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## **Farmer use and experience of ultrasonic pregnancy scanning**

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### **ABSTRACT**

Ultrasonic pregnancy scanning has enabled better feed allocation and lambing management of our breeding flock. In the past two years, scanning has also identified many of the triplet-bearing ewes but there is a need to develop more effective systems for managing these ewes. We attribute much of the 18% increase in lambing percentage over the past four years to improved management based on scanning results. Scanning also has benefits in the genetic improvement of the flock and we envisage in the near future selecting all replacements from twin-bearing and triplet-bearing ewes that have lambed as hoggets and subsequently never had more than one single birth.

**Keywords:** Sheep; lambing percentage; pregnancy scanning.

### **INTRODUCTION**

We farm 485 hectares on which are carried 4300 Coopworth ewes that are mated to Texel and Finn x Texel rams. In 1994, we scanned our flock for dry ewes and late lambing ewes. In the subsequent four years we have scanned for dry ewes and twin-bearing ewes. In the latter two years most of the triplet-bearing ewes were also identified although the scanner operator had not been specifically contracted to identify these.

### **MANAGEMENT OF SCANNED EWES**

Following scanning, the single-bearing and twin-bearing ewes are normally separated. In winters when feed has been in short supply the priority for feeding has been the twin-bearing ewes. At lambing time, the single-bearing and twin-bearing ewes are always managed in separate mobs through until weaning. Stocking rates are set at the level where five ewes with singles are run on the same area that supports four ewes with twins. Ewes in the singles mob are shepherded once per day and the twins mob twice per day. Shepherding is mainly to attend to cast ewes and those with vaginal prolapses.

After tailing, the singles mob is rotationally grazed if there is a shortage of spring pasture. On occasions the single-bearing mob has been kept on very restricted feed, and as ewes lamb they were shed off to very steep hill blocks.

The overall aim is to feed the ewes to maximise lamb and ewe weaning weights. Dry ewes are sold immediately after scanning. This not only makes winter feed available to the pregnant ewes, but also usually maximises the returns from dry ewes because prices for cull dry ewes tend to decline later in the year. Sometimes having to re-raddle sheep according to scanned litter size to fit in with shearing is extra work.

### **GENETIC SELECTION**

In 1999, for the first time, all replacement hoggets were selected from twin-born lambs. Since 1996 all ewes scanned with singles have been identified, and any scanned again with a single were tagged and assigned to the terminal sire flock for life. When there is pressure to dispose of stock in a drought year these poorer ewes are the first to be culled.

### **HOGGET SCANNING**

In our experience the differential feeding of hoggets scanned with singles and those with twins has helped limit the size of single lambs from hoggets. Increasing emphasis is being placed on hogget lambing and the future selection policy will require that all replacement ewes must have lambed as a hogget. In the meantime, any two tooth ewe that has a single lamb and had not lambed as a hogget will be assigned to the terminal sire flock for life.

### **MANAGING TRIPLETS**

In 1998, the ewes scanned with triplets were lambed separately. The triplet mob was further divided according to mating date on the basis of tupping marks. This concentration of ewes lambing triplets in a concentrated period of time led to major problems of mismothered lambs. There was also a very high incidence of vaginal prolapses in the triplet-bearing ewes.

In future, we plan to change our management of triplet-bearing ewes. The options we are considering include lambing triplet-bearing and twin-bearing ewes together, having a mix of mating marks within a group to spread out the lambing, and temporarily subdividing paddocks to reduce mob size and movement.

## CONCLUSION

Since we began scanning for twins there has generally been an upward trend in scanning and lambing percentage. In 1995, the scanning percentage was 155%, in the drought year of 1996 it declined to 144%, and then increased to 160% and 173% in 1997 and 1998 respectively. For the same four years, the lambing percentage (exclud-

ing hoggets) was 115, 119, 133 and 141% respectively. To date the benefits of scanning have been mostly in improved flock management, but in future the selection of replacements from twin-bearing ewes that have lambed as hoggets and the assignment of ewes having a second single birth to the terminal sire flock, will also improve the genetic merit of the flock.

## Field data analysis of lamb survival and mortality rates occurring between pregnancy scanning and weaning

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### ABSTRACT

Ultrasonic scanning for pregnancy diagnosis in commercial sheep flocks has highlighted the magnitude of lamb loss from scanning to docking or weaning. From seven ram breeding flocks in Landcorp Farming Limited, lamb survival rates were derived from the number of lambs per ewe present at six stages: pregnancy scanning, birth, born alive, 48h after birth, end of lambing and weaning. Differences in lamb survival rates between adjacent stages provided the mortality rates for five intervals: pregnancy scanning-birth; birth-born alive; born alive-48h after birth; 48h after birth-end of lambing; end of lambing-weaning.

Flock-year affected lamb survival rate at all stages ( $P < 0.001$ ) but varied with ewe age and lamb birth/rearing rank ( $P < 0.001$ ). Mean lamb survival rates for 3- and 4-year-old dams were generally higher than those of other dam age groups. Triplet-reared lambs had consistently lower survival rates than single- or twin-reared lambs ( $P < 0.001$ ).

Lamb mortality rates for the five intervals were 0.03, 0.08, 0.03, 0.03 and 0.04 lambs per potential lamb at scanning, respectively. Lamb mortality was highest at birth, with lower survival rate of triplet-born lambs compared with single- and twin-born lambs ( $0.82 \pm 0.006$  vs  $0.93 \pm 0.004$  and  $0.93 \pm 0.002$  lambs per potential lamb respectively;  $P < 0.001$ ).

The results indicated when, and to what extent, lamb losses occurred in the field between pregnancy scanning and weaning, and the importance of applying appropriate ewe/lamb feeding and management policies to minimise lamb mortality rates.

**Keywords:** Sheep; ultrasonic scanning; pregnancy diagnosis; lamb survival.

## INTRODUCTION

Pregnancy diagnosis of ewes by ultrasonic scanning is routinely applied in many New Zealand sheep flocks. Knowledge of ewe pregnancy status enables producers to review pre-tupping feeding/management policies, to more appropriately allocate feed resources prior to (and during) lambing, and to compare the flock's "potential" lambing performance with the realised lambing performance.

Pregnancy diagnosis has highlighted to producers the magnitude of the gross lamb loss occurring between scanning in mid-pregnancy through to lamb docking or weaning. The objective of this analysis was to break down this gross lamb loss into more discrete time periods. Knowledge of when lamb losses occur between pregnancy diagnosis and weaning, and the extent of these losses, could enable producers to target ewe/lamb management to improve lamb survival rates.