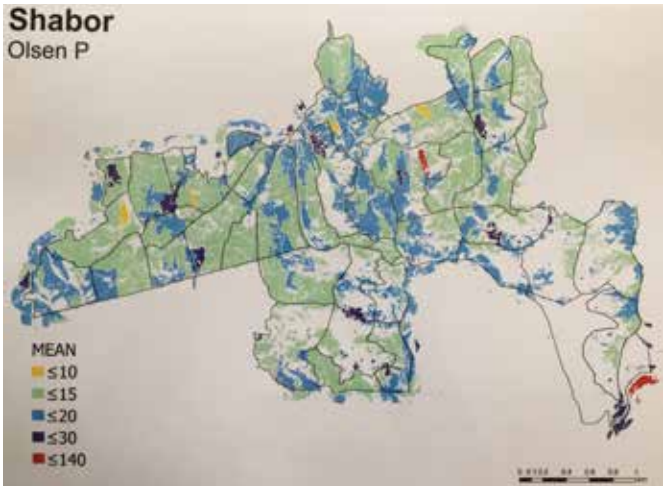
Now that they've got to know the farm and its capabilities better, Borland is more than ever convinced that stags and beef cattle don't belong there because they would damage the volcanic soils.

He's also continuing to rule out any cultivation and cropping for the same reason. Stock graze grass and clover year-round and that works fine. (The clover content in pastures has continued to flourish as fertility levels have improved.)

And while he cuts plenty of baleage, he made an early decision not to go down the self-feed silage pad route. Apart from a few sire stags at Oparau, all of the 1300 velvetters are kept at the Sharps' Whakamaru property. The size of the velvet breeding herd at Oparau might be scaled back a little, as the velvet herd is getting as big as it needs to be.

The other major enterprise on the farm is the Wiltshire sheep flock, which complements the deer nicely and leaves a light environmental footprint. It was "shearing" time during the visit, with most of the fences draped in the wool from the self-shedding breed. Borland said there's friendly rivalry between the velvet breeding and sheep enterprises, and both are doing well at present. Shabor is now cutting more than 7 tonnes of velvet.

Accepting the award, he praised NZ Landcare Trust, who had offered the entire local DFA branch assistance with developing their Level 1 and 2 Farm Environment plans using the Beef+Lamb template. Ravensdown and Massey University have also been involved with the farm's environmental work, with hyperspectral imaging showing grazing patterns and precisely where fertiliser is and is not needed. Borland said this intelligence alone was saving



This Olsen P map using hyperspectral imaging highlights the areas that still need fertility lifting.

them 15 percent on their fertiliser bill.

Borland has always been prepared to speak his mind within the industry and in this case also had praise for DINZ for its responsiveness to his pleas to do more about environmental work at a national level. "With DINZ it's very easy to talk to the man at the top [Dan Coup]. It's been good to see we now have Lindsay Fung working full time on environment issues and also Phil McKenzie helping get the environment groups going."

He is from an engineering background and joked that "it's why all my gates only have two thou' of clearance". More seriously, he's a strong believer in using good evidence to inform his farming practice. "I like to use science, so we don't have to work so hard".

Water quality research

The Oparau farm is one of 10 farms, including three in the North Island, to be taking part in the AgResearch Hitting Targets programme measuring the impact of deer on water quality in high country environments.

Geoff Asher, AgResearch senior scientist, attended the field day and said the location of point sources for damage would be a priority in this "gnarly" catchment. He said the research involves sampling several times a year at GPS-defined sites, with water tested for sediment, *E. coli*, nitrogen and phosphorus. The farmer also takes monthly samples at the exit point of water from the farm. He said conditions vary widely over time, which is why it's important to sample over a long period to get a better picture of what's going on.

"It's too early to see any trends but we have already had some

Geoff Asher.

Steve Borland, with the new sediment trap in background.

unusual results. What you think you see is not necessarily what is actually there, so you have to drill down to find out what's going on. For example, you can't see some of the pollutants in the water and with bugs like *E. coli* we sometimes need to find out what sort of animal is the source – ruminant or avian."

Asher said it's rare to find a "pristine" stream environment when doing a stream bank assessment. "Deer won't wallow in running water but they will happily find a bog nearby."

He said "tongues" of bush extending down near streams might look nice but aren't helpful where deer are involved. "They can camp in the bush and that'll become a contamination source. These are better fenced off."

"We weren't ready"

Steve Borland, like many entrants to the environment awards, claimed the farm was nowhere near ready to be entered. In actual fact no environment project is ever complete. Being part of a biological system, they are all works in progress and there was abundant evidence to show why this farm was picked not only for the NZ Landcare Trust Award but also the premier Elworthy award.

Thanking his wife Judy and son Chris for their support, he concluded: "you often hear about farmers getting into a bit of a dark hole. It can happen out here in the wind and the rain. But then the sun comes out again and you just get back out there and get on with it."

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Shabor: continued

Congratulations from environmental leader

One of the guests at the field day was sheep and beef farmer Graeme Gleeson, Beef+Lamb NZ's Northern North Island Farmer Council member and member of 'Farmers for Positive Change'. Gleeson is also part of the Government's Freshwater Leaders' Group, which has been set up by the Ministry for the Environment to inform freshwater policy. (The deer industry is directly represented on this group through Mandy Bell.)

Gleeson was struck by what he saw at the field day, and passed the following comments on to DINZ.

Graeme Gleeson.

"I congratulate DINZ for the manner you are promoting farming excellence, being mindful and proactive about the impact productivism may have upon the natural environment, yet ensuring the deer enterprise remains profitable.

"I had the pleasure of being invited to visit Steve Borland's farm at Oparau to see first-hand a dedicated, responsive farmer brimming with positivity, walking the talk, providing leadership and direction by example on his own volition, and taking proactive ownership of the impacts the farm system and management has on the environment.

"This demonstration of moral responsibility without being coerced and then going beyond statutory obligation is itself a story that must be witnessed and recited to a wider audience – who are unfortunately often ignorant, misinformed or blissfully unaware that such deeds are commonplace – and repeated by many fellow exemplar farmers like Steve Borland.

"The day was a living, robust example that good environmental practice is fully compatible with high-performance farming while enhancing profitability. The farm business is right sized, having a good stewardship fit with the available natural resources, incorporating the principle of sustainable intensification. Farmers should not fear well-balanced environmental regulations, or see them as an obstacle to developing their farm business.

"I salute your boldness in leading this conversation and encourage you to proceed further."

GM free is what customers expect

From 1 January, a non-GM feeding standard for Cervena® venison kicks in. It will allow venison marketers to answer "yes" when customers ask them to confirm that Cervena comes from deer that are not given genetically modified (GM) feeds.

