

FODDER PRODUCTION POTENTIAL OF FIVE CULTIVARS OF BAJRA (*Pennisetum typhoides*. Stapf) IN COCONUT GARDEN LANDS OF KERALA

Bajara is an important cereal fodder crop which can produce abundant quantity of good quality fodder within a short period when compared to perennial grasses. In Kerala there is ample scope for cultivation of forages as intercrops in the partial shaded coconut garden which will go along way in solving the fodder shortage of the state.

In an evaluation trial on cultivars of bajra conducted at Palampur (Himachal Pradesh) the cv. Nagarjuna recorded maximum green fodder yield and dry matter yield when tried with cv. Anand Selection, Visakha, Giant Bajra and Rajko (Anon, 1978a). On the contrary, the results of experiments conducted at Hissar showed that cv. Anand Selection produced significantly higher yield of green fodder and dry matter over Nagarjuna and Visakha (Anon, 1978b). Similar results of higher green fodder yield in cv. Anand Selection were reported from experiments conducted at Ranchi, Bihar (Anon. 1978c). But not much work has been done on the yield potential of fodder bajra varieties under Kerala conditions.

The experiment was conducted in the coconut garden of the Instructional Farm, College of Agriculture, Vellayani during the khariff season in two years (1978-'79 and 1979-'80) with five cultivars of fodder bajra—Nagarjuna, Visakha, Anand Selection, Balaji and Gujarat Selection. This experiment was laid out in randomised block design with four replications in both the years. The soil of the experimental field contained 0.026 per cent N, 0.002 per cent P_2O_5 and 3.0049 per cent K_2O . A uniform dose of N, P_2O_5 and K_2O at the rate of 40, 40, and 20 kg/ha was added as basal dressing to all the plots. Seeds were dibbled at a spacing of 30 cm between rows and 15 cm within rows. The gross and net plot area were 12.96 and 10.89 m² respectively. The rainfall received during the growth period of the crops in 1978-79 and 1979-80 was 168 mm and 135 mm respectively. The fodder was harvested at 50 per cent flowering, on 50th day of sowing of the crop. The green fodder yield, dry matter yield and leaf/stem ratio were recorded and statistically analysed.

The result on green yield is presented in Table 1. During 1978-79, cv. Balaji recorded the maximum yield of green fodder (17.075 t/ha, and was found significantly superior to Anand Selection even though it was on par with Gujarat Selection and Visakha. The performance of the varieties during 1979-80 showed that cv. Balaji was significantly superior in production of green fodder to Visakha and Anand Selection. In the pooled analysis also the superiority of the cv. Balaji was well pronounced. Nagarjuna was on par with Balaji and Gujarat selection. Least production was observed in Anand Selection.

Dry matter production is given in Table 2. The results of 1979-80 alone are significant. Therefore, the results of the pooled analysis are discussed. The pooled analysis showed that the performance of the bajra varieties almost followed the trend of green matter production. However, the variety Nagarjuna produced almost the same dry matter yield as Balaji, even though, the dry matter production of Nagarjuna was lesser than Balaji and Gujarat Selection. The high dry matter production and low leaf stem ratio show that the variety Nagarjuna is more fibrous. The best succulent as well as high yielding variety was found to be Balaji.

The result presented in Table 3 shows that the lowest leaf/stem ratio was given by Nagarjuna. This variety is more fibrous and has more stem growth when compared to leaf growth with the results that this has produced the lowest leaf/stem ratio. Anand Selection produced the highest leaf/stem ratio, but this could not be claimed as an advantage of this variety in view of the fact that it has produced the lowest green matter and dry matter productions.

The production of the varieties in general was considerably lesser during 1979-80 when compared to the previous year. This is attributed to the climatic effect wherein, there was reduction in total rainfall received during the growing season in 1979-80. However, this has not adversely affected the overall trend of the results observed in 1978-79.

Perusal of the results shows that the cultivars in general did not produce as much higher yields as reported in other states where the cultivation of bajra for fodder purpose is extensively practised. This is mainly due to the reason that bajra was grown as an intercrop in coconut gardens in this study. It is to be emphasised again that the intention of the trial was to identify the cultivars adapted to the partially shaded condition of coconut gardens in Kerala state.

The authors are thankful to Dr. N. Sadanandan, Dean, College of Agriculture, Vellayani for providing facilities for carrying out this work. Thanks are also due to the Indian Council of Agricultural Research for providing finance for this project through the All India Co-ordinated Project for Research on Forage Crops.

Table 1

Yield of green fodder of different fodder varieties of barja (t/ha)

Treatments	I year 1978-79	II year 1979-'80	Mean of two years
Nagarjuna	14.250	8.625	11.594
Visakha	15.500	6.846	11.173
Anand Selection	10.063	8.123	9.093
Balaji	17.075	9.983	13.529
Gujarat Selection	16.100	9.013	12.556
C. D. (0.05)	5.214	1.854	2.652
S. E.	1.715	0.602	0.909

Table 2

Yield of dry matter of different fodder varieties of bajra (t/ha).

Treatments	I year 1978-79	II year 1979-80	Mean of two years
Nagarjuna	4.699	4.200	4.449
Visakha	4.305	3.171	3.738
Anand Selection	3.373	3.030	3.052
Balaji	4.697	4.245	4.471
Gujarat Selection	3.786	3.866	3.826
C. D. (0.05)	2.316	0.752	0.844
S. E.	0.752	0.245	0.288

Table 3

Leaf/stem ratio of different fodder varieties of bajra

Treatments	I year 1978-79	II year 1979-80	Mean of two years
Nagarjuna	0.666	0.784	0.725
Visakha	0.948	0.903	0.226
Anand Selection	1.338	1.053	1.195
Balaji	0.763	0.948	0.855
Gujarat Selection	1.226	0.963	1.094
C. D. (0.05)	0.588	0.120	0.291
S. E.	0.192	0.045	0.100

സംഗ്രഹം

വെള്ളായണി കാർഷിക കോളേജിലെ ഇൻസ്ട്രക്ടർമാർ ഫാമിൽ നാഗാർജു mo, വിശാഖ, ആനന്ദ് സെലക്ഷൻ, ബാലാജി, ഗുജറാത്ത് സെലക്ഷൻ എന്നീ അഞ്ചു ബജ്റാ ഇനങ്ങളുടെ താരതമ്യ ഫോഡർ ഉൽപാദനശേഷി, ഇലയും തണ്ടുമായുള്ള അനുപാതം, എന്നിവ പഠിച്ചതിൽ 1978-79, 1979-80 എന്നീ രണ്ടു വർഷങ്ങളിലും ബാലാജി എന്ന ഇനം ബജ്റാ ഏറ്റവും മികച്ചതായി കണ്ടു.

College of Agriculture,
Vellayani.

G. RAGHAVAN PILLAI
N. PURUSHOTHAMAN NAIR
C.SREEDHARAN

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(M. S. received on 4-8-80)