RESEARCH NOTES :

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Effect of Nitrogen and the Frequeney of Cutting in Guinea Grass (*Panicum maximum* L.)

Extraction and utilization of leaf protein from fresh leaves, which constitute a potentially rich source of protein as a valuable supplement to protein deficient diet, has been stressed by Pirie (1969). An attempt was made to find out the effect of nitrogen and the frequency of cutting to get the maximum extractable protein yields with guinea grass, a fodder crop.

A field trial was laid out in the black soil area of the Tamil Nadu Agricultural University Farm and 35 000 slips/ha was the population adopted. Nitrogen in the form of ammonium sulphate was applied at 100, 200, 300 and 400 kg ha. Half the nitrogen was applied as basal and the rest 30 days after planting. Phosphorous and potassium were applied to all the plots in the form of superphosphate and muriate of potash at 60 kg/ha.

Dry matter was recorded on twelve occasions at 30 days interval commencing from the 75th day coinciding with the flowering stage. The samples were processed for the extraction of leaf protein as described by Balasundaram and Samuel (1971) and the analysis and calculation of extractable protein yields were done as per the method of Byers and Sturrock (1965). The percentage efficiency of utilization of additional nitrogen was also calculated as suggested by Byers and Sturrock (1965).

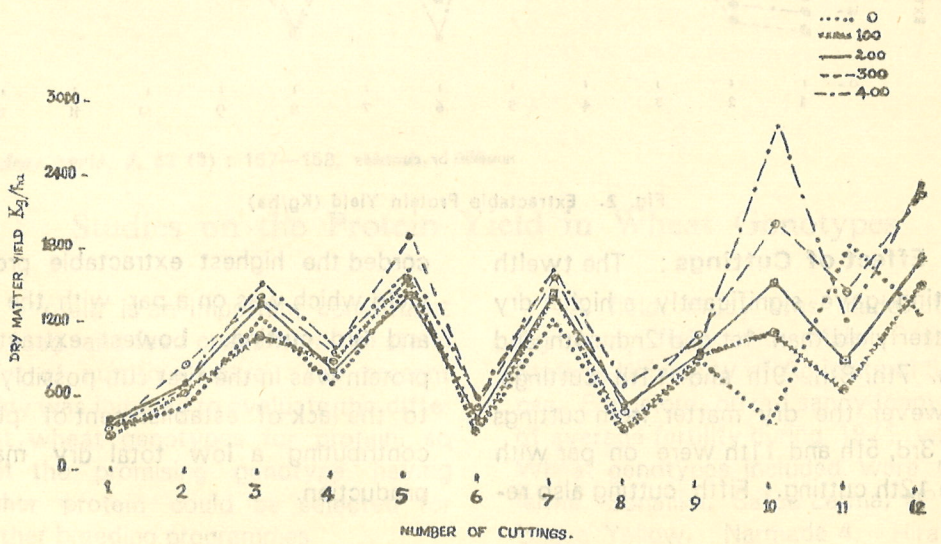

Fig. 1. Dry Matter Yield (Kg/ha)

The dry matter and the extractable protein yields are presented in Figs. 1 and 2. The dry matter yield varied trom 309 to 2966 kg/ha, while the yield of extractable protein ranged from 7.5 to 56.2 kg/ha. When the N application was increased, there was an increase in the dry matter yield and an application of 400 kg/ha recorded the highest yield, followed by 300 kg/ha.

Higher levels of nitrogen application increased the extractable protein. Such an increase in crude protein due to N application in guinea grass has been reported (Little *et al.*, 1959; Vincente-Chandler *et al.*, 1959; Olsen, 1972 and Kandasamy *et al.*, 1973).

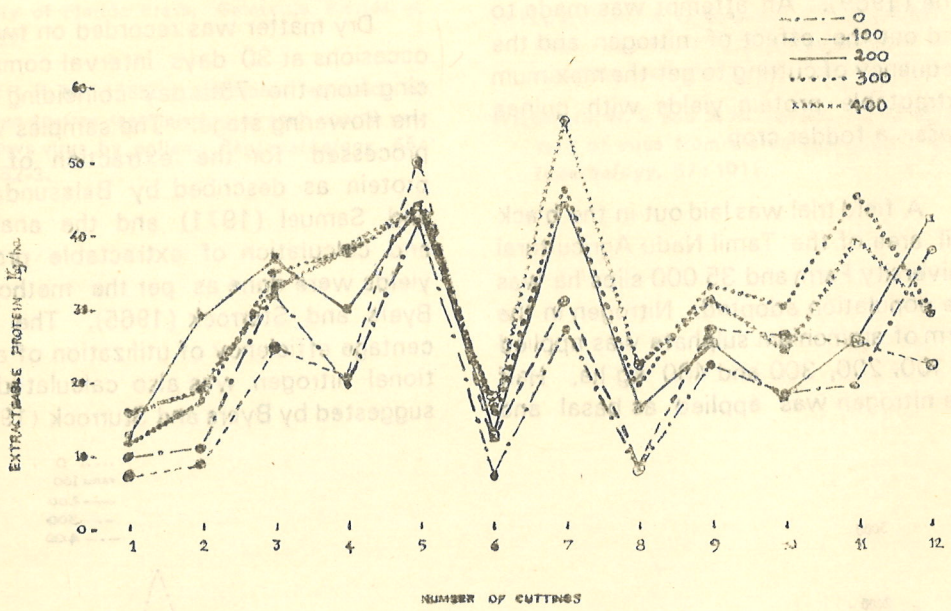

Fig. 2. Extractable Protein Yield (Kg/ha)

Effect of Cuttings : The twelth cutting gave significantly a higher dry matter yield than 1st and 2nd, 4th and 6th, 7th, 8th, 9th and 11th cuttings. However the dry matter from cuttings on 3rd, 5th and 11th were on par with the 12th cutting. Fifth cutting also recorded the highest extractable protein yield which was on a par with the 7th and 3rd cutting. Lowest extractable protein was in the first cut, possibly due to the lack of establishment of plants contributing a low total dry matter production.

Efficiency in using additional N on the Yield of extracted protein : The response to additional N could be seen markedly in the 4th, 7th, and 8th cuttings and the extracted protein yield increased almost linearly with a corresponding increase in the application of N.

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Studies on the Protein Yield in Wheat Genotypes

Protein is an important constituent of food and feed crops from the stand point of nutritive value. The present study was initiated to evaluate the different wheat genotypes for protein, so that the promising genotype having higher protein could be selected for further breeding programmes.

A field study was made at the Agronomy field unit, Main Research Station, University of Agricultural Sciences, Bangalore on red sandy loam soils of average fertility during 1971 winter. Wheat genotypes included were Choti lerma, Sonalika, Safed Lerma, UP 301, Bijaga Yellow, Narmada 4, Hira and