If you're supplying deer for Cervena, you need an assurance from your feed supplier that their products contain no GM ingredients.

"IT WILL ONLY affect farmers who feed maize or compounded meal, pellets or nuts to deer that could be processed for Cervena at three years of age or younger. They will need to get an assurance from their feed supplier that their products are non GM," says DINZ Venison Marketing Manager Nick Taylor.

"If you feed your deer solely on pastures, crops and silage, nothing changes. All New Zealand-grown feed is non GM.

"Also, if you feed your deer on imported feeds made from crops for which there are no GM varieties, there is no need to have non-GM assurances. But merchants we have spoken to are happy to provide them on request."

The reason for the new standard is customer demand. It is not a judgement on the safety or otherwise of GM crops.

"Quite simply, leading chefs and affluent consumers prefer to buy foods they perceive as natural. It is one of the reasons why they pay a premium price for Cervena," Taylor says.

"'Natural' means our Cervena deer are not given hormones or growth promotants – claims we have made for Cervena since it was launched 25 years ago. But times change and affluent consumers now take 'natural' to also mean GM free. That's why the non-GM feeding standard is being introduced."

The five Cervena licensees – Alliance Group, Duncan & Co, First Light Foods, Mountain River and Silver Fern Farms – asked for this change.

The proportion of the kill sold as Cervena varies from marketer to marketer and by time of year. But all deer that could be slaughtered at three years or younger are eligible for Cervena if they are fed only GM-free feeds.

The licensees say they will still process and market deer that can't be certified as non GM, but these will be ineligible for Cervena markets.

The GM-free standard heralds the tightening of Cervena standards generally. From the start of the next venison season, on 1 October 2019, all farms supplying Cervena will need to be on the NZ Farm Assurance Programme (NZFAP) or a company QA programme equivalent to the DeerQA on-farm standard.

"Like the GM-free standard, the requirement for auditable on-farm QA comes from customers," Taylor says.

Non-GM feeds for deer

Cervena deer can be given feeds based on the following ingredients that are known to be GM free:

NZ-grown

All arable, forage & horticulture crops

Imported

Barley
Beans
Copra meal
Oats
Peas
PKE
Sunflower
Tapioca
Triticale
Wheat (bran, broll, pollard)

Imported feeds that could be GM

These imported feeds are available from both GM non-GM sources. Before feeding deer with products that include these ingredients, ask the supplier for a certificate or letter confirming they are non GM.

Alfalfa (lucerne)
Canola
DDG (Dried distillers' grain)
Distillers' syrup
Maize (corn)
Molasses
Soybean

Imported GM maize is sometimes sold whole or kibbled as stock feed. Always get a non-GM assurance from the supplier before buying maize as feed for Cervena deer. ■

DeerPRO moves to DINZ

After twelve years as a standalone company, DeerPRO (formerly Johne's Management Limited) is being incorporated as a branded unit of Deer Industry New Zealand.

These former DeerPRO directors are remaining as an advisory group. From left: Murray Coutts, Richard Hilson and Simon Wishnowsky.

DINZ CHAIR IAN Walker advised DeerPRO of DINZ's intention in May and the change took effect from 1 October.

DINZ is the sole shareholder of DeerPRO. The change comes after consulting with the New Zealand Deer Farmers' Association and the venison processing companies over the past twelve months.

It offers cost savings and a streamlining of DeerPRO's governance structure in addition to a better funding model.

Project Manager Solis Norton is excited about the change. He says it is a natural progression to have the programme more strategically aligned with the deer industry's overarching goals and the various entities helping to bring them to fruition.

The programme focus remains firmly on the monitoring and control of Johne's disease to conserve the gains the industry has made. In addition, the venison productivity reports are growing in popularity. They are another way of extracting value from the national database of almost five million processed deer. Other value-add opportunities can be considered in light of the shift to DINZ.

Three of the former DeerPRO Directors will continue their guidance as an advisory group rather than a board. Murray Coutts and Richard Hilson (farmer representatives), along with Simon Wishnowsky (processor representative), offer a huge amount of industry experience and will ensure the change goes smoothly.

The DINZ chair has acknowledged the efforts and significant improvements to the programme brought about by current DeerPRO chair Ken Blair. On taking up the position, Blair saw the need to conserve the company's financial position. With his combined expertise in leadership, accounting and the practicalities of company management, he has led the programme through a change in funding and substantial cost savings.

The final accounts are a strong reflection of the company's improvement. They also reflect its adaptability to remain in step with the industry and provide value to stakeholders, qualities that will help establish it among other high-performing groups operating within the deer industry. ■

DINZ approved to move on biosecurity agreement

DINZ applied in July to sign the Government-Industry Agreement (GIA) for Biosecurity Readiness and Response. The board made the decision following consultation with levy payers.

THE MINISTER FOR Biosecurity Damien O'Connor accepted DINZ's eligibility to sign the GIA on behalf of the farmed deer industry, which paves the way for DINZ to sign whenever it is ready. DairyNZ and Beef+Lamb NZ have also applied to sign the GIA and have had their eligibility confirmed.

GIAs have been signed by many primary industries because they give them a say in whether and how the Government responds to an outbreak of an exotic pest or disease. In return, each industry pays an agreed share of costs for readiness and response activities.

Industries that don't sign won't be guaranteed any say, but could still get billed for their share of the costs of activities for which they are deemed to benefit. It is anticipated that DINZ will sign the GIA soon after DairyNZ and Beef+Lamb NZ. Presently the livestock sector is scrutinising the fine print of the deal to ensure the benefits and costs consulted on remain as anticipated.

DINZ policy manager Catharine Sayer says the GIA provides the framework for operational agreements (OAs) for cost-sharing for specific diseases or entry pathways. She says the livestock sector has already made considerable progress in negotiating a draft OA for foot and mouth disease (FMD) so, together with the beef and dairy sectors' experience of working with MPI on *Mycoplasma bovis*, it knows what it can expect from an OA.

If the draft FMD OA is executed in its current form, DINZ would be up for a 1 percent share of the industry costs, based on an estimate of the benefits it would receive. DINZ chief executive Dan Coup says the level of costs this would stretch to would probably be funded from existing levy income.

"The FMD formula would not be automatically applied to other potential exotic diseases like blue tongue or anthrax, but it sets a precedent that all participants would expect to have relevance," Coup says.

"If there was an outbreak of a chronic wasting disease (CWD) that only affects deer, the deer industry's share of readiness and response costs could be as high as 50 percent, and a levy rise may have to be considered. But under each OA an industry can set a cap on its contribution – the amount it believes it can afford."

