NEW SOUTH WALES
LIFETIME WOOL
MAXIMISING THE GENETIC POTENTIAL OF YOUR FLOCK
VOLUME 1, ISSUE 4 • OCTOBER 2005 • ISSN 1832-3790

INSIDE

HIGHLIGHTS

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Managing worms in weaners

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Lambs and weaners are the most worm-susceptible class of sheep on your property. However, management can make all the difference.

Worm control in weaners begins several months before they are born: the genetics of their parents (eg is 'dad' a worm-resistant ram?) and preparation of good quality, 'low worm-risk' pastures for lambing – and for weaning.

Mums of course have a major impact. Ewes lambing in good nick and with low worm burdens are a big plus for worm control and productivity. They need special care because, after lambs and weaners, late-pregnant and lactating ewes are the next most worm-susceptible class of sheep (with rams not being far behind). But well-managed ewes quickly get back useful levels of immunity to worms after lactation.

Check worm-burdens (WormTest) in ewes just before lambing. The worm egg count should tell you whether ewes need a drench pre-lambing. Wormy ewes at lambing mean big worm problems in lambs and weaners.

What about drenching at lamb marking? In most cases, unless you mark late, lambs don't need drenching at marking. There are two possible exceptions that spring to mind: *Nematodirus* (thin-necked intestinal worm) and *Haemonchus* (barber's pole worm).

Nematodirus can be a problem in lambs and weaners in some situations, notably when there has been a string of dry years. This worm is good at coping with droughts, and has been a problem in autumn-drop lambs this year and last in parts of southern NSW for example. Also, lambs may need a drench in areas where *Haemonchus* is a major problem because, even if not wormy at the time of marking, they can run into problems prior to the weaning drench. Bottom-line: if in doubt, get some fresh droppings from ewes and lambs out of the paddock a few days before marking to check what the worm egg counts are.

The weaning drench is the single most important drench on a farm. The two most important things you can do at this point are to use an effective drench (do you really know what drenches work on your property?) and to move weaners to a paddock that provides good nutrition and is low 'worm risk'.

Important points

- Ewe and weaner nutrition is vitally important for good worm control
- Don't guess, WormTest:
  - To monitor worm burdens at critical times
  - To check effectiveness of drenches (check 7-14 days after a drench).

For more information:

- *Local qualified advisers including RLPB District Vets*
- *NSW DPI offices and 'Worms on the web": http://www.agric.nsw.gov.au/reader/sheep-internal See, for example, the PrimeFact 'DrenchPlan 2005'.*
- *WormBoss, available on CD (from rural resellers) or on the web: www.wormboss.com.au*

Fat score in ewes post weaning

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The allocation of good paddock feed to ewes post weaning is critical to their subsequent joining performance. The Lifetime Wool project has shown an improvement of 30 to 40 foetuses /100 ewes from ewes in better condition at joining (fat score 3 compared to fat score 2). If this improved conception is carried through to increased weaning percentages it can have a large impact on farm profitability. MLA's Wean More Lambs

workshop manual states “All else being equal, a 10% improvement in weaning rate will lead to a 13-24% increase in profit.”

All ewes, particularly those suckling twins, will lose bodyweight and drop in fat score during lactation. Forward planning now by hands-on monitoring of the fat score of your ewes at weaning will enable you to actively manage the fat score of your breeding ewes to improve their conception rates next year.

One strategy is to wean progeny at 14 weeks. This will ensure that the ewes have enough time to regain the bodyweight and fat score lost over lactation. This regain of bodyweight and fat score is essential to ensure continuity of reproductive performance in your ewe flock. The most cost effective method of improving the condition of breeding ewes post weaning is through grazing management. The dollar return from increasing fat score prior to joining by supplementary feeding is marginal.

Northern NSW

In the New England Tablelands the carrying capacity of most properties is mainly influenced by summer growing native pastures. Typically much of this summer pasture growth is under utilised or poorly allocated. It is common practice for this summer feed to be used as a ‘haystack’ for the following winter. However, by mid-winter the dry standing feed will have deteriorated to a low quality with an ME rating equivalent to straw which will not maintain stock in reasonable condition.

