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NEWSLETTER 37 March 2006

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Cicerone Two – Coming to Conclusions?

2006 Cicerone Symposium
Thursday 11th May 2006
9.00am – 5.00pm
Liaison Centre and Cicerone Farm
Cost \$30 members
\$ 50 non-members

Silage Field day

Friday 24th March 2006
9.00am – 12.30pm
Members free
Non members \$10.00
Meet at the liaison centre
Paddock walk after morning tea
(bring you hats and sunscreen)

On behalf of everyone involved with the Cicerone Project I would like to publicly thank Caroline Gaden for all her hard work and dedication during her time with Cicerone and wish her well in retirement. I have taken over the Cicerone office and am happy to field any enquiries people may have about Cicerone. The NSW Department of Primary Industries (DPI) will be working with Cicerone to deliver these newsletters and organize a traveling road show to present the findings of our trials to surrounding districts.

The Cicerone Project has a busy year ahead. The funding contract with Australian Wool Innovations (AWI) is for a harvest year. The focus will be put on compiling and interpreting measurement results gathered over the last six years and presenting them at seminars and field days. The major event will be “*Symposium Two, Coming to Conclusions?*” on **11th of May 2006** at the Liaison centre Chiswick. This will be followed by seminars in surrounding districts as well as specific topic field days at Chiswick.

The ABC grazing management farmlet trial will be wound down with measurements to cease mid year. Unfortunately the continued funding of the Cicerone Project is not assured. The Cicerone Board is working to promote the work that has been done but to also highlight the missing components that still need to be looked at. These include the long term sustainability, both environmentally and economically, measuring the environmental foot print of the different management approaches. Continued funding would allow us to follow these farmlets, through hopefully some good seasonal conditions. The possibly is there to expand the trial to include a farm D to study the effects of combing the management of both the A and C farlets looking at intensive rotational grazing on a high input pasture system.

The plight of The Cicerone Project would be greatly enhanced by the support of our members.
Hope to see you at the seminars and field days

Justin Hoad

Early age measurements and lifetime performance of merinos.

Michael Lollback (NSW DPI, Tamworth)

The Cicerone project has provided many opportunities to demonstrate breeding and management practices that can enhance enterprise performance. One example involves the selection of replacement ewes into the flock. In the Northern Tablelands merino production systems a very common practice is to select ewe replacements prior to their first joining at 18 months of age. In many cases these ewes have been shorn at 10-12 months of age and many producers collect fibre diameter and to a lesser extent fleece weight data at this time to aid selection of replacement breeders.

One of the issues that are commonly debated is the repeatability of fibre diameter measurements taken at this age. In other words will these animals retain their ranking (from finest to strongest) for the following years that they remain in the flock. To put it another way are these early age measurements a good predictor of lifetime performance?

The simple answer is yes. Some animals will change rankings a little but for selection purposes the repeatability is sufficiently robust to ensure that the best animals can be identified at a young age.

The data set in Table 1 is a group of 2001 drop wethers from the Cicerone A farm which have been measured for three consecutive years at shearing. It is only a small data set but other examples from other research projects are available involving larger numbers which also demonstrate this point.

The wethers have been ranked on fibre diameter based on measurements taken at their 2002 shearing at 11 months of age. The data demonstrates that as the animals get older their fibre diameter increases. The average fibre diameter of an animal in any year will be influenced by seasonal conditions during that year; if they receive better nutrition than fibre diameter will increase and similarly if the nutrition level was less than fibre diameter would decrease.

You will also notice that in the large majority of cases their ranking has changed very little. This is particularly the case if you divide this group of wethers into 20 percentile groups. If for example you needed to cull 20% of the mob and you decided to base your decision on fibre diameter only you can see that as the animals get older the bottom 20% always remain the strongest group. This illustrates that a fibre diameter measurement taken at a young age can be a very accurate predictor of lifetime performance.

To maximise the repeatability of early age measurements there are a few conditions that need to be met:

- minimum spread of age ie born over a 6-8 week period
- be 9-12 months of age when measured
- a minimum of 6 months wool
- managed as a mob since weaning

A large majority of flocks on the Tablelands would meet these conditions and so are in a position to generate very useful data that would enable more accurate selection decisions to be made.