Coup says an OA for CWD is likely to be DINZ's negotiating priority once the GIA is signed.

The NZDFA executive committee supported DINZ's proposal to join, as did the NZDFA branch chairs at their meeting in October 2017. Responses were also received from 22 individual farmers and processors, the majority of whom supported the proposal. ■

Succession planning workshops strike a chord

by Phil Stewart, *Deer Industry News* Editor

The days when the boys inherited the farm and the girls got a canteen of cutlery are long past, says Tony Hammington of Peer Review. Now the focus for succession planning is turning to ways of leveraging and growing an existing asset, not on how to slice up the pie, he says.

HAMMINGTON IS RUNNING workshops for deer farming families on succession planning and the strong response has shown there is big demand for advice on what can be a vexed issue.

The workshops were developed in response to discussion at the 2017 NZDFA Next Generation programme, where participants said farming families need more guidance on succession planning. It is a New Zealand Deer Farmers' Association initiative supported by the Ministry for Primary Industries' Sustainable Farming Fund and Deer Industry New Zealand.

At the time of writing, eight workshops had been held, attracting more than 60 family groups. A further four were scheduled, also attracting keen interest.

Hammington says there has been plenty of commonality between families in the issues discussed during the three-hour sessions. "It's best that families have those crucial conversations [about succession] early, before any sudden, unexpected losses of a family member occur."

He says the overall strategy for transfer of control and assets should be mapped out first. "The details of the financial structures should follow the strategy."

A positive experience

Nic and Barry Bishop farm sheep, beef and deer in South Canterbury and attended a workshop in Timaru. They found it a positive experience. "Other people asked questions that we hadn't thought of, so it was very useful," Nic says.

They have three children in their 20s, all working in agriculture. While they are not close to retirement, Nic says she and Barry want to start thinking more seriously about the long-term future – theirs and their children's.

"We have to work out what we want to do," Nic says. "You need to be able to secure your own future to be in a position to help your children with theirs."

While they've had discussions with their children about the future, she says they have to be ready for the conversation as well. "You need to get some education and work behind you before you really know what you want."

The workshops helped them clarify thinking about how financial structures such as trusts and companies can be put in place to manage succession. "We've put one of our children forward to go to another succession planning workshop and we're encouraging all of them to start thinking about it."

Malcolm and Kathy Cane have been farming deer at Reporoa since the 1980s and now breed top trophy sires. None of their three adult children is following them into farming – one daughter is overseas and the other teaches in New Zealand, while their son plays professional rugby.

The couple attended one of the workshops in Rotorua and also found it useful. Malcolm says even if children aren't going to get involved in the farm business, it is important that family members know how it all works and why. "It was a useful day because it made us aware of the issues that can crop up further down the track and also showed us some different options." Changing from a trust to a company, for example, created more flexibility because it was easier for others to buy shares in a business, Malcolm says.

Kathy also found the day useful. "It's all about risk management; having a good plan in place takes a lot of stress out of things for everyone involved. You can't just carry this stuff around in your heads – you have to get it down on paper."

Always question your assumptions

Also attending the Rotorua succession planning workshop were **Don and Liz Love**, who breed trophy, velvet and venison sires on farms at Rotorua and Mamaku. They have two daughters, one interested in the farm business, the other not.

Liz says the day stimulated them to do more about the "crucial conversations" with their family to get the process started in earnest. "What you want may not necessarily mesh with what your kids want – and they might have ambitions that you're totally unaware of. You should always question your assumptions because they may not be right!

"It's not just about the next generation, either. It's about how you want to spend the rest of your days and how the farm will support you through that, as well as providing your kids with something."

She and Don have made a huge physical, financial and emotional investment in their deer business over the past few decades and realise it wouldn't be easy to walk away from that in retirement. "We could just sell up and move to the coast to go fishing, but that would be a big wrench for us."

Another issue that came up during the workshop was the contribution of partners, many of whom have juggled off-farm jobs with work on the property. "A couple of women at the workshop felt very strongly about that. In some form or other, partners have been a big part of [a farm business's] success," Liz says.

She adds that everyone came away from the workshop with a new perspective on what they needed to do. "We went out for dinner together after the workshop and that gave us an opportunity to keep talking over the issues."

Deer museum open for business

by Phil Stewart, *Deer Industry News* Editor

The place of deer in New Zealand's history, landscape and farming economy is now getting the recognition it deserves with the opening in September of the World of Deer Museum in Wanaka.

THE VENTURE IS a partnership between Clive Jermy, Donald Grieg and Harry Yu and is housed next to Wanaka Airport using the separate entrance of the National Transport and Toy Museum.

Jermy says the museum is built around three themes: a world-class collection of deer antler, extensive information about deer species and the history of the animal in New Zealand, and an ever-growing retail range of deer-themed and associated products.

The antler collection may be familiar to those who visited the sale centre for Stanfield's. Jermy says he always takes the opportunity to visit some of the top collections in Europe, where the greatest known red deer antlers date back centuries.

"I've realised that our record heads now eclipse anything in Europe for weight, for number of points and for unofficial CIC score.

"That made the Stanfield antler collection very significant and I've always had a hankering to do something involving deer after Stanfield, so it made sense to share this amazing collection."

The education side of the museum includes 42 information panels, photos and paintings with narratives in English, Chinese and German. The story of the introduction of deer to New Zealand, the early days of venison recovery, live capture and farming are told, and today's vibrant and modern deer farming industry is also profiled with information about governance, research, products and associated activities such as safari. There are also some interesting items of memorabilia such as original cartoons by Scott and Bromhead, and a beautifully painted saw.

The retail shop features a collection of beautiful antler carvings from China, Puma knives from Germany and natural products based on manuka honey, fish oil, royal jelly and deer velvet.

Jermy now lives in Wanaka and is front person for the business, along with Harry Yu. It's open every day and online sales are also being developed. Visitors receive a personalised tour of the items on display and of course can tap into Jermy's extensive knowledge of deer and their history.

He says Wanaka is an ideal location for the venture, offering opportunities not available in nearby Queenstown and being very much in the heartland of the New Zealand deer story. ■

www.worldofdeer.com

Dry-ageing: Injecting flavour and tenderness

by Ali Spencer, *Deer Industry News* contributor

Dry-ageing, an ancient method of preserving meat, is having a bit of a moment in the culinary sun. Now it's being brought up to date for New Zealand venison by meat researchers at the University of Otago, offering the chance of a new venison product line.

