

The Cicerone Project Inc.

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NEWSLETTER No 29

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NSW Agriculture
and
The Cicerone Project
invite you to an information day on

Preparing for Spring

Learn where fodder budgeting fits into your program

Clare Edwards: Benchmarks for winter and spring pastures

Bob Gaden: Does a growth set back matter in beef production?

Michael Lollback: The influence of nutrition on whole of life wool production

Alastair Rayner: Improving beef yield in cattle

FRIDAY 18 JUNE, Liaison Centre, Chiswick
9.00 am start (PROMPT) to 5.00pm

Morning session will look at Farms A and B
Afternoon session will look at Farms B and C
BYO lunch if you're staying for both!!!!

Please advise which session you will be attending by phoning 6778 3871

Wear warm clothes as you'll spend time outside assessing pastures
Cattle on the Cicerone Farm

Over the past four years, cattle have been run on the Cicerone Farm as well as sheep. This was a decision taken by producer members when the farms were first established as it reflects the situation on many local properties. The

cattle have proved to be a very useful tool for pasture management as well as parasite control, for example the preparation of paddocks with a low worm burden suitable for weaner sheep. Initially cattle were taken on agistment, heifers and cows from New England Artificial Breeders. Ten cows and their subsequent calves were allocated to each farmlet. However these cattle were often swapped round depending on calving dates and it was not possible to readily obtain production data. The decision was then taken to agist young cattle that could be more easily monitored for weight gains.

CSIRO weaners

The first mob of young stock was from CSIRO, a mob of mixed sex weaners run from April to December 2002. On arrival they were randomly allocated to the farmlets, with 15 going to Farm A, 12 to Farm B and 15 to Farm C. Their weight gains are shown in Table 1 below.

Table 1 CSIRO cattle

April to October	Farmlet A	Farmlet B	Farmlet C
Number and sex	15 mxd	12 mxd	15 mxd
Average April wt	248 kg	249 kg	257 kg
Average Oct wt	357 kg	304 kg	312 kg
Average increase	109 kg (SD 14)	55 kg (SD 14)	55 kg (SD 10)
Weekly increase Apr - Oct	4.2 kg	2.1kg	2.1 kg
Daily increase (kg) Apr-Oct	0.6 (SD 0.08)	0.3 (SD 0.08)	0.3 (SD 0.06)
October to December			
Number and sex	17 steers	14 heifers	11 heifers
Average Dec wt	398 kg	351 kg	348 kg
Average increase from Oct	60 kg (SD 12)	38 kg (SD 11)	26 kg (SD 6)
Daily increase (kg) Oct-Dec	1.2 (SD 0.25)	0.8 (SD 0.24)	0.47 (0.2)

Farm A animals were run in paddocks A1 and A3 from 16 April to 15 October 2002. Paddock A1 received 125kg/ha super-phosphate in July 2000 and also in April 2001. In February 2002 it had been sown with Dargle rye grass, USA red clover and Haifa white clover with 100kg/ha super-phosphate.

Paddock A3 was predominantly Quantum fescue, Australian phalaris, Lincoln ryegrass, Porto cocksfoot and USA Red clover and Huia white clover which had been sown in 2000 with 125 kg/ha super-phosphate. In January 2001 urea had been applied and in April 2001 white clover had been spread with 100kg/ha of super-phosphate. An additional 200kg/ha of super went out in September 2001.

The cattle received 8 Rumevite blocks as a supplement. Their average weight gain was 109 kg (Standard Deviation [SD] 14) or 0.6kg/day in the 26 weeks. The rye grass in particular proved most beneficial

Farm B animals were run on B5 (poa and kangaroo grass) and B2 (poa, sporobolus and kangaroo grass).

Paddock B5 received 125kg/ha super phosphate in July 2000 and 113kg/ha in August 2002. Paddock B2 received 187kg/ha in September 2001 and 80kg/ha in August 2002. The cattle received 6 Rumevite blocks from April to October and their average weight gain was 55 kg (SD 14.2) or 0.3kg/day

Farm C animals were initially run alone, making 7 paddock moves. A great variety of pasture species was found from paddock to paddock with some being phalaris dominant, others containing fescue, microlaena and Yorkshire fog and others being a mix of native species. Farm C had received super-phosphate at 125 kg /ha over the same number of hectares as Farm B in 2000 and 2001, with more prescriptive spreadings in 2002. The cattle were run with the ewes [93 in number], 2000 drop wethers [55] and the 2001 drop lambs [80] from August 2002. Hot wires were used to strip graze the paddocks, with 17 moves from 1 August to 15 October. During this time the animals had on offer a mixture of cotton seed meal, Dri-Lic, salt, lupins and zeolite. The total supplementary feed on Farm C from August to November was 1040 kg cotton seed meal, 720 kg Dri-Lic, 90 kg salt, 60 kg lupins, and 60 kg zeolite. The average weight increase for the cattle from April to October was 55 kg (SD 10.4) or 0.3 kg per day.