There are other opportunities to use these measurements for selection purposes which will spread the cost of collecting this data. For example, when culling animals at an older age, early age measurements can be used to identify the least profitable sheep amongst the older age groups. This enables the more profitable sheep to be retained in the flock for a longer period. Similarly during drought periods where a decision is made to reduce numbers, early age measurements can be used to identify the more profitable animals that should be retained rather than just selling the oldest age group.

What happens to other traits when selecting on Fibre Diameter?

If you only use FD information when selecting young replacement ewes how much are other traits such as fleece weight affected? Table 2 is the same data set with the animals ranked on their 02 fibre diameter measurements plus their fleece weights for the years 02 to 04. Generally the relationship between FD and FWT follows the pattern that as FD increases so does FWT and vice versa. But from this data set you can see that this relationship is not very strong and there are many exceptions to this rule. So if the strongest 20% (bottom group) are culled the average FD of the selected group is 16.5 micron compared to the whole group of 16.8, a reduction of 0.3 microns.

If we look at the effect on fleece weight, the average for the selected group is 2.3kg which is no different to the whole drop. So, by using FD measurements to assist with selection decisions we have compromised very little on fleece weight. If we had live weight measurements as well we would find that the story would be very similar; the live weight of the selected animals would be similar to the average for the whole group.

If you have a breeding objective that is designed to change several traits, the best way to do this is by using a selection index which allows the appropriate emphasis to be placed on each trait which will maximise the progress in achieving the breeding objective.

Table 1. Wethers from Farm A ranked on 02 Fibre Diameter and divided into 20 percentile groups.

Tag No.	Fibre Diameter		
	2002	2003	2004
A01-049	14.1	17.1	17.5
A01-068	14.5	17.6	17.1
A01-060	14.9	18.8	19.4
A01-064	15.1	18.2	17.4
A01-054	15.6	19.2	17.9
A01-063	15.9	18	18.6
A01-059	15.9	18.8	18.6
A01-070	16.0	19.0	18.7
A01-023	16.0	18.8	19.1
Ave. FD	15.33	18.39	18.26
A01-074	16.2	17.7	16.3
A01-073	16.2	18.6	17.5
A01-027	16.2	18.6	19.5
A01-028	16.3	19.7	18.7
A01-035	16.3	19.5	19.7
A01-052	16.4	18.2	17.7
A01-066	16.4	19.2	19.4
A01-053	16.5	19	18.9
A01-050	16.6	18.6	17.9
Ave. FD	16.34	18.79	18.40
A01-033	16.6	18.2	18.1
A01-069	16.7	18.2	18.2
A01-061	16.7	18.8	18.7
A01-042	16.8	17.8	18.0
A01-056	16.8	19.2	18.3
A01-045	16.8	19.9	19.0
A01-034	16.8	18.8	19.1
A01-037	16.9	18.5	17.8
A01-072	16.9	18.5	18
Ave. FD	16.78	18.66	18.36
A01-071	16.9	19.2	18.8
A01-057	17.1	18.3	17.8
A01-036	17.1	19.3	19
A01-048	17.2	19.3	18.2
A01-024	17.5	19.6	19.2
A01-031	17.6	19.2	18.3
A01-043	17.6	19.4	19.2
A01-029	17.7	19.1	17.6
A01-032	17.7	21	21.9
Ave. FD	17.38	19.38	18.89
A01-039	18	19	18.2
A01-044	18.1	19.4	18.2
A01-040	18.1	19.6	19.3
A01-058	18.1	20.2	20.3
A01-055	18.2	20.3	19.5
A01-041	18.3	20.5	19.3
A01-025	18.5	20.7	20.0
A01-067	19.6	20.2	19.4
Ave. FD	18.36	19.99	19.28

Table 2. Impact of selecting on Fibre Diameter on Fleece weight.

Wethers ranked on 02 fibre diameter.