The majority of properties in this region join in late April to early May for a spring lambing, while this low quality feed can be used in early pregnancy, it is not sufficient to meet the nutritional requirements of the ewes in late pregnancy particularly when they are off-shears in late winter. At this stage the ewes, particularly those carrying twins will have lost too much condition which will not be regained from the ‘haystack’ even if supplemented for a long period with cereal legumes or cottonseed.

The green feed over summer is far better utilised to improve the ewes condition post weaning and set your flock up for good conception rates at their next joining. The fat reserve gained by grazing summer green feed will lead to improved conception rates and allow for a slow weight loss in early pregnancy when nutrition is not as critical.

Cool season perennials reserved in autumn to slowly grow over winter will fill the late winter feed gap in normal years. However, in below average autumns these pastures will not have gained sufficient mass to satisfy livestock requirements in late winter and the period of supplementary feeding will have to commence earlier.

The key to use of summer native grasses is to allocate the best of them to weaners followed by a mixed mob of 4 tooth and twin bearing ewes whose fat score at weaning will generally be down to 2.5. These ewes will have to gain one fat score in 100 days between weaning and joining - which represents between 5.5 to 7 kg depending on your bloodline.

The pastures over this period will only support the growth rate in previously twin bearing or 4 tooth ewes following weaning to allow them to gain weight up to fat score 3. Demeter fescue based pastures of similar green pasture mass if utilised at this time will ensure faster daily growth and allow these ewes to reach 3.5 score by joining.

Single bearing ewes generally need to put on half a fat score in this period to make sure all ewes have reached fat score 3.5 by joining. Native grass pastures over summer and autumn if managed to maintain a green pasture mass of 1,500kgs at 65% digestibility will allow single bearing ewes to gain the required condition following weaning.

A fat score of 3.5 at joining will ensure maximum conception and twinning rates resulting in a high lamb marking percentage (all else being equal).

Southern & Central NSW

In Southern and Central NSW the opportunity to improve ewe fat score on pasture stops around mid January. After this time, pasture quality is too low for the ewes to gain weight. This highlights the importance of identifying those ewe low in fat score at weaning (below 2.5) and allocating them to the best available ewe pasture (remember that your weaners get the best).

The ideal target in Southern and Central NSW is a fat score of 3.3 by January. Then you can control the weight loss over summer and autumn periods prior to joining to achieve the target of 3 at joining. This will vary between years depending on seasonal conditions.

Weaner weights and progeny performance

Dr Sue Hatcher, NSW DPI Research Scientist & Peter Johnson, NSW DPI Livestock Officer (Sheep & Wool) Central Tablelands

The progeny at each of the three NSW paddock-scale sites are now approaching 15 months of age. The bodyweight profile of the progeny at each site is shown in Figure 1. Differences in progeny bodyweights between the high and low ewe nutrition groups during pregnancy as well as the difference between single and twin born progeny are apparent at each site.

Ewe nutrition during pregnancy and progeny growth

At Carwoola, progeny growth since weaning has been very similar between the high and low ewe nutrition groups. The ewes at Carwoola experienced drought conditions during all of pregnancy in 2004 and were fully fed throughout. In addition, they had also experienced a tough season in 2003.

As a result, the maximum difference in ewe fat score between the high and low groups at Carwoola was 0.36 at day 119 of pregnancy with an average difference of only 0.01 between day 98 and weaning. This small difference in fat score, compared to our target of 1 fat score difference from about day 98 to weaning, produced only small differences in progeny bodyweight profiles between the high and low nutrition groups which were no longer significant by 4 months of age (Fig.1a).

