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Contract Session

Alternative forages for livestock production

ST Morris* and PR Kenyon

International Sheep Research Centre, Massey University, Private Bag 11222, Palmerston North, 4442, New Zealand.

**Corresponding author. Email: s.t.morris@massey.ac.nz*

In the New Zealand sheep, dairy and beef cattle industries, pastures are predominantly perennial ryegrass-white clover with some brassica and maize crops grown. There has, however, been increased interest in pure swards of alternative legumes such as lucerne and red clover, or forage herbs such as plantain and chicory.

The improved lambing percentages in New Zealand over the last 30 years have resulted in a greater number of multiple pregnancies, and a subsequent increase in the numbers of lambs being born and finished on farms. This has highlighted the need for improved forages on sheep and beef cattle farms. The grazing of the herbs - chicory and plantain - either as pure swards, or in mixes with red and white clover, is increasingly being used within New Zealand dairy cattle and sheep systems.

Grazing a forage herb sward mix of plantain, chicory, red and white clover in late pregnancy, and in lactation, increased ewe milk production and lamb survival and growth, in twin and triplet-bearing/rearing ewes, and thereby produced more total lamb live weight per ewe at weaning, than the traditional ryegrass/white clover herbage. Similar results have been reported for hoggets lambing on these mixes. It has also been re-confirmed that improvements in lamb growth can occur on lucerne swards on dryland farms. It is well established that pure swards of red and white clover, plantain, chicory and lucerne can all increase lamb growth post-weaning. However, recently there has been interest in using these herb-clover mixes to increase lamb performance on both a per lamb and per ha basis, due to higher stocking rates. Data from a research experiment at Massey University indicates over 700 kg/lamb carcass weight per hectare per year can be achieved, compared to 400 kg carcass weight per hectare with ryegrass/white clover pastures. A recent trial has seen young weaner Friesian bull calves grow at 1.3 kg /day from November to March on these herb-clover mixes. Chicory has been used as a pure stand to support summer milk production in the northern parts of New Zealand, and studies have shown that dairy pastures containing chicory and plantain have reduced the N concentration in urine from grazing dairy cows.

Combined, these results indicate that herb-clover mixes have the potential to transform sheep, beef and dairy cattle production systems in New Zealand. The following contract consists of six papers outlining the potential of alternative forages for sheep, beef and dairy production in New Zealand.