Tag No.	FD(02)	FW(02)	FW(03)	FW(04)
A01-049	14.1	2.00	4.10	5.20
A01-068	14.5	2.20	4.20	5.40
A01-060	14.9	2.50	4.25	6.10
A01-064	15.1	2.00	4.25	5.25
A01-054	15.6	2.00	4.50	4.85
A01-059	15.9	3.00	4.35	4.45
A01-063	15.9	2.50	4.35	4.95
A01-070	16	2.00	4.00	5.00
A01-023	16	2.50	4.40	5.10
Average	15.33	2.30	4.27	5.14
A01-074	16.2	2.50	4.30	4.75
A01-073	16.2	2.00	3.20	4.35
A01-027	16.2	1.50	3.20	5.50
A01-028	16.3	3.00	5.20	4.60
A01-035	16.3	2.00	4.50	4.25
A01-052	16.4	2.00	3.75	4.30
A01-066	16.4	2.00	4.40	4.75
A01-053	16.5	2.50	4.15	4.85
A01-050	16.6	2.50	4.50	4.55
Average	16.34	2.22	4.13	4.66
A01-033	16.6	2.50	4.20	4.95
A01-069	16.7	2.00	3.75	5.30
A01-061	16.7	2.00	4.15	5.20
A01-042	16.8	2.50	4.75	4.70
A01-056	16.8	1.70	4.00	4.85
A01-045	16.8	2.50	4.10	5.10
A01-034	16.8	2.50	4.80	5.35
A01-037	16.9	3.00	4.40	4.65
A01-072	16.9	2.50	4.20	4.10
Average	16.78	2.36	4.26	4.91
A01-071	16.9	2.00	4.25	4.90
A01-057	17.1	2.50	4.40	4.35
A01-036	17.1	2.00	4.05	4.95
A01-048	17.2	2.50	4.95	4.45
A01-024	17.5	2.00	4.10	5.55
A01-031	17.6	2.50	4.60	5.65
A01-043	17.6	3.00	4.65	4.75
A01-029	17.7	2.00	3.90	4.35
A01-032	17.7	2.00	5.00	5.50
Average	17.38	2.28	4.43	4.94
A01-039	18	2.50	4.55	4.40
A01-044	18.1	2.50	4.25	5.10
A01-040	18.1	2.50	4.25	4.25
A01-058	18.1	2.50	4.25	5.75
A01-055	18.2	2.00	4.00	4.00
A01-041	18.3	2.50	3.70	5.20
A01-025	18.5	2.50	4.70	4.95
A01-067	19.6	2.00	4.40	4.60
Average	18.36	2.38	4.26	4.78

Fodder Conservation

Clare Edwards (NSW DPI, Armidale)

A better understanding of fodder conservation was a high priority identified by livestock producers in a Cicerone Project survey. Fodder Conservation can mean different things to different people. Hay and silage making often spring to mind but it may simply mean the growing of the summer 'hay stack' in the paddock and the utilisation of this dead standing material in the cooler months.

There are many benefits associated with fodder conservation but there are also some disadvantages. A major benefit is the utilisation of quality feed at a time of abundance, and using it to fill feed gaps at later times. Another advantage not commonly considered is that fodder conservation can be used to improve pasture quality or to manipulate the composition of pastures.

On the downside, many Northern Tablelands producers associate the making of silage or hay with high costs or unacceptable risks due to variable seasonal conditions. Also, many paddocks on the tablelands are not suited to fodder conservation due to pasture type, land class or land suitability eg too many rocks. The introduction of a fodder conservation system may also affect the farm's capital structure as the cost of machinery for storing, making and feeding out fodder needs to be considered. . Also, consider availability of contractors.

Silage at Cicerone

The guidelines for the management of the Cicerone A farmlet allow for the use of fodder conservation, however until Spring 2005 the poor seasonal conditions limited silage making opportunities. Paddock A1 was sown to a phalaris, lucerne and chicory pasture in Autumn 2004. In spring 2005, it was decided that a strategic pasture cut would allow the lucerne to strengthen against the phalaris, and that silage would be made to remove the bulk of the phalaris. It was hoped that the phalaris would become dormant over the hotter period and the lucerne, with its deep root system, would have a chance to proliferate. Unfortunately, the favourable seasonal conditions, delayed the silage making until late December 2005.

Silage as a grazing or pasture management tool

Harvesting pasture for fodder conservation has the obvious benefit of providing feed for use during periods when paddock feed is inadequate. There are less obvious benefits associated with the current pasture:

- Maintaining pasture in Phase II as long as possible means plants are in the leafy stage as long as possible, postponing the reproductive phase (running up 'to head'). This improves pasture quality (digestibility),

as grass plants become stemmier and lose quality as they reach the reproductive stage.