On 15th October the animals were re-sorted and re-allocated to the farmlets to give all the steers the better quality feed on Farm A prior to sale on 3 December. The paddocks used were A2, A1 and A4. During this time the steers gained an average 60kg (SD 12) or 1.2kg per day.

The heifers running on Farm B showed an average growth of 33.5 kg (SD 11.5) or 0.8kg per day from October to December. From 15 October the heifers running on Farm C were boxed with the 2001 drop lambs and received access to the supplementary feed until 15 November. They showed an average growth of 40 kg (SD 6) or 0.47kg

per day from October to being sold on 3 December.

So, during the time these weaners were running on the Cicerone farm, those grazing on the rye grass of Farm A had much better weight gains than those on Farms B and C, especially in spring when pasture growth was much greater. However the cost of pasture establishment and fertilizer from July 2000 to February 2002 for A1 was \$708.72 per ha and for A3 was \$535.38 per ha whereas B2 was \$93.47 per ha and B5 was just \$52.87 per hectare (Farm C was similar to Farm B) and this would greatly affect the profitability of the enterprise. When these cattle were sold by CSIRO they made over \$16K dollar, an average of \$382 per head.

Romani cattle

The next cattle to be agisted were a mob of young animals of mixed sex and mixed breed from Romani. Although these cattle were only on agistment, they were 'valued on' at 120 cents per kg in January 2003. The animals were randomly allocated to the three farmlets, with 26 head running on each. Their average weights are shown in Table 2.

Farm A used paddocks A2 (mainly fescue) and A3 (mainly paspalum and cocksfoot), the short term rye grass pasture of A1 was not available for grazing this year. Farm B used B3 and B5 (both poa and kangaroo grass), and Farm C had a greater variety of species in the paddocks used by the cattle - C1 (fescue and poa), C2 (fescue and native mix), C9 (phalaris and prairie grass), C10 (phalaris) and C11 (phalaris). The Romani cattle remained on the Cicerone Farm for just 10 weeks during which time their value was estimated to increase to 170 cents per kg.

Table 2. Romani cattle weights and values

	Wt ON 24 Jan 03	Average Value ON	TOTAL Value ON	Wt OFF 4 Apr 03	Daily wt gain in kg	Average Value OFF	TOTAL Value OFF	Return earned \$ per ha
Farmlet A	317 kg	\$380	\$9876	399 kg	1.18	\$679	\$17,656	\$144
	SD 27	SD \$33		SD 33	SD 0.2	SD 56		
Farmlet B	304 kg	\$365	\$9485	365 kg	0.88	\$621	\$16,150	\$114
	SD 23	SD 27		SD 23	SD	SD 38		
					0.22			
Farmlet C	314 kg	\$376	\$9783	370 kg	0.81	\$630	\$16,369	\$135
	SD 35	SD 42		SD 42	SD 0.19	SD 72		

The animals grazing on Farm A had a growth advantage over those on the other farms but it was not as great as the difference seen with the CSIRO cattle. In terms of return per hectare there was very little difference between the three farmlets.

Cicerone purchases

The Cicerone Board decided to purchase cattle in future, rather than to agist. Cattle were bought in three batches in 2003 and randomly allocated to the three farmlets with an average purchase price being worked out across the various lot numbers each time.

Table 3 Cicerone cattle purchases and allocation

Date	Breed	Sex	Price	Total No.	Farm A	Farm B	Farm C
May03	Murray Grey	Heifers	127.2 c/kg	19	7	6	6
Jun 03	Black Baldy	Steers	151.85c/kg	16	5	5	6
Aug 03	Hereford /MG mixture	Heifers	\$322.88 / head	26	9	8	6

In September one Black Baldy died of bloat on Farm B. The cattle on all farms were given the same treatment i.e. quarantine vaccination and drench on arrival, bloat capsules etc. The capsules were given as an additional precaution after the animal was lost due to bloat.

