

Effects of Fertiliser on Pasture Protein Levels

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It is well accepted that fertiliser increases pasture production. However, the improvement in pasture quality is often overlooked. The increased animal performance is often due more to improved quality than quantity.

Methods

Trials were established in 1987 to examine pasture responses to phosphorus (P) and sulphur (S) fertiliser. Treatments were nil fertilizer, S (as gypsum) applied alone for 3 years at 25 kg S/ha, and P and S annually at 10 kg P and 25 kg S/ha. Pastures used were either

natural pasture over-sown with sub-clover or a sown pasture of lucerne, sub-clover and phalaris.

Results and Discussion

Where P and S were applied to natural pasture, the average spring protein content increased from less than 10 to 18% (Figure 1). While 3 applications of gypsum increased protein levels for 4 years, P and S annually continued to increase protein each year, with the actual increases tending to be greater with time. The large differences in years 5 and 6 (1991, 92) are very important as they were very dry springs, and yields were

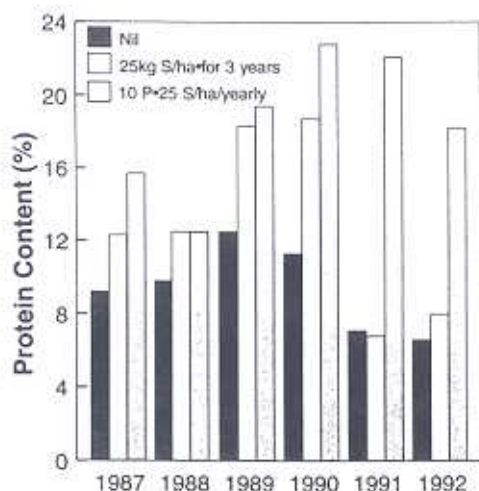


Figure 1. Effect of fertiliser on average spring protein content of natural pasture oversown with subclover, 1987-1992.

low. The extra quality of this production is even more important for animal production in times of feed shortage.

For the sown pasture, differences in protein levels were not as great, mainly due to the presence of lucerne, which raised the protein level of the unfertilised plots (Figure 2). Annual P and S increased protein each year, while sulphur applied for 3 years increased protein levels for 4 years, showing the benefit of an-

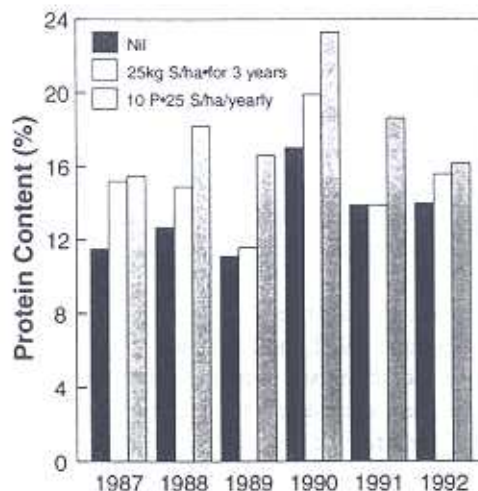


Figure 2. Effect of fertiliser on average spring protein content of sown pasture, 1987-1992.

nual fertiliser applications. Protein levels of nil plots in autumn were often only 4-6% due to lack of legume. However, when lucerne was present, autumn protein levels rarely fell below 8% showing the benefit of lucerne even without fertiliser.

Acknowledgment

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