- Manipulation of pasture species can be achieved, for example by allowing a less dominant species to take off by removing the competition at the time of its greatest potential.
- Fodder conservation can also be used as a weed control strategy. However, timing and management of pasture regrowth is critical and the timing of the cut may not be ideal for maximum pasture quality.
- The use of conserved fodder during feed gaps can decrease the grazing pressure on other pastures which can then be utilised at critical times such as lambing or calving.
- Many Northern Tablelands producers run complimentary cattle enterprises for which fodder conservation can be a worthwhile feed option. It can also be used for pasture saving, for example using conserved fodder for the cattle enterprise while the ewe enterprise (requiring less input to reach its production goals) resides on the pasture.

These are just some examples of the possible roles for fodder conservation in Northern Tablelands grazing systems. Further discussions, including the yield and quality results of the December harvest on Cicerone's farmlet A, the technical aspects of making silage, its use for animal production and as a pasture management tool, will be covered at the **Silage Field Day on the 24th March 2006**.



Worms are biting harder on Cicerone farms and everywhere else in New England this year.

Observations from Betty Hall – Cicerone Board Member.

The current levels of parasite infestations throughout the New England should come as no surprise to anyone and is quite predictable from rainfall patterns and ambient temperatures. This is true for all the major internal parasites including liver fluke and not just barber’s pole.

Sheep in general are still debilitated with a compromised immune system due to the appalling pastoral conditions during the autumn and winter of 2005. Sustaining the required levels of hand feeding to maintain ewes in adequate condition score for lambing and live weights in the 2004-drop was well nigh impossible particularly if properties were overstocked. Cicerone live weight and fat score data proves this point despite the high levels of hand feeding that had to take place.

However, the high egg counts and reports of losses due to haemonchus within 21-28 days of a short acting chemical and even Cydectin oral being experienced on the northern tablelands is also a very sound indicator of the lack of effective grazing management and not drench resistance, which together with the parasite friendly seasonal conditions has precipitated the current critical situation. What is needed are more paddocks offering flexibility to minimise sheep graze and sheep rest periods with or without cattle during the warmer and wetter months. From about mid-December onwards. Concerted efforts have to be made to place grazing management for worm control top of the list. This is also true for the control of black scour and brown stomach worms.

The relatively ‘set-stocked’ Farms A and B of the Cicerone Project have little if any opportunity to exercise short graze periods even where cattle prepared paddocks are available to sheep due to the restrictively low number of paddocks. This means longer grazing periods between drenches enabling sheep to pick up the fruits of their own egg output. This together with inadequate rest periods leads historically to problems with barber’s pole control.

Table 1. Cicerone Farms Sheep graze and rest periods 2000 - 2005

Farm	Number of available paddocks	Average sheep graze periods	Average sheep rest periods
A-high input	8 to early 2005 now 10	49	49
B-low input	8 to early 2005] now 10	58	54
C-low input	40	7	102

However, we do need to balance the needs of worm control and pasture management [with rotational grazing] and stock production performance.

The Cicerone Project makes no claim that the intensive rotational grazing system on Farm C offers any help in the control of black scour or small brown stomach worms.

The historical consequences of a lack of adequate grazing management on barber’s pole control are shown in Table 2.

Table 2. Monitoring 2004 Drop

Test Date And drenching details.	Average <i>Haemonchus</i> Egg Count		
	Farm A semi set- stocked	Farm B	Farm C Rotational grazing
14.12.04 Before weaning	21,658 deaths	13,717 deaths	492 no deaths
24.1.05 41 days after oral Cydectin A and B only	7212 deaths	6695 deaths	1790 62% <i>haemonchus</i> no drench
21.2.05 28 days post levamisole	2212	1500	1695 78 % <i>haemonchus</i> no drench
11.4.05 46 days post Rametin +Benzimidazole	1047	205	25

Farm A and B on Cicerone experienced even worse worm control than in 2004-2005 from December 2005 onwards despite short-acting chemicals given at marking and in December forcing us to treat all sheep on A and B with Cydectin LA in early January to minimise losses on these farms. Monitoring indicates that the Cydectin LA is working very effectively. However, the results on Farm C are the worse we have seen in the past 5 years although still superior to A and B.

Why is this?

Attempting to capture the spring pasture growth to coincide with the needs of ewes during lactation a decision was made to delay lambing for 2 weeks. That is lambing starting in the first week of October 2005 with weaning delayed until late January. This meant set-stocking ewes with lambs at foot to late January rather than using some slow rotation after marking and weaning in mid-December when the full rotation cycle usually commences. So set stocking coincided with the start of the haemonchus problem period from mid-December.