The 26 heifers of the Hereford mixed mob were run on the farmlet periphery until 24 October when they were allocated to the farmlets. On Farms A and B the steers and heifers were run as separate mobs to avoid 'bulling'. On Farm C the cattle were run as one mixed mob. They were run ahead of the sheep in the intensive rotational system.


Table 4 Average daily weight gains in kg of the Cicerone cattle

	May-Jul	Jul-Oct	Jun-Oct	Oct-Dec	Dec-Feb	Feb-Apr	Average daily gain
A MG	1.1	0.4		0.9	0.6	0.5	0.7
A BB			1.1	1.0	0.8	0.8	0.9
A MXD				1.1	0.9	0.6	0.9
B MG	1.0	0.6		0.8	0.7	0.7	0.7
B BB			1.2	0.6	0.8	0.5	0.8
B MXD				0.9	0.9	0.7	0.8
C MG	1.0	0.5		0.6	0.6	0.5	0.6
C BB			1.0	0.8	1.0	0.7	0.8
C MXD				0.8	0.9	0.6	0.8

All these cattle were sold in early May 2004. An average price for the animals was calculated from their sale lot prices; for heifers 148.32 cents per kg and for steers 157.79 cents per kg. Using a curfew weight, each animal was then valued off the farmlets. (No account was taken their age even though all the animals were mouthed prior to sale. However it is not known which animals were in which specific sale pens. It is interesting that animals with tag number 41 and 52 on Farm A both had 0 teeth whereas 47 and 53 both had 6 teeth. All four animals weighed over 190kg on arrival and over 440 kg on departure. The varying number of teeth would have had an impact on their value and destination after sale)

The detailed valuations calculated for Farm A cattle are shown in Table 5.

Table 5 Farm A cattle values



The return per hectare on each farmlet for these cattle is shown in Table 6, where we can see that Farms A and C gave the highest return per hectare.

Table 6 Overall averages and income for Cicerone cattle

Farm	Av Wt ON	SD	Total Value ON	Av Wt OFF	SD	Total Value OFF	Return in \$/ha
A	196 kg	23	\$6125.96	425 kg	47	\$13469.56	\$136
B	198 kg	27	\$5614.10	409 kg	53	\$11105.24	\$99
C	194 kg	24	\$6055.52	401 kg	34	\$12732.19	\$137

With each of the three groups of cattle, from CSIRO, Romani and Cicerone, that have been grazed on the farmlets we can see that there has been a greater daily weight gain on Farm A. This is to be expected with the improved pasture and high fertilizer input on this farm. However this greater level of input raises the question of the high cost of production. Higher fencing costs to set up farm C is also an overhead which needs to be considered.

Table 7 Summary of cattle enterprise

Mob	Time frame	Numbers of cattle run			Average daily weight gain in kg		
		A	B	C	A	B	C
CSIRO	Apr 02-Oct 02	15	12	15	0.60	0.30	0.30
CSIRO	Oct 02- Dec 02	17	14	11	1.23	0.76	0.48
Romani	Jan 03 - Apr 03	26	26	26	1.18	0.88	0.81
Cicerone MG	May 03-May 04	7	6	6	0.66	0.71	0.61
Cicerone BB	Jun 03-May 04	5	5 or 4	6	0.91	0.84	0.79
Cicerone Hmix	Oct 03- May 04	9	8	6	1.13	0.91	1.00
Overall total/average		79	70	70	0.95	0.73	0.67

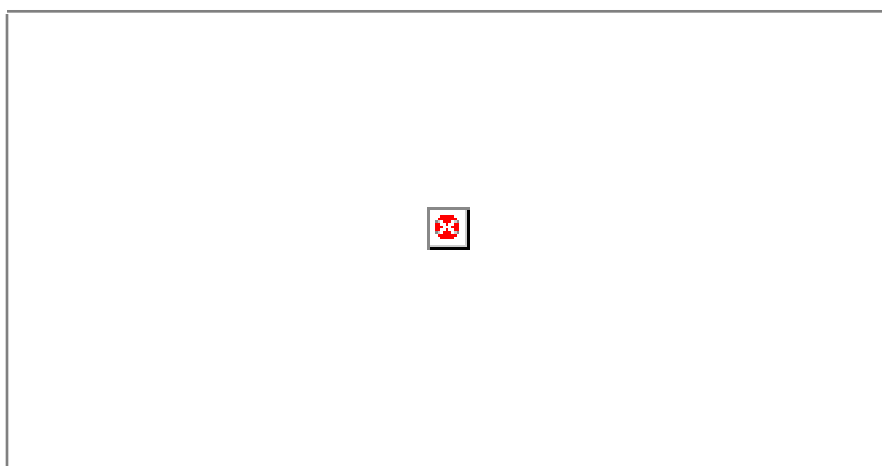
The cattle weight increases relate back to the pasture that they are eating. Each time stock are moved to another paddock the Farm Manager makes an assessment of the pasture for the paddocks being left behind and the paddocks to which stock are moving. Table 8 shows an average of what has happened on Farm C over more than one hundred moves from February 2002 to April 2004

