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RESEARCH NOTES

EFFECT OF NITROGEN AND LIME ON THE YfELD ATTRIBUTES AND YIELD OF DINANATH GRASS *(Pennisetum pedicellatum* Trin.)

Dinanath grass (*Pennisetum pedicellatum* Trin.) is an annual which has high yield potential. A field experiment involing three varieties of Dinanath grass was conducted in the Instructional Farm and Research Station, College of Agriculture, Vellayani during July-December, 1977.

The treatments consisted of three levels of nitrogen and three levels of lime in factorial combinations and the experiment was laid out in a 3^3 partially confounded design with two replications (Table 1). The soil of the experimental site was red loam with a pH of 5.2 and contained 0.058 and 0.012 per cent of total and available nitrogen respectively.

The grass seeds were sown at a spacing of 50 x 24 cm. Thirty per cent nitrogen as urea according to treatments, 60 kg P_2O_5/ha as super phosphate and 30 kg K_2O/ha as muriate of potash were applied as basal dose at the time of planting. Forty per cent of N was applied one month after sowing and the remaining 30 per cent immediately after the first harvest. Quck lime was applied as per treatment three weeks before sowing. Three harvests were taken in all the varieties just before flowering. The duration from sowing to final harvest was 115 days in all thevarieties.

The variety JP-12 was significantly taller than Pusa-1. PP-15 was on par with Pusa-1 and JP-12 In tiller production, Pusa-1 was followed by PP-15 and these were significantly superior to JP 12. With reference to N, an increasing trend was noticed for both the characters. Nitrogen being the most important element for growth and deveiopment of plants, its supply and availability would have helped the plants to grow taller with more number of tillers The present results are in agreement with those of Rathore and Vijaykumar (1977) and Anon. (1978).

Both nitrogen and lime had increased the leaf and stem yields. There was little difference between the varieties in their leaf-stem ratio. The nitrogen and lime applications also did not significantly influence the leaf-stem ratio. This is due to the fact that both the leaf and stem yields increased to the same extent by nitrogen and lime applications

The analysis of total green fodder yields for the three harvests showed that PP–15 had given a significantlv higher yield than Pusa–1, even though it was on par with JP-12. The highest yield of PP-15 might be attributed to the higher number

Table 1

The yield and yield attributes of Dinanath grass varieties as influenced by different levels of Nitrogen and Lime

Treatment	Height (cm)	Tiller (No/hill))	Leaf weight t/ha)	Stem weight (t/ha)	Leaf : stem ratio	Green fodder (yield t/ha)
Varieties						
Pusa-1	96,81	46.72	13.52	13.25	0.741	31.77
PP -15	106.78	46,24	14.89	20.11	0.740	35.00
JP -12	118.31	37.52	14.61	20.18	0.724	34.79
C D at 5%	13.68	4.20	NS.	NS.	NS.	1.58
N leavels kg/ha						
50	99.62	38.20	12.26	15.95	0,769	28.21
100	108.68	45.21	15.05	20 00	0,753	35 05
150	113.60	47.08	15.52	22.77	0.682	38.29
C D at 5%	NS	4.20	1.39	2.04	NS	1.58
Lime levels kg/ha						
0	105.63	41.98	13.95	19.00	0.734	32.95
375	107.88	45.09	14.10	19.43	0.726	33.53
750	108,39	43 42	14.99	20.09	0.746	35.08
C D at 5%	NS	NS	NS	NS	NS	1.58

of tillers, more height and higher leaf and stem yield in this variety. JP-12 which gave a comparable yield as that of PP–15 had the maximum height and leaf yield. Nitrogen application had significantly increased the green fodder yield. Similar results of increased fodder production by nitrogen application were obtained by Narwal *et al.* (1977), Rathore and Vijaykumar (1977) and Anon. (1978).

Highest level of lime (750kg/ha) also increased the fodder yield significatly. This may be attributed to the beneficial effects of liming on the availability of plant nutrients and consequently on the various growth attributes which directly contribute to yield. The results are in conformity with those of Walker *et al.* (1975), Bircham and Creuchley (1976).

The results indicate that PP-15 and JP -12 are superior varieties and that application of nitrogen and lime is beneficial for increasing yield attributess and fodder yield.

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സംഗ്രഹം

ദീനനാഥ് എന്നറിയപ്പെടുന്ന roil roപ്പുല്ലിൻെറ മൂന്നിനങ്ങൾക്ക് വിവിധ അളവിൽ നൈട്രജനും കുമ്മായവും നല്കി നടത്തിയ ഒരു പരീക്ഷണത്തിൽ, ഹെക്ടറിന് 150 കിലോഗ്രാം നൈട്രജനും 750 കിലോഗ്രം കുമ്മായവും നല്കുന്നത് വിളവ് വർദ്ധിപ്പിക്കുന്നതിനു സഹായിക്കുമെന്ന കണ്ടു. പി പി–15, ജെ പി–12 എന്നീയിനങ്ങൾ ഏറ്റവുമധികം വിളവുതരുന്നവയാണെന്നും തെളിഞ്ഞു.

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C. T. ABRAHAM
C. SREEDHARAN
G. RAGHAVAN PILLAI

College of Agriculture,
Vellayani, Trivandrum.

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