The average egg count in Farm C ewes on the 23rd January 2006, 46 days after a levamisole, was 3820, which were shown on culture to be 97% haemonchus. No deaths were recorded. This was far greater than the pre weaning counts in December 2004 of 1195 some 135 days after a July pre shearing quarantine drench with ewes not drenched until February 2005 when counts had not increased.

We have not used Cydectin LA on Farm C –yet! We want to see if and when the effects of the rapid rotation kicks in and assist worm control without the need to use more drenches. The ewes and lambs on farm C were given a levamisole on the 24th of January at weaning and the rotation started.

Twenty-eight days later the ewe counts averaged 76 [with only 87% barber’s pole] and the lamb’s counts averaged 188 [80% barber’s pole].

Watch this space for an update when we resample sheep on all the farms.

***Symposium theme: “Cicerone Two
... Coming to Conclusions?”***

As part of our ‘Harvest Year’ activities, we have planned this day to bring together the conclusions from our activities thus far – a period of almost 6 years. The day will provide new information to that already presented at our first major symposium (held in May 2005). It is worth noting that an invited speaker at that symposium, Geoffrey Saul, Department of Primary Industry, Hamilton, Victoria, in summing up the day, said: “Cicerone is just getting to the interesting stage.” He also stated that there is a “need to test new concepts until a new plateau is reached” (in other words the differences between the farmlets need to have reached a plateau before the treatments are terminated).

We trust that the day will be of great importance, not only to producer members who will be interested in the latest summation of findings, but also to a wide range of extension and funding bodies who may be interested in building on the foundation already provided by this unique farmer-adoption-research partnership. The collaborators in this project firmly believe that important questions remain; we are keen to explore with you ways in which the work might continue, especially in getting a better understanding of the environmental consequences of our different farming systems. Thus, our speakers and all attendees will be invited to help to identify opportunities for further investigation.

We hope you can join us for this important day of “Coming to Conclusions?”

When: May 11, 2006 starting with registration at 9.00 am. The day will finish at 5 pm.

Where: Registration starts at the Liaison Centre, CSIRO’s McMaster Field Laboratory, Chiswick (17 km south of Armidale on the NewEngland Highway) followed by a bus trip to visit the three Cicerone farmlets where the research has been carried out.

Please come prepared for a field walk: Some of the presentations will take place in the field – please bring appropriate clothing and footwear.

Cost: Cicerone members \$30 per person; non-members \$50 per person (incl. GST).

A short printed proceedings plus lunch and morning/afternoon teas will be provided as part of your registration fee.

Time	Where	SPEAKERS	POSSIBLE TOPIC
9.00 am			Register, coffee/tea and get on bus by 9.30 am.
9.30 am			Bus leaves Liaison Centre for field
9.45 am	Field (at paddocks B1 and C1)	1. Jim Scott	Botanical composition changes on the Cicerone Farm over six years
10.15 am	Field (at paddocks A6 and C7)	2. Libuseng Shakhane	The balance between managing pastures and livestock for sustainability
10.45 – 11.00 am	At yards		SNACK
11.00 am	At yards	3. NSW-DPI	Merino Breeding Enterprise Management - Achieving Fat Score Targets and Realising Production Potential
11.30 am	At yards	4. Farmer and farm manager presentations	Learnings from the Cicerone Farmlets – different systems, other things learned, reflections on each system explored
12.15 pm			Bus leaves field for Liaison Centre
12.30 – 1.15 pm	Liaison Centre		LUNCH
1.15 pm	Liaison Centre	5. Chris Guppy	Soil fertility changes on the farmlets and long-term fertiliser decisions
1.45 pm	Liaison Centre	6. Alison Colvin (Healey)	What Cicerone has taught us about grazing management and worm control in the New England
2.15 pm	Liaison Centre	7. Karl Behrendt	Optimising and risk management for various pasture based enterprises
2.45 – 3.15 pm	Liaison Centre		AFTERNOON TEA
3.15 pm	Liaison Centre	8. Fiona Scott	Economic outcomes from the 3 farmlets (including benchmarking)
3.45 pm	Liaison Centre	9. Jim Scott/Andrew Alford	Assessing the sustainability of the three Cicerone Farmlets over time
4.15 – 5.00 pm	Liaison Centre	10. Discussion (Chair, Terry Coventry)	Implications for the future

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