Table 8 Average pasture assessment on Farm C from Feb 02 to Apr 04

	Tonnes/ha	GroundCover	%DeadMaterial	DeadDigestibility%	%GreenMaterial	GreenDigestibility%
Stock In	2.3	91.5	40.6	42.8	59.9	65.6
StDev (in)	0.8	5.1	14.0	5.5	13.7	5.3
Stock Out	1.6	88.5	50.0	40.1	49.7	60.8
StDev (out)	0.8	6.0	14.3	5.5	14.3	7.8

The graphs below give an idea of the changing botanical composition on the three farms over the past four years.

Figure 1 Farm A Pasture Composition



The proportion of fertilizer responsive species such as sown grasses and volunteer perennials is increasing, as expected, due to the sowings, on Farm A but decreasing on Farm B where the native grasses are increasing in proportion and is more stable on Farm C. Despite sowing clover on A and broadcasting it with fertilizer on all farms, the legume level remains very low.

Figure 2 Farm B Pasture Composition

Figure 3 Farm C Pasture composition



Economics.

Farm A has the greatest expenses due to high fertilizer input and pasture establishment. The cost of this from July 2000 to February 2002 for A1 was \$708.72 per ha and for A3 was \$535.38 per ha whereas B2 was \$93.47 per ha and B5 was just \$52.87 per hectare. Farm C was similar to Farm B. Farm C has high overheads due to having an increased number of paddocks which required more fencing and water troughs.

Drench and vaccination treatments were the same for all farmlets, so there was a slight variation due to differing numbers run.

The CSIRO weaners on Farm C received supplementary fodder in the form of lupins, Dri Lic and Cotton Seed Meal on offer to the cattle and sheep which were running together.

Labour costs should also be taken into account. The Farm Manager spent on average 3.57 hours per week specifically on sheep and cattle work for Farm A, 2.57 hours on Farm B and 4.27 hours on Farm C. (In addition time is allocated to other tasks e.g. weighing stock, tree planting, non-farmlet trials, maintenance, Board meetings and seminars etc which are not allocated to a specific farm).

Table 8 Labour hours per hectare each year

	Annual Labour
Farm A	\$103 /ha
Farm B	\$ 69 /ha
Farm C	\$137 /ha

Conclusion

The cattle run on the Cicerone Farm have shown that there has been some differences in daily weight gains and the overall weight increases found over the three farms. Farm A, the high input farm has shown the most improvement. However the higher costs of fertilizer and pasture establishment on Farm A affects the cost of production on this farm. The higher overheads of Farm C due to additional fencing and water lines should also be considered for the economic analysis of that farm.

The cattle enterprise is only a small part of the Cicerone Project but has proved to be very beneficial in pasture management. The decision to purchase cattle will give more useful economic data when it is part of the overall economic analysis.

Information for this article was provided by Caroline Gaden, Justin Hoad, Col Mulcahy.

LOW STRESS STOCK HANDLING WORKSHOP

Chris Johnson of Roundhill Working Kelpies, Leeton, in conjunction with NSW Agriculture is prepared to travel to Armidale to run classes in

Low stress stock handling for sheep.

Cost will be \$250 per person. Please ring Caroline on 6778 3871 and advise if you are interested

Lamb Growth Patterns on the Cicerone Farms

The Cicerone lambs are weighed at marking and then monthly until they are sold or join the ewe mob. Each year we have found that, in general, the average weight of Farm A lambs has been greater than that of the other farmlets. This is illustrated in the graph below where average weights are shown for the 2001, 2002 and 2003 drop for the corresponding months. The 2001 drop is indicated by a p, the 2002 drop by ● and the 2003 drop by u. It can be seen that during their first year the 2002 drop lambs grew better than their 2001 counterparts.