THE APPEAL OF dry-aged meat lies in its tastiness. The flavours are enhanced in the ageing oxidation process, explains meat scientist Tanyaradzwa (TA) Mungure, who has become an expert in the subject since starting his PhD at the University of Otago in 2016. He won an award for a presentation on his work to date at last year's International Conference on Meat Science and Technology (ICoMST) in Ireland.

While hunters skin and hang the carcass, dry-ageing venison for commercial sale is not common.

"We're trying to modernise the process to make it more applicable commercially," the Zimbabwe-born researcher explains.

Mungure is working alongside his primary supervisor, associate professor Alaa El-Din Bekhit, a meat scientist, and associate professors John Birch and Alan Carne, in the University's Department of Food Science and Biochemistry to refine the process for New Zealand venison.

"We're looking at technologies to speed up ageing and Pulsed Electric Field (PEF) technology is great at that."

PEF is being used for the first time on venison to deliver high-voltage electrical pulses to improve its quality and reduce ageing time. It does this by breaking down the cell walls to increase cell permeability and speed up proteolysis (protein breakdown) during ageing, enhancing tenderisation.

A problem they are trying to solve is too much moisture loss during the process. "We're looking at new combinations of technologies and processes to control weight loss, including lowering the relative humidity," says Mungure.

After PEF, the venison is dry-aged in cabinets for 10 days at a controlled ambient temperature of 2–5°C, with humidity kept between 60–80 percent. Fans waft air around the meat at a constant speed and then it is wet-aged (vacuum packed) for 11 days.

"It's all about concentrating the natural flavours, which develop over time, while the product becomes more tender," says Mungure. The researchers also use novel nuclear magnetic resonance spectroscopic methods to monitor meat quality during dry ageing.

The research idea came about as a result of sensory evaluation supported by Alliance Group aimed at investigating whether consumers can differentiate between venison, beef and lamb. While the tenderness of all meats was appreciated by consumers, a large percentage were unable to differentiate venison from lamb.

"For those used to a wild venison flavour, we found farmed venison is not strong enough. We believe our dry-ageing techniques used on farmed venison could help with European game tastes, for example, bringing the product closer to what they are used to," says Mungure. "It may even open a new market."

He recently presented the latest findings at the ICoMST 2018 conference in Melbourne and expects to complete his PhD project in April 2019.

A lover of the outdoors and keen deer stalker, usually of fallow deer, Mungure is often found in the Blue Mountains near Tapanui. He came to Otago to do his PhD because of the opportunities offered for his particular interests. His work to date has been funded by the University and AgResearch.

"TA's combination of skills and passion about deer and venison is very rare," says Bekhit. "We would be very happy to hear from anyone who would like to collaborate on commercial and/or post-doctoral projects to retain his skills here once he completes his PhD."

Optimism sustained as new season begins

by Phil Stewart, *Deer Industry News* Editor

NZDFA branch chairs gathering in Wellington on 16–17 October were upbeat about the prospects for the new season.

THERE WAS AGAIN a welcome sprinkling of new faces, helping provide some succession pathways for the DFA leadership. Brad Travers (Elk/Wapiti Society), Holly Walter (Southland), Karen Middelberg (Hawke's Bay), Peter Young (Rabobank), Sam Bray (South Canterbury/North Otago) and William Benson (Otago) were all attending their first national DFA meeting.

For governance at the national level there was a plea to the meeting from the Selection and Appointments Panel (SAP) for more farmers to consider putting themselves forward as candidates for the DINZ Board. There was only one candidate (a sitting board member) when the most recent vacancy came up. And while the SAP was very happy with the quality of the candidate concerned, they would prefer to see greater interest in governance roles from the producer sector.

Reports from around the branches

Most branches reported good seasonal conditions with deer well set up for fawning. A common theme for many was the struggle to maintain membership, find new leaders and engage members in activities. The southern South Island branches were notable exceptions, with all reporting a busy year. The demise of the Top of the South antler competition for logistical reasons was likely to have flow-on effects for velvet competitions in other areas. Another common factor was the strong and positive influence of Advance Parties within branch areas, with DFA members flocking to regional workshops in most cases. In a number of branches, their own branch-initiated activity has significantly tailed off, however.

Velvet report – Rhys Griffiths

DINZ Market Manager, Asia, Rhys Griffiths told the meeting that the year ahead looks to be stable with consumption increasing in Korea and China. DINZ has budgeted for 725 tonnes this year, an all-time high. Although it is "awesome" that the supply is increasing, he warned there will be a ceiling for demand.

He said the market was showing good signs of diversification: 200 tonnes now goes into the healthy food sector, 250 tonnes to traditional oriental medicine, 250 tonnes into traditional Chinese medicine and 25 tonnes into "other". Griffiths would like to see the share of the healthy food and "other" sectors continuing to grow at the expense of the traditional markets.

With demand patterns changing so much in recent years, Griffiths said it was fair to ask whether current grading methods and guidelines were still relevant – that is being investigated.

Name that city!

Congratulations to Catherine Morrow who won probably the last remaining bottle of Moa's special run of velvet-infused craft beer for correctly identifying Taipei in a quickfire quiz. Moa's test shipment of the Red Stag Wheat brew to China was an instant success, selling out online within 48 hours.

Prospects in China were still positive, although there is still work to be done getting New Zealand better recognised as the place of origin. Griffiths said projections of 6.5 percent growth in the Chinese economy might be too high if a full-scale trade war erupts between China and the United States.

Chinese importers are somewhat nervous about the year ahead, so prospects for the year ahead are finely balanced, he added. "It's important that we keep the supply stable."

He said only Australia and New Zealand can export velvet into China at present, which gives us an edge over old rivals such as Russia. "The Regulated Control Scheme (RCS) really underpins our pathway to markets in China."

In Korea, new factories are targeting traditional markets using high-tech processing methods. One of these factories is using up to 100 tonnes of New Zealand velvet for this. In-market partners in Korea such as LG, Omniherb and Chunho Food are actively promoting the "New Zealandness" of our product. The fact that just one of these companies in the healthy food sector – LG – has 22,000 sales agents, gives an idea of the enormous scale and potential of this market, Griffiths said.

He said 50–60 percent of New Zealand velvet that goes to China is re-exported to Korea. While that is still a lot, it's well below the 80 percent it used to be. The other dynamic in our favour is the gradual reduction in the tariff on processed New Zealand velvet into Korea. No other country enjoys this advantage and Korean companies are now actively encouraging more processing within New Zealand.

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Branch chairs at their Wellington meeting.

Overall, Griffiths said the underlying conditions are good. The main risks are disruption to the supply chain and any sudden spike in supply.

