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Summary only

THE EFFECT OF PLANE OF NUTRITION AND
FEEDING FORMALIN-TREATED CASEIN ON THE
PRODUCTION, FIBRE DIAMETER AND TENSILE
STRENGTH OF WOOL

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TWENTY-SIX mixed age twin-bearing Romney ewes were individually pen fed over the last ten weeks of pregnancy and the first five weeks of lactation. Mating was synchronized and lambing took place over five days.

A pelleted ration containing 77.8% hay, 17.1% barley and 5.1% casein was fed. This was in two batches, according to whether the casein had been "protected" from ruminal degradation by formaldehyde treatment or whether untreated ("non-protected") casein was used. The non-protected ration was fed at high, medium and low planes of nutrition and the protected ration at medium and low planes only.

Midside wool patches were clipped every five weeks and the clippings were tested for clean dry wool production and for fibre diameter. A staple sample was taken in February, after one year's wool growth and the breaking strain determined.

With the non-protected ration minimum wool production and fibre diameter were recorded in early lactation. Improved nutrition at all stages of the trial increased both these parameters.

Protecting the casein at the low plane of nutrition increased lamb birth weight. As judged by lamb growth rates, it also either increased the rate of milk secretion or improved the nutritive value of milk. There was a small increase in wool production but little or no increase in fibre diameter.

At medium plane of nutrition, protecting the casein had no effect on lamb measurements, but increased both the production and fibre diameter of wool. These increases were such that the winter minimum of the seasonal rhythm was almost eliminated for production and in the case of fibre diameter it was eliminated.

Breaking strain of wool staples was increased by both plane of nutrition and by protecting the casein.

In a metabolism study with Romney wethers, fed the same ration as for these ewes, protecting the casein had no effect on nitrogen digestibility, but increased the retention of nitrogen at the higher nitrogen intakes.