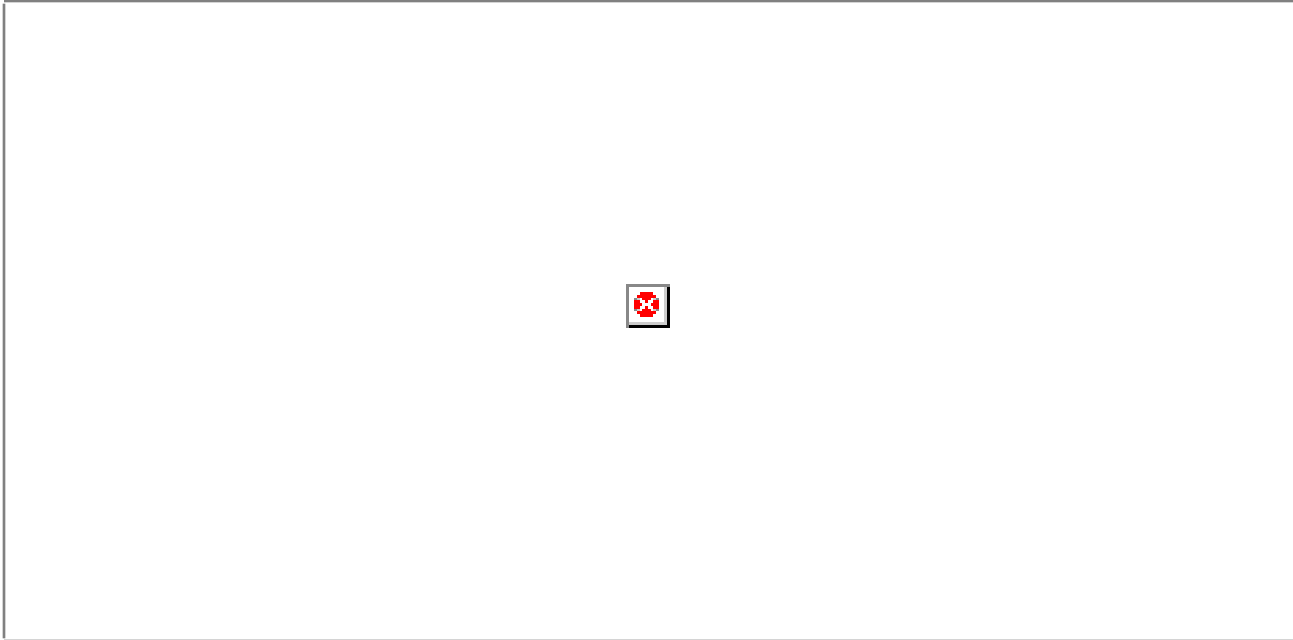
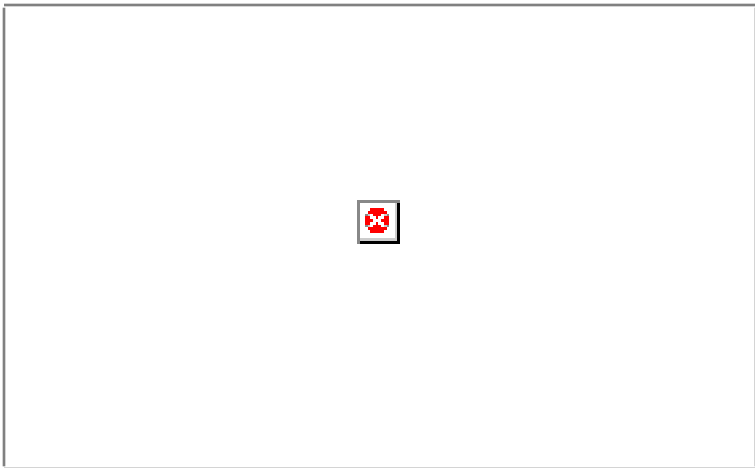


Figure 1. Comparison of average weight of the 2001, 2002 and 2003 drop lambs

In 2003 the pregnant ewes were scanned and on Farms A and B they were separated into twin and single bearers for lambing. On Farm C they were run as a mixed mob as there were just 24 twin bearers out of 131 ewes. Weights have again been monitored monthly from marking as shown in Figure 2.