DINZ Board member and PGG Wrightson National Velvet Manager **Tony Cochrane** said New Zealand enjoys a good image and strong brand in Asian markets, with our velvet valued above product from Russia or China.

He said the RCS is the best thing to have happened for our velvet industry in a long time, and helps distance our product from some of the corruption and illegal trading that still exists.

Cochrane echoed Griffiths' warning about volumes growing too fast. "It's not an issue yet but we could reach a limit."

While New Zealand velvet is fashionable right now, he warned that this can change. Dr Lee of Lotte Home Shopping Network was out here last year and very impressed by what he saw in Hawke's Bay at Te Maire and Forest Road Farm. The fact that Dr Lee was still put off Russian velvet because of the Chernobyl disaster more than 30 years ago shows how a "black swan" event like that can have very far-reaching consequences.

In general discussion, the prospect of centrally controlling national production levels was raised, but there appears little appetite for that option. Cochrane reminded the meeting that an attempt to create a single-desk marketing system for velvet in New Zealand had been an abject failure.

Griffiths noted that a restriction on export of bottom tynes had been considered a few years ago but could have put us foul of World Trade Organisation rules. A suggestion to divert lower-value bottom tynes into the petfood trade definitely had potential, however.

He urged the industry to steer clear of commodity traders who exploit volatility for their own profit.

NVSB report

Reporting on behalf of the NVSB, **Ian Walker** congratulated the industry for stepping up to the challenge and upgrading their harvesting and storage facilities. "We should be proud of how the industry has responded."

About 300 farms had been audited in the first year, although with more than one-third requiring follow-up. Walker confirmed that starting this season the farm is liable for the $350 fee where a re-visit is required by an auditor. Where a farm fails to take remedial action after an audit has been failed, the Ministry for Primary Industries can prohibit the sale of velvet from that farm. (That measure has not been required thus far.)

The NVSB fee for each accredited velvetter has been lifted to $250/year. Walker confirmed that there would be no discount available where there was more than one accredited velvetter on a particular farm.

While all sheds are being assessed against the requirements of the RCS, routine audits of drug records, welfare standards etc continue, with farms revisited once every 10 years on average.

Venison report – Nick Taylor

DINZ's Venison Marketing Manager, Nick Taylor reported that work under the P2P programme continues in China with two companies (Alliance and Mountain River) now active in the market. (For a report on the P2P Summer Cervena® programme in

Advance Parties remain in the vanguard of practice change.

Europe, see the October/November *Deer Industry News*.)

Work to develop a venison protein bar is also underway, under the P2P banner.

Promotional work in the US market included support for the National Restaurant Association fair, which attracts more than 41,000 attendees, providing a great shop window for Cervena.

Promotional work with chefs has continued.

Development of a rib-based product was underway in North America, Taylor reported.

Graham Brown has been to Canada and the United States following a stint in Europe, getting a spot on morning TV and doing in-store tastings.

Taylor said there has been good feedback from joint promotion at Pure New Zealand cuisine events and culinary schools throughout the United States.

He said venison promotion in this country had scored a coup with a new book published by food writer Lauraine Jacobs that features venison on the cover, and more venison recipes than for any other meat. "Venison is hot right now – *Cuisine* and *Dish* magazines have also been featuring it."

Other ongoing promotion in the New Zealand market will include work with food writers and chefs, sponsorship of the Taste of Auckland food festival (including classes featuring venison by chef Neil Brazier, see report page 24).

Taylor said social media channels such as Instagram – favoured by chefs to show off their wares – are also growing in importance.

He also discussed the new non-GMO standard for Cervena, which comes into effect from next year (see page 33).

Passion2Profit (P2P) update

P2P Programme Manager **Innes Moffat** said an independent mid-term review concluded that:

"Overall, the governance and management of the P2P PGP are very capable and focused on results. The P2P has achieved its Output Logic Model short term outcomes for the period from the PGP's beginning in mid-2015 to 2018."

Translated, that was a pretty positive result.

A complex flow chart showed just how extensively the web of P2P activities and relationships has spread throughout the industry, both on and off farm.

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One example of exploring new venison markets was the development of a sugar-free venison protein bar. Moffat said a prototype was looking promising. "When we gave the DINZ Board some samples, they scoffed the lot."

The deer industry has got in behind the NZ Farm Assurance Programme, with venison exporters either adopting the standards or adapting their own assurance programmes to deliver equivalent outcomes.

Moffat said new standards under the programme will apply to Cervena from 1 October 2019, when "pasture-fed" will replace "free-range" and the GMO-free feed standard kicks in (see page 33). NAIT tags will be used to verify age more accurately under the new standards.

Under the Market-Led Production work stream, a wide range of rural professionals are being brought up to speed on the deer industry including farm visits. So far this year 120 rural professionals – bankers, fertiliser reps, vets, consultants and the like – have taken part in the familiarisation programme led by Dr Pania Flint.

Advance Parties (APs) remain in the vanguard of practice change. There are currently 27 groups, with the target being 30. A target of 15 regional workshops per year proved a bit harder to reach, with nine held in 2017/18.

Tony Gray (Chair, Central Regions) provided a vivid example of the value of AP membership. A shortage of weaners for purchase has forced him (and many others) to start breeding their own. Eastern genetics gave hind mature weights of about 130kg – more than needed. With the advice of his AP he's using Deer Select to source good English genetics to get mature weights back down to the 110–120kg range.

Gray also gave a shout-out to the Deer Feed App, which he used to calculate the feed requirements of 200 hinds on a crop of swedes. "I didn't believe that the 2.7 hectares would provide enough for 85 days, but it worked!"

Moffat said the ideas that came up during the problem-solving exercises at the national Advance Party Conference in Methven focused people's minds and showed the value of collaboration.

Refinement of deer production KPIs and the deer farm systems description, DNA "proofs" of the impact of high-BV genetics on commercial farms, DeerPRO venison reports, more Deer Facts and the forming of at least 10 environmental groups (similar to APs, but with a focus on environmental improvement), are among the ongoing market-led production activities.

P2P Deer Health Project Manager **Lorna Humm** reminded branch chairs that consumers rate animal health and welfare even more highly than environmental concerns and noted that deer health reviews are an important part of lifting standards to meet those expectations.

She was happy to report that farmers who were initially sceptical about the value of good animal health planning were now some of its most ardent supporters. Reducing losses while increasing the kilos of product going out the gate were the aims – and so was reducing the unnecessary use of some animal health products. "The philosophy [behind deer health reviews] is everything the deer need and nothing they don't."

Humm said the most potent way of spreading the word about the benefits of good animal health planning was for farmers to tell each other their stories. "We need to document those."

