

STUDIES ON THE CRUDE PROTEIN CONTENT OF GUINEA GRASS AND COMPONENT CROPS UNDER DIFFERENT SPACINGS.

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The beneficial effect of mixed cropping of grass and legume has been reported by many workers (Singh, *et al.* 1968 Chanhhan, *et al.* 1971) Relwani (1970) reported that leguminous crops are rich in protein while cereal fodders constitute an excellent source of energy. Experiments at IGFRI (Anon, 1972) showed that mixed sowing of *M. P. Chari* and cowpea not only increased the green fodder yield but also increased the crude protein content of the forage from 4.9 per cent for chari alone to 7.5 per cent for the mixture. The crude protein content of guinea grass and component crops was also found out during a study conducted to assess the performance of guinea grass under different spacings with and without legumes as intercrops.

Materials and Methods

The experiment was laid out in the farm attached to the College of Agriculture, Vellayani, Kerala from October 1975 to September 1976. The treatments were three spacings of guinea grass (40 x 20 cm, 60 x 20 cm and 80 x 20 cm) and three levels of inter cropping (no inter cropping, inter cropping with cowpea and inter cropping with stylosanthes). Factorial experiment in randomised block design was used for laying out the experiment. The treatments were replicated twice. An NPK dose of 200 - 50 - 50 kg/ha was given to all the plots in addition to 10 t/ha of farmyard manure applied as basal dose. While two crops of cowpea were taken as inter crops in the guinea grass rows, only one crop of stylosanthes was taken. Eight cuts of guinea grass were taken at 30-35 days interval. The plant samples of guinea grass and component legumes after each cut were taken and total nitrogen content was determined by modified micro-Kjeldahl method and crude protein content was calculated by multiplying the nitrogen content by the factor 6.25.

Results and Discussion

The average crude protein content in percentage at each harvest of guinea grass and component crops are presented in Table I (a) and I (b) respectively. It is seen that crude protein content of guinea grass was neither adversely affected nor significantly increased by different spacings. This is in

Table 1 (a) Crude protein content (%) in guinea grass

| Treatment | 1st cut | 2nd cut | 3rd cut | 4th cut | 5th cut | 6th cut | 7th cut | 8th cut | Mean |
|-----------------------|---------|---------|---------|---------|---------|---------|---------|---------|-------|
| <i>Spacing</i> | | | | | | | | | |
| 40 X 20 cm | 12.09 | 11.32 | 8.49 | 10.56 | 11.00 | 12.52 | 12.20 | 12.20 | 11.30 |
| 60 X 20 cm | 11.98 | 11.32 | 8.28 | 11.22 | 11.22 | 12.30 | 12.20 | 12.41 | 11.37 |
| 80 X 20 cm | 12.09 | 11.54 | 8.38 | 11.32 | 11.11 | 12.41 | 11.98 | 12.20 | 11.38 |
| 'F' test | N S | N S | N S | Sig. | N S | N S | N S | N S | |
| <i>Inter cropping</i> | | | | | | | | | |
| No intercrop | 11.65 | 11.00 | 8.28 | 11.00 | 11.00 | 12.20 | 11.43 | 11.98 | 11.07 |
| Cowpea | 12.52 | 11.87 | 8.61 | 11.21 | 11.11 | 12.74 | 12.85 | 12.85 | 11.72 |
| Stylosanthes | 11.98 | 11.32 | 8.28 | 10.89 | 11.22 | 12.30 | 12.09 | 11.98 | 11.16 |
| 'F' test | Sig. | Sig. | N S | N S | N S | N S | Sig. | Sig. | |
| C D (0.05) | 9.424 | 0.396 | 0.664 | 0.630 | 0.435 | 0.564 | 0.562 | 0.445 | |

Table 1 (b) Crude protein content (%) of component crops

| Spacing of guinen grass | Cowpea 1st cut | Cowpea 2nd cut | Stylosanthes |
|-------------------------|----------------|----------------|--------------|
| 40 X 20 cm | 18.90 | 19.21 | 15.30 |
| 60 X 20 cm | 19.63 | 19.93 | 14.90 |
| 80 X 20 cm | 19.13 | 19.16 | 15.40 |
| 'F' test | N S | N S | N S |
| C D (0.05) | 1.438 | 1.402 | 0.730 |

agreement with the findings of Tiwana, *et al.* (1975) and Anon (1975) in hybrid napier. Because of intercropping an increase in the crude protein percentage of guinea grass to an extent of 0.65 per cent by cowpea and 0.09 per cent by Stylosanthes was observed although the increase was not statistically significant. The crude protein content in the third cut was found to be the lowest when compared to the other cuts. The probable reason may be the increase in cutting interval (89 days). According to Kothandaraman (1973) and Balasundaram (1975) the crude protein content was maximum in 30 days interval of cutting and decreased with increase in days.

സംഗ്രഹം

‘ഗിനി ഗ്രാസ’ വിവിധ അകലത്തിലും അതിനോടൊപ്പം ‘സ്റ്റെലോ സാന്തസം’ ‘പയറം’ ഇടകലർത്തിയും നട്ടു നോക്കിയപ്പോൾ പ്രസ്തുത *rolrail.aco* പല്ലിലെ മാംസ്യംഗത്തിന്റെ *reragci/co? ffloooo* വരുത്തുന്നില്ലെന്നും അടുത്തടുത്ത കാലയളവിൽ പുല്ലുവെട്ടുന്നതു മാംസ്യംഗം കുറയ്ക്കാൻ ഇടയാക്കുന്നുവെന്നും കണ്ടു.

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