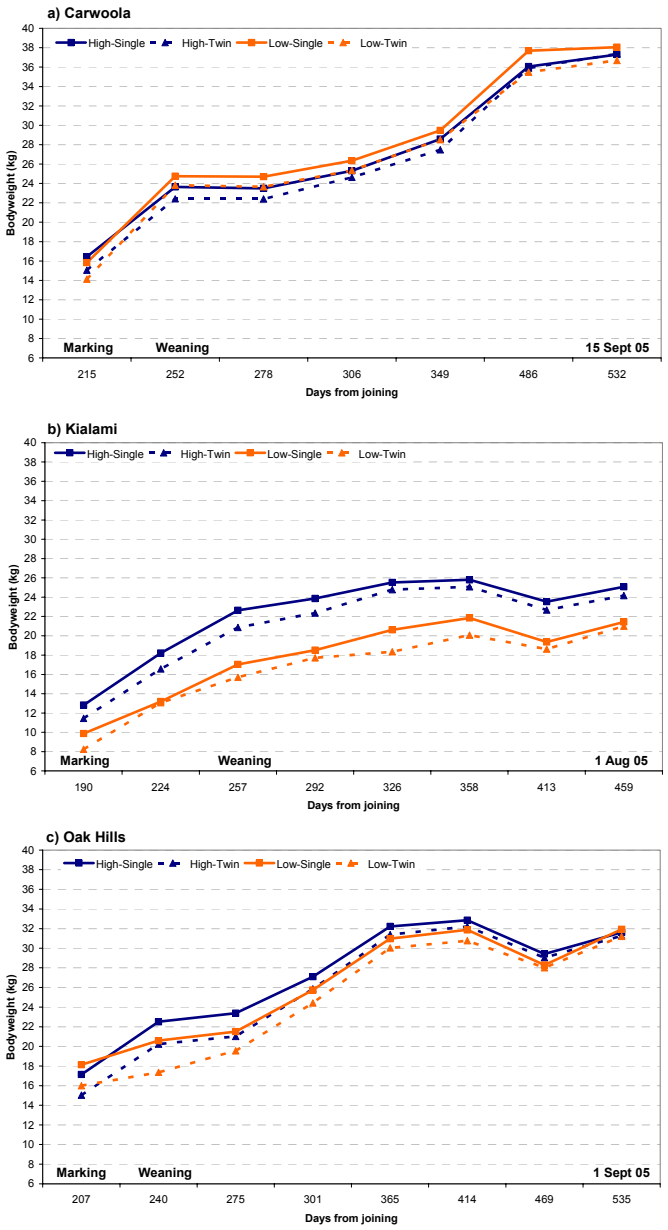

Figure 1: Progeny bodyweight profiles since marking at each of the three NSW paddock-scale sites.

At Kialami the seasonal conditions during 2004 were more favourable and a maximum difference in fat score of 0.64 occurred between the high and low ewe nutrition groups at day 224, with an average difference in fat score between day 98 and weaning of 0.37. This difference in ewe nutrition during pregnancy produced significant differences in progeny bodyweight that are persisting up to 15 months of age (Fig.1b). Progeny at Kialami that were born to better fed ewes during pregnancy and lactation are consistently between 3 and 5 kg heavier than progeny born to thinner ewes.

At Oak Hills, the maximum difference in fat score was 0.8 at day 242 (ie at weaning) with an average difference between day 80 and weaning of 0.42. As a result significant differences in progeny liveweight profiles were evident until the progeny were about 10 months of age (Fig. 1c). Progeny born to ewes with higher fat scores at Oak Hills were generally 2-3 kg heavier than those born to thinner ewes.

Differences between single and twin born progeny

The bodyweight profiles of single and twin born progeny from marking at all three NSW sites were very similar. At Carwoola, single born progeny were about 1.5 kg heavier than their twin born counterparts at marking with the difference decreasing with age (Fig. 1a). By 6 months of age there was no longer any significant difference in bodyweight between single and twin born progeny at this site. However it must be noted that due to the drought conditions at Carwoola, twin survival was low and most live twins could have been raised as a singles.

At Kialami, significant differences in bodyweight between single and twin born progeny persisted until about 13 months of age (Fig. 1b). Prior to this age, single born progeny at Kialami were consistently 1.5 and 2 kg heavier than their twin born counterparts. At Oak Hills single born progeny were consistently about 2-3 kg heavier than those born as twins until 9 months of age when the differences between singles and twins were no longer significant (Fig. 1c).

The largest differences in liveweight between single and twin born lambs occurred at marking, particularly in the low fat score ewes at each site. This clearly illustrates the importance of ewe fat score at lambing, particularly for those ewes carrying twins.

So what does this mean for management of hogget ewes?