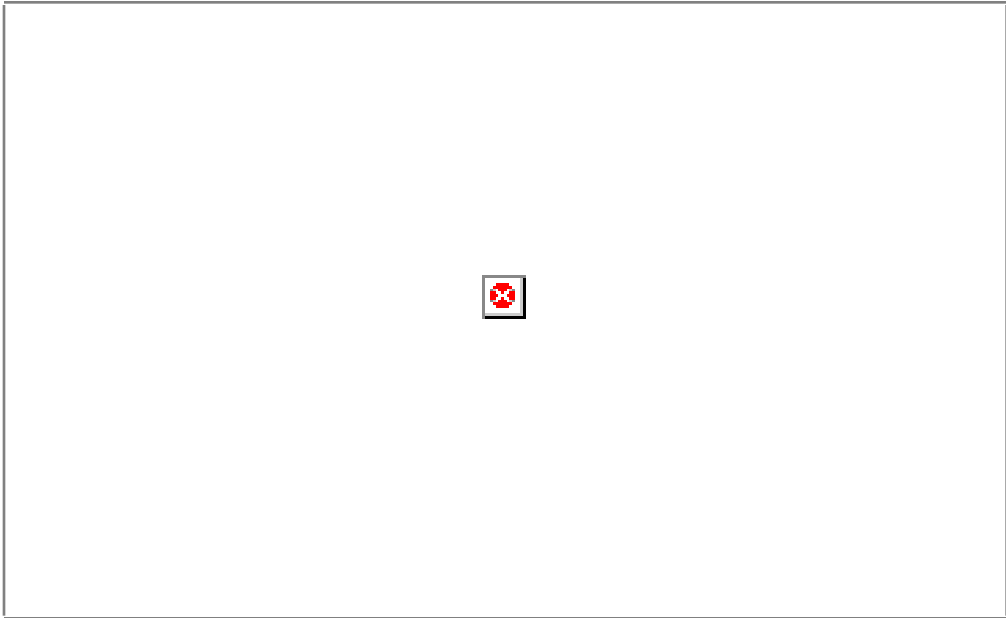
Figure 2 Average weights of 2003 drop lambs



These figures relate to a mixed mob of mainly ewe lambs as CSIRO bought most of the wethers for their trials. It can be seen that Farm A and B lambs are gaining weight whereas Farm C lambs have recently started to slip back. All lambs under 30kg live-weight are now being given supplementary feed to maintain their growth through winter.

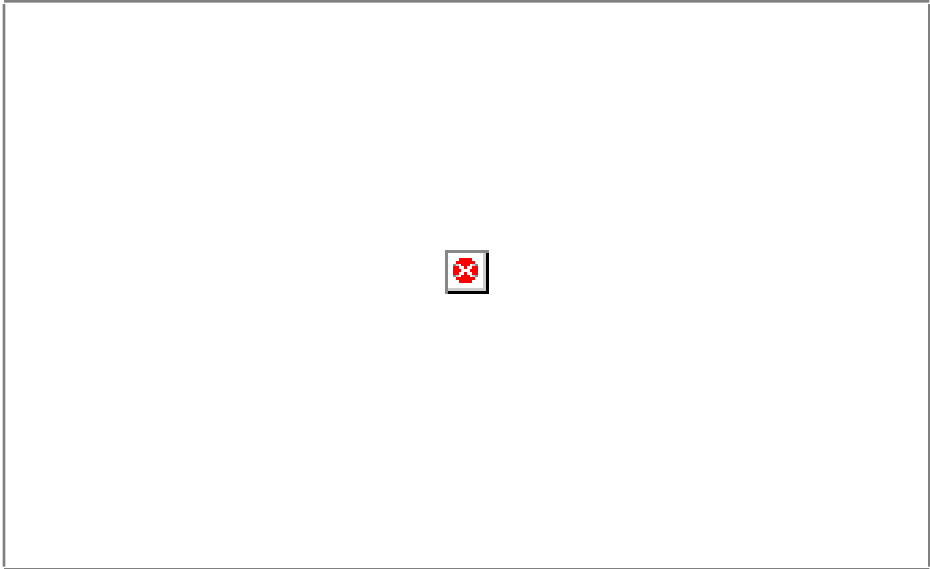
Farm A = r Farm B = p, Farm C = c

Figure 2 Average weight of 2003 drop twin and single lambs



If the data is separated for the twin and single bearers we can see that, despite being smaller at birth, the twins have a good growth rate depending on their nutrition. The Farm A lambs had access to good quality pasture and this has allowed the A twins to be on a par with the single B lambs who are on lower quality feed.

Figure 3 Average daily weight gain/loss of 2003 drop twin and single lambs



The daily weight gain (in grams) for the 6 months from marking to May 2004 indicates that the twin lambs are capable of as good growth rates as the singletons. So with a bit of 'TLC' in the form of some good tucker, you can make your twins an asset, not a liability!!

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