She is also working to get the next generation of deer vets on board, but cautioned that vet practices are businesses and won't invest in training young deer vets if there isn't a return – they need to be paid for their experience. "They won't send them to a [deer vet] Cervetec conference if there's no benefit. They'll be off to a dairy conference instead."

Red Meat Profit Partnership (RMPP)

Mark Johnstone and **Beau Neill** of RMPP told branch chairs about the Action Network being rolled out – a network of facilitated groups not unlike APs. So far 85 groups of seven to nine farms have been approved and will be focusing on areas like animal performance, financial planning and environmental improvements. KPIs identified for the groups are similar to those used for deer. Johnstone said the groups will be able to compare their year-on-year performance and benchmark within a region or farm class.

Chatting at the branch chairs' meeting are (from left): Mark Johnstone, Red Meat Profit Partnership, Innes Moffat and Lorna Humm (DINZ) and Beau Neill, Red Meat Profit Partnership.

Succession Planning

Tony Hammington of Peer Review talked about the series of Succession Planning workshops he's been running for deer farming families (see article on page 36).

What should we care about?

Former DINZ Chief Executive **Mark O'Connor** facilitated a workshop session for branch chairs to toss around ideas about the NZDFA's future role and priorities. There was good discussion and the following were among the issues people did want NZDFA to care about:

- enhancing the profile of the deer industry
- ensuring the ongoing financial viability of deer farming
- developing leaders and attracting talent
- succession planning
- fostering connectivity and knowledge sharing within the industry
- stepping in to keep up the momentum established by the P2P programme once the funding runs down
- encouraging best practice, especially in animal welfare and environmental enhancement.

NZDFA Chair John Somerville said the Executive Committee would look at these priorities and work out ways to implement these at local level. "It might change the way we interact with branches," he said.

The Pāmu Academy

West coast dairy farmer and General Manager of the Pāmu Academy, **Rebecca Keoghan**, gave branch chairs a frank and entertaining presentation on what the SOE is doing to improve its culture of safety and wellbeing.

She said a series of three fatal accidents among Pāmu farm staff was a powerful wake-up call. About one in three farm staff were getting hurt in accidents each year and a survey by an external consultant found a very poor "lost time injury frequency rate".

Keoghan said the academy has set in place a fundamental shift in attitude. "It's far more than just safety manuals and wearing helmets and high-vis vests. We are focusing on behaviour change. We've cut down the volume of messages and concentrated on the things that matter: critical hazards (the things that can hurt you) and managing the risk (the likelihood of it happening)."

She said it was important for staff to buy into the safety messages sent via communication channels that people can use and understand.

The Pāmu Academy provided a framework for change and prioritised mental as well as physical wellbeing.

"Our injury rate has halved, but we still have a way to go. It's still high compared with other industries."

For further information: **https://pamuacademy.co.nz**

Rising Stars competition

Branch chairs strongly endorsed the value of the Rising Stars competition and taking it under the wing of the NZDFA. Immediate past convenor, Bay of Plenty DFA chair, **Sandra Garrett**, led the organisation of this year's competition. She said it's well supported by entrants, sponsors and judges, and usually delivers a surplus.

Rising Stars has been a popular and successful event since its launch in 2007.

Thanks to politics, the competition has been kept separate from the NZDFA since its transition and spectacular reform led by Joe Crowley in 2007. It will now be picked up and run as a DFA event to extend that revitalisation and core purpose, especially in the two- and three-year-old antler classes, the main feature of this important event on the industry calendar. This would also bring financial transparency and a consistent format to allow easy transition between hosting regions, which has been somewhat informal to date.

The South Canterbury/North Otago DFA has pledged to run the 2019 competition if there are no other takers, although at press time the Otago DFA was developing plans to host it at the later date of Saturday 16 March, at Black Forest Park near Outram.

Garrett recommended a rotating committee of three to six people for the competition, membership provided by the host branch. She said the competition is "time consuming, but not hard to run and operates well under a simple clear set of standards and competition expectations".

There was some support for running the competition a little later than the current date of around 20 February as this comes at a busy time for many. Results can be put up immediately online and via social media so that information required for people wanting to buy semen for that year's mating is available as soon as possible. A printed version of the results could then be circulated with *Deer Industry News* in April, partly to support sponsors.

DINZ Board Q+A

Levy changes: Given the problems caused by *Mycoplasma bovis* for cattle farmers, David Morgan suggested the industry should accumulate a "war chest" by way of a 0.5c/kg venison levy, to help fund our part of a response to any biosecurity emergency. "We're in a good spot now, and that would be the time to do it." Ian Walker said the levy had already been set for this financial year (to 30 September 2019) but the Board would consider the idea when doing its 2020 budgeting.

Environmental stewardship: Ian Walker said great progress had already been made on farms and DINZ had committed an extra $260,000 for this work. This was woven into various cost streams, including work with local and central government, practice change and developing environmental champions. Dan Coup said the

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BCM: continued

deer industry should be seen as part of the solution, but "we're not telling our story well enough". The AgResearch high country water quality research project would put some science behind DINZ's work.

DeerPRO: These functions will be absorbed into DINZ. Ian Walker said the excellent resources provided through DeerPRO would be examined as part of a formal review. Coup said that if the costs and benefits didn't measure up, or modifications were needed, DINZ would act accordingly. Members of the original Johne's Management Ltd Board would be involved in the review of DeerPRO's functions.

GMOs: Dan Coup said the inclusion of GMO-free status as part of the Cervena standard (see separate article) merely formalised what's already done. The standards wouldn't be used as part of a proactive marketing strategy. Walker noted that definitions of GMOs aren't that clear. The new standard relates only to components of deer feed – manufacturers will be required to affirm that their products include no GMO materials. Walker said the standard won't preclude any future advances available through genetic technologies. There was concern that non-Cervena product might be assumed to have involved GMO feeds, by implication. Tony Cochrane said our markets already assume we are GMO free.

Government environmental policy: The freshwater package from the Government will likely include a new national policy statement on freshwater and a new national environment standard relating to biodiversity. Coup said practices such as steep land cropping, winter cropping and fertiliser application will be in the Government's sights as these are developed. The ETS is another issue coming up, and Coup said agriculture is likely to be incorporated in some way, with or without methane emissions. "Expect another avalanche of regulations on that."

Research progress

DINZ Science and Policy Manager **Catharine Sayer** updated branch chairs on science projects under way. (Earlier, more detailed reports on some of this work are in the June/July 2018 issue of *Deer Industry News*.)

