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PHOSPHATE APPLICATIONS AFFECT THE COUMESTROL LEVEL OF MEDICS

By T. Marshall* and R. J. Parkin†

Five levels of super—nil, 60, 120, 180 and 240 lb. per acre—were used with the medic and there were four replications of each treatment. The experiment was repeated in 1965, 1966 and 1967.

The plots were lightly grazed each year and samples of dry burr and stem were analysed for coumestrol content during the summers of 1966-67 and 1967-68.

Results

Results of the analyses are summarised in the figure. The levels represent the average coumestrol content of each super treatment plot.

Coumestrol in Harbinger medic

Discussion

The variation in coumestrol levels between 1966-67 and 1967-68 is difficult to explain. As the coumestrol levels of all treatments fell by similar amounts from 1966-67, the variation cannot have resulted from a super build up. Also, as variations in coumestrol levels have been found from year to year in other studies, it appears that coumestrol levels are not affected by the age of the pasture.

The results of this trial however, clearly indicate a fall in the coumestrol content of the medic with higher rates of super.

Research has indicated that sheep grazing pasture containing about 100 p.p.m. coumestrol take in the equivalent of eight microgrammes per day of stilboestrol (a synthetic oestrogen). When injected daily beginning three weeks before and continuing during the mating period, this level of stilboestrol is sufficient to cause infertility in ewes.

As the coumestrol levels found in the low super plots in 1966-67 were greater than 100 p.p.m., they might therefore be expected to cause infertility in ewes.

Because this State has large numbers of ewes which graze dry medic pastures during mating, the results suggest that such pastures should be supered adequately to avoid the risk of grazing pastures of high coumestrol level. This risk is low where pastures are topdressed at the recommended rate, or where there is a bank of previously applied super.

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