

JUNE 2022

Sheep reproduction RD&A alert

This sheep reproduction RD&A alert is an initiative of the Sheep Reproduction Strategic Partnership (SRSP).

The [34th Biennial conference](#) of the Australian Association of Animal Sciences (AAAS) will be held in Cairns from 5 to 7 July. The conference program contains several sheep reproduction research presentations including the impact of high ambient temperature on ewe fertility; understanding ewe joining practices; birthweight, gestation length survival and litter size in Poll Dorset sheep; dystocia risk and lamb survival from high and low birthweight rams; amino acid profiles and Merino lamb birth traits; and thermotolerance of Dorper and White Dorper lambs. Full papers and one-page papers from the conference will be published in a special issue of Animal Production Science.

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Details of the sheep reproduction papers will be included in the July RD&A alert.

The SRSP aims to help sheep producers to profitability and sustainably increase lamb production through increasing lamb survival and weaning rates and will coordinate a national approach to improving sheep reproductive performance.

Feature project update

Managing fecund flocks to improve survival of triplet dams and their lambs

Over the past 25 years, sheep producers in Australia and New Zealand have increased lambing percentages through a combination of improved ewe nutrition and genetic selection. In addition, more fecund Maternal ewes have displaced Merino ewes in sheep enterprises focussed on prime lamb production. However increased fecundity is associated with an increase in the proportion of triplet-born lambs, particularly for flocks (both Merino and Maternal) with scanning percentages greater than 150%. Triplet-bearing ewes tend to have higher mortality rates than single- and twin-bearing ewes and triplet-born lambs have reduced survival rates and lower weaning weights compared to single and twin-born lambs. This is a significant limitation to the potential performance of Merino and Maternal sheep flocks with high scanning rates.

Project aim

To define the size of the issue and develop best practice management strategies to reduce the mortality of triplet-bearing Maternal ewes and their lambs, to capitalise on the profit opportunity and mitigate welfare risks.

Project objectives

1. Complete a literature review and identify knowledge gaps on management practices to reduce the mortality of triplet bearing ewes and their lambs.
2. Identify the range in current industry recommendations and suggested best practice for managing triplet-bearing Maternal and Merino ewes, from consultants, leading sheep advisors and producers.

3. Compile baseline data on current mortality rates of triplet bearing ewes and their lambs from sheep producers by working with the pregnancy scanning industry.
4. Identify a suite of management practices currently adopted by producers to reduce ewe and lamb mortality and assessed their apparent effectiveness.
5. Test the effectiveness of these practices at commercial scale, as single or multiple factor comparisons, on a network of participating farms across Australia.
6. Develop regionally based 'best-practice' management guidelines for triplet ewes and their lambs.

Current progress

A suite of management tools identified by producers were tested at 65 on-farm research sites across Australia between 2019 and 2021: i. mixed vs separate management of twin- and triplet-bearing ewes between pregnancy scanning and lamb marking, ii. 'High' vs 'Low' condition score of Merino and maternal ewes from pregnancy scanning to lamb marking, iii. 'High' vs 'Low' mob size at lambing, (iv) 'High'/'Low' Feed-On-Offer (FOO) x 'High'/'Low' supplementary feeding between pregnancy scanning and lambing, and iv. mineral supplementation during late pregnancy and lambing. These experiments found that triplet-bearing ewes:

1. should be managed separately to twin-bearing ewes from pregnancy scanning until lamb marking,
2. triplet-bearing ewes in low condition (especially Merino ewes) should receive priority nutrition after pregnancy scanning and,
3. preferential allocation of triplet-bearing ewes to lamb in small mobs in well-sheltered paddocks.

For more information on managing fecund flocks to improve ewe and lamb survival, contact Andrew Thompson (andrew.thompson@murdoch.edu.au).

Scientific papers

Breed and crossbreeding effects on growth, fitness and reproduction of commercial sheep in South Africa

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Highlights

- Dorper and South African Mutton Merino (SAMM) sheep were studied in a 2 × 2 diallel crossbreeding experiment.
- No additive breed effects were evident for lamb growth, ewe reproduction or total tick count.
- Heterosis was detected for weaning weight (7.1%), number of lambs weaned (32.5%) and total weight of lamb weaned (38.4%).
- Dam breed affected birth weight (4.5%), but not any of the other traits studied.
- Crossbreeding of a meat with a dual-purpose breed may result in benefits in commercial sheep production.

Abstract

The study aimed to assess additive breed effects for growth (birth, weaning and ewe adult weight), fitness (lamb survival and tick count under natural challenge) and ewe reproduction traits per ewe mated in Dorspers, the most common meat breed in South Africa (SA), and the SA Mutton Merino (SAMM) a prominent dual-

purpose breed in SA extensive environments. Additionally, the reciprocal crosses between the two breeds were used to estimate dam breed effects and heterosis. No conclusive additive breed differences were found for lamb weight traits, lamb survival or tick counts. There was a suggestion that lamb survival of Dorpers was higher than that of their SAMM contemporaries, but significance could not be demonstrated. Crossbred progeny outperformed the midparent value by 7.1% for weaning weight. As far as mature ewes were concerned, mating weight was affected by breed combination with the mating weights of purebred SAMM ewes as well as crossbred ewes exceeding that of purebred Dorpers. Number of lambs born per ewe lambled was independent of the genetic group. The SAMM x Dorper group outperformed the pure breeds for number of lambs weaned per ewe mated (NLW). Contrasts for additive breed and maternal heterosis were not significant for NLW, but direct heterosis amounted to 32.5%. Crossbred ewes performed better than the pure breeds for total weight of lamb weaned per ewe lambled, direct heterosis amounting to 38.4%. The other contrasts were not significant. A lack of additive effects for traits, barring ewe mating weight suggested that the breeds performed similarly under the conditions of the study. Significant heterosis effects for weaning weight as well as number and weight of lamb weaned suggest a role for crosses between Dorpers and SAMMs in commercial lamb production enterprises.

Upcoming events

Date	Event	Location
20 July 2022	Winning With Weaners Sheep Connect NSW	West Wyalong, NSW
16 August 2022	MeatUp Forum Meat & Livestock Australia	Wagga Wagga, NSW