Healthy brain ageing: Rodent-based research at the University of Otago is giving promising, but "not spectacular" results. The ability of velvet to help ward off the effects of ageing on memory by promoting blood vessel development in the brain is being tested.

Isotopic signatures: Work to develop a reliable country-of-origin test for velvet is being held up somewhat by difficulty sourcing enough sticks of velvet from other countries (Russia, China, etc).

Stem cell-mediated healing: Fundamental research into the biology of antler development continues at the University of Otago. Work may lead to development of an extract from pedicle cells that could be useful in biomedical research or research into human tissue regeneration.

Post-velvetting analgesia: Work continues to identify any existing products that might give a better welfare outcome. This research is important for maintaining the industry's freedom to operate.

Composition: Planning is underway to study the links between genetics, nutrition and timing of cutting and velvet composition.

RepaiRx: VARNZ no longer funds work on RepaiRx, but licensing terms are being developed with a company interested in developing a skincare product, while AgResearch is investigating whether RepaiRx could be included in a healthy functional food under development.

Velvet traceability: Finding a good reliable replacement for the current velvet tags is a major challenge. (The current tags are prone to breaking off when frozen.) Sayer said developing new tags will give an opportunity to improve traceability so that any food safety or contamination issues can be handled quickly and effectively. "It's better that we design a good system rather than having one imposed on us."

She said new tags must be light, resilient to damage, not damage velvet, be hard to copy, preferably presented in a sequential series allocated to the user, accommodate a scannable identifier, be food grade safe and affordable. A wide range of stakeholders are being consulted on the ideal new identification system, including the NZDFA, buyers, processors and exporters, MPI, tag manufacturers and others.

Options for a velvet traceability system to replace the current tags are being studied.

Options to date had been narrowed to a nylon cable tie similar to what's used now, or a waterproof wristband/luggage tie format. Sayer said exporters would prefer UHF chips to be included along with bar coding. It wasn't necessary to keep a lot of data with each stick, she said. That could be stored elsewhere.

"It would be logical for the first receiver [of the velvet sticks] to scan or manually enter tag IDs, reconciled against each velvetter's allocated range of velvet tag numbers. The velvet would become traceable to the farm, but not individual animals."

The system would be linked to electronic velvet status declarations (eVSDs). Sayer said the tag numbers of received velvet would be automatically deducted from the recorded range of numbers for that velvetter. If a velvetter had failed an audit, the remaining tags allocated to them would be "de-allocated", preventing them from raising an eVSD and thus protecting system integrity.

Sayer emphasised that this is still all at concept stage and needs to be fully evaluated, costed out and consulted on, with a central database designed and funding model set up. While it might appear to be a complicated solution to a simple problem, upgrading the tags provided an opportunity to show leadership and improve product integrity. "Industry support is essential," she said.

Branch chairs supported provision of an animal ID field to enable optional on-farm traceability to the stag.

Deer-specific oral drench: Development of an effective,

affordable triple oral combination drench registered for deer was continuing in partnership with Auckland company Nexan. While efficacy results were very good, there had been a puzzling aberration in the residue testing results. This is being investigated but the residue trial may need to be repeated, which would add cost and delays. The important thing was to show a smooth decay curve for any residues – an uneven curve raised alarm bells with regulators. Sayer said a fallback position might be to apply for registration including a withholding period past the time at which residue was last seen. This would still be preferable to the current default 90-day withholding period for an off-label triple oral combination.

Mini-bolus: AgResearch is continuing work to develop a mini-bolus for deer through DEEResearch and the Hitting Targets programme. A new formulation is being tried to improve efficacy and the treatment is also being tested against liver fluke. Results are expected around Christmas. Sayer said that if the triple oral drench doesn't make it across the line, the mini-bolus could be a useful Plan B. If the triple oral drench development is successful, however, it will be up to AgResearch to progress the mini-bolus project further if it wishes.

Deer Select: There's a lot going on under the hood with Deer Select and sire purchasers will be the winners thanks to more robust and accurate breeding values (BVs) and an extended range of traits making it easier to find the right combination.

Sayer reported a lot of behind-the-scenes work getting done, including better date of birth information (for greater accuracy), development of a meat module, the addition of a CARLA® research BV (rBV) (see page 28) and progress on genomic work to help identify the presence/absence of key genes. This would accelerate progress because it wouldn't be necessary to wait for progeny performance results.

She said there was pressure to include across-breed BVs although this creates technical challenges, especially for growth BVs. Across-breed BVs are however already available for some traits, including reproduction (e.g. conception date) and CARLA. An across-breed meat module has also been created.

A fertility BV based on scanning data is under development and a fawn survival BV is being considered.

The economic indexes (Terminal, and Replacement/Early Kill) are getting a makeover. These assign sires a dollar value per hind mated. Sayer said these encompass a wide range of traits and also need to take costs of production, heritabilities and correlations between traits into account. Ideally they should be updated every five years.

Facial eczema (FE) research? Sayer is contemplating the merits of research into FE in deer and asked for farmers to get in touch if they have concerns about the disease in their herds or any experience to share (catharine.sayer@deernz.org).

Minister Skypes in

Agriculture Minister **Damien O'Connor** dropped by, once again via Skype and took questions from the meeting.

On the ability of regional councils to meet the requirements of the new national statement on water quality, O'Connor confirmed the Government would give clearer direction than has been available to this point. He said the standards (such as swimmability) would provide meaningful measures of water quality acceptable across all communities. (In a later discussion on this, DINZ's Lindsay Fung noted that *E. coli* levels tend to be a proxy for swimmability, but this doesn't account for other serious health hazards such as *Campylobacter* spp. Fung said no single combination of metrics gives the perfect answer on swimmability.)

Agriculture Minister Damien O'Connor joined the meeting via Skype.

On the Emissions Trading Scheme, the Minister said agriculture was likely to be included, noting it would provide an opportunity to plant riparian areas or less productive areas in trees. He acknowledged it would change land uses, but did not want to see speculation based on the carbon market, where good land was given over to trees.

O'Connor posed a question of his own: was the deer industry happy with the current structure and behaviour of the meat industry? Tony Pearse replied on behalf of the meeting that the industry was happy with the way the companies were working

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BCM: continued

together in the venison sector, particularly through the P2P programme in new European markets. Pearse also noted the deer industry's gratitude to Beef+Lamb NZ for its sharing of the Farm Environment Plan framework.

Rabobank presentation

Hamish Midgley, Rabobank's National Manager Food & Agribusiness Banking, talked about rural debt trends, noting the bank has a 17 percent share of the New Zealand farm debt market. He said the dairy industry nationally accounted for about two-thirds of rural debt, although Rabobank had a lower weighting in dairy than this, and greater than average weighting in the red meat, horticulture and wine sectors.