It is over the summer months that producers need to ensure that hogget ewes will meet the target bodyweight and fat scores for their first joining at about 18 months of age. The targets for maiden Merino ewes are a body weight of at least 40kg and a fat score of 3. This weight and fat score will ensure highest ovulation rates and optimise conception.

To achieve these targets, it is imperative to know the current condition of your hogget ewes. At Carwoola the hogget ewes are right on track to meet these targets prior to their first joining in early April 2006. At Kialami the hogget ewes will have to be actively managed over summer if they are to achieve the targets (note that the Kialami progeny were last weighed on 1 Aug 05 and are likely to have gained significant weight since then).

Let's use the Oak Hills progeny as our example, at this site hogget ewes weigh about 31kg on average (at 1 Sept 05). If they are to be joined in early March, they have about 25 weeks to grow out to 40kg. That gives an average target weight gain over this time of about 51g/head/day.

As summer starts, there will be a decline in digestibility and energy of the pasture as plants reach mature stages of growth and 'hay off'. To combat this, the majority of hogget weight gain needs to take place on lush spring pasture or alternatively, over the whole period with some supplementation as pasture quality declines.

Based on Grazfeed predictions, on a high quality green pasture during October, hogget ewes can potentially gain 130g/head/day. For the spring we are currently experiencing, these high quality pastures are available. The animal growth rates will fall to about 90g/head/day during November as the animals increase in weight and the pasture quality declines.

Obviously the growth rates for the hoggets over these two months are well above our target of 51g/head/day. This will help us during late summer when growth rates on dead pasture will be quite minimal.

During December as the green pasture reduces to a minimum and plant quality declines even further, growth rates can fall to 40g/head/day. As the hot weather further decreases pasture quality during January, then the hoggets may require a supplement to keep us on target for the minimum joining weight of 40kg. An example being 200g/head/day of barley, which should give the animals a growth rate (combined with the available pasture) of 20g/head per day.

The exact growth rates of your hoggets will vary depending on their size, their age and the pastures that they are grazing. Just keep in mind the target weight of 40kg as a minimum for maiden ewes, and work towards that weight with pasture and if needed supplements. All NSW DPI Sheep & Wool Officers have a copy of the GrazFeed program and can help you tailor a feeding program for your maiden ewes.

Progeny liveweight profiles and their impact of animal management are only part of the profitability of your breeding flock. Survival, wool production and wool quality of the progeny are also vitally important. Economic modelling of data from Phase 1 of the Lifetime Wool project (Table 1) indicates that impact of ewe nutrition during pregnancy on progeny fleece value and lamb survival account for a significant proportion of farm profit.

Fleece weights and midside samples have been collected from all progeny at each of the three NSW Lifetime Wool sites. Differences between the high and low nutrition groups in progeny fleece value and survival will be outlined in a future edition of this newsletter.

Table 1 Proportion of variation in value of pr($/farm) described by each component.

Progeny fleece value	34
Ewe fleece value	8
Lamb survival	35
Ewe reproductive rate	23

(Source: Dr Andrew Thompson, National Project Leader of Lifetime Wool, DPI VIC)

Preparation for weaning - things to do now

1. Select and prepare weaning paddocks

- Consider pasture benchmarks to achieve target growth rates for both wether and ewe progeny.
- To reduce the worm burden graze with adult sheep or cattle first.

2. Ewe management

- Wean lambs at 14 weeks and give them access to your best available pasture.
- Decide which ewes are sound enough to continue in the breeding flock. Cull any ewes which are unlikely to successfully conceive and rear a lamb next pregnancy.
- Fat score your ewes at weaning and draft accordingly. This will allow you to make feeding and management decisions in preparation for joining.
  - Put your 2.5 year old ewes plus mixed age previously twin bearing ewes onto the next best available pasture. These ewes will most likely need to gain 1 fat score by joining.
  - Give previously single bearing ewes your third class feed as they will need to gain about half a fat score by joining.

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Lifetime Wool in NSW is funded by Australian Wool Innovation and NSW DPI. The national project is managed by the Department of Primary Industries Victoria (Dr Andrew Thompson: andrew.thompson@dpi.vic.gov.au).

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