He said the bank estimated the deer industry's exposure to debt was about $340m, of which Rabobank accounted for $140m, or about a one-third market share. Midgley noted that the bank sticks with sectors through both high and low cycles.

Hamish Midgley: Important for deer industry to show leadership.

There is a lot to like about the deer industry, he said, including its premium positioning, product diversification, high carcass utilisation, alignment with healthy eating trends and relatively low environmental impacts.

Product integrity was precious, he noted, citing the problems faced by manuka honey. "In China the sales of 'manuka honey' are about five times the volume of actual New Zealand production."

He said it was important for the deer industry to show leadership in areas such as market access and environment. It was also vital to manage the stories about the industry going via social media channels.

While agriculture as a whole faced big challenges including carbon neutrality by 2050, he said the deer industry was front-footing many of these issues.

On the question of farm capital gains, Midgley said it was unlikely that large increases would continue. He said greater restrictions on overseas investment and stricter environmental standards would cool down values. In addition, a lack of succession in many farming families was seeing more farms going onto the market, which could influence values. That said, he didn't expect a decline either.

OSPRI report

OSPRI National Disease Manager **Kevin Crews** updated branch chairs on Tb infection rates and testing. Nationwide there are only 32 infected cattle and deer herds in total, a "stunning" result. There are just two infected herds in the North Island, and overall only three deer herds, all in Otago.

Crews explained the deer industry is to be used for a pilot trial of risk-based testing, whereby the intensity of testing is proportional to the level of risk. The 12-month trial starts in March 2019 and will affect about 150 farms. If successful it will roll out next to Waikato, Bay of Plenty and Southland in the following year.

Kevin Crews: Drop in infected herd numbers a "stunning" result.

Three types of risk are assessed when deciding on intensity of testing: area risk (the amount of Tb in wildlife), residual risk (where there has been a previous outbreak) and movement risk (the amount of stock movement in an area other than to slaughter).

He said on-farm Tb testing is quite seasonal, leaving some gaps during the year. However, when combined with the surveillance at processing, good year-round cover is still achieved, he explained. The trial is to cover the Northland, Gisborne and Taranaki areas, which encompass three slaughter plants for deer.

Long term, on-farm testing is expected to cease altogether, Crews said. To compensate, training of meat inspectors to identify Tb lesions will be intensified.

OSPRI Chief Operating Officer **Matthew Hall** said many deer farmers had delayed scheduled Tb tests while they waited for the free testing regime for deer to start. This led to a "bow wave" of testing, with 654 herds being done between May and October this year alone. He said that by October, 141 farms were more than 180 days late.

On the plus side, health and safety issues on farms reported by testers are rare – only four out of the 654 herds tested. Hall said the rules don't specify that a crush or race need to be available, but handling facilities do need to be safe. "Farmers need to take some responsibility for this," he said.

And while deer farmers have been congratulating themselves on their high levels of NAIT compliance compared with cattle farmers (given the *Mycoplasma bovis* problems), the figures from Tb testers tell a different story. Hall said that among the 279 deer herds tested that had RFID scanning, only 77 percent of the animals had NAIT tags. While some of this might be a tag retention issue and some might have been animals going direct to slaughter, Hall said that on the face of it, this figure needs to be higher.

He said OSPRI is keen to help deer farmers improve NAIT compliance.

Environment

DINZ Environmental Stewardship Manager **Lindsay Fung** gave a quick rundown on environment-related activities. A detailed breakdown of regional council activities and likely effects on deer farming showed that seven of the 15 councils are introducing stock exclusion requirements in their regional plans, and five are specifying N-loss limits. Six councils, covering 80 percent of the national deer herd, will require farmers to have a farm environment plan – a good thing for deer farming.

Fung said stock exclusion regulations were still on the table,

although the new government had yet to make any moves on this. He said plans for a national accord on good management practice hadn't progressed past good intentions at this stage, although the deer industry's own initiatives were likely to have this well covered.

As noted by Damien O'Connor, Fung said agriculture was likely to be included in the emissions trading scheme. The passing of the Zero Carbon act about next April or May will be an important milestone.


Lauren Phillips, Beef+Lamb NZ.

A national policy statement about biodiversity on private land could also have ramifications for the industry, he said.

The Environmental Management Code of Practice has had excellent feedback since its launch in May. Fung said the Deer Industry Environment Groups being set up under P2P will help farmers get over the line with their Farm Environment Plans. Another route to this outcome is the Beef+Lamb NZ LEP workshops.

Beef+Lamb NZ (B+LNZ) South Island Environment Policy Manager **Lauren Phillips** led a good discussion on winter grazing and the consequences of any restrictions. B+LNZ is forming a policy on winter grazing, which will be taken to the Minister to show what the industry is doing under its own steam.

She said councils usually focused on nitrogen losses, but phosphorus was also coming into the mix in Canterbury, which provided fresh challenges for drystock farmers trying to avoid any caps on production.

Discussion points included:

- Winter grazing shouldn't be confused with feed lotting or forage cropping – the latter applies to other times of the year. The intensive grazing that can result in muddy paddocks doesn't always happen in winter. Conversely, if it's a dry winter, intensive grazing on a crop won't be such a problem.
- Regulating one type of activity such as winter cropping could have unintended consequences for other feeding practices. For example, if winter crops can't be grown, more nitrogen would be needed to provide enough grass through winter.
- The only way to genuinely reduce nitrogen losses is to reduce stocking rates – ultimately this could cost productivity, jobs and communities, and end up with farms being lost to other land uses like forestry.
- You need to keep enough animals through winter to be able to utilise the grass that will grow in spring.
- Ultimately, it's about managing stock through a period when supply can't meet demand – whatever the time of year.
- Rather than trying to regulate specific practices – which vary a lot from region to region and farm to farm – it would make more sense to focus on measurable outcomes, such as sediment or nutrient losses. (Lauren Phillips said "if you want an outcome-based approach, you'd better start making noise about it now".)
- Feed pads or herd homes help prevent damage from winter grazing, but this would mean our products could no longer be branded as exclusively grass fed and could open us up to animal welfare perception problems.
- All-grass wintering was tried in the 1970s and then abandoned.
- Resource consents for farming are not what we want – operating as a permitted activity within certain constraints would be preferable. ■


Management of winter grazing was a key discussion topic.

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Richard O'Sullivan
+64 27 292 3921
richard.osullivan@colliers.com

Shane O'Brien
+64 27 471 6121
shane.obrien@colliers.com

colliers.co.nz/153879