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OPTIMUM DATES OF SOWING FOR FOXTAIL MILLET UNDER RAINFED CONDITIONS IN LOWER BRAHMAPUTRA VALLEY ZONE OF ASSAM

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ABSTRACT

In order to find out optimum dates of sowing of foxtail millet for Lower Brahmaptura Valley Zone of Assam, a field experiment was conducted during *rabi*, 1989-90 and 1990-91 at the Regional Agricultural Research Station, Gossaigaon with eight dates of sowing (16th, 26th December,5th, 15th, 25th January, 4th, 14th and 24th February) in randomised block design with three replications. The grain and straw yield were highest on 15th January sowing and decreased beyond this date. The optimum sowing time was found to be mid-January.

KEYWORDS: Rainfed, Foxtail Millet, Date of Sowing, Assam

Foxtail millet (*Setaria italica* Beauv) is grown as '*cawn*' during *rabi* under rainfed conditions in the Lower Brahmaputra Valley Zone of Assam. Date of sowing is an important agronomic factor upon which yield depends. It can yield 1.5 to 2.0 t ha^{-1} with improved practices (Chaudhari *et al.*, 1980). Informations regarding optimum dates of sowing for this crop are very meagre in this zone. Hence, the present study was undertaken to find out the optimum dates of sowing of this crop for the Lower Brahmaputra Valley Zone of Assam.

MATERIALS AND METHODS

The field experiment was conducted at the Regional Agricultural Research Station, Gossaigaon, Assam during *rabi*, 1989-90 and 1990-91 in a randomised block design with three replications. Treatments comprised of eight dates of sowing *viz.*, 16th, 26th December, 5th, 15th, 25th January, 4th, 14th and 24th February in both the years. Individual plots (4 m X 3 m) were fertilized @ 20:10:10 kg ha^{-1} of N, P_2O_5 and K_2O before sowing as basal. Seeds of a 'local' yellow seeded variety were sown @ 10 kg ha^{-1} with a spacing of 25 cm between rows. Data on plant height, number of tillers, grain and straw yield were recorded at harvest during 1989-90 but in 1990-91 only grain and straw yield were recorded. Data were statistically analysed as per design adopted.

RESULTS AND DISCUSSION

Results revealed that the differences due dates of sowing on plant height recorded 1989-90 were significant (Table 1). Tallest plan were recorded on 15th January sowing ar thereafter, the values decreased graduall However, plant height of 15th, 25th January, 4 and 14th February were at par. Dates of sowir could not produce any significant effect on numb of tillers m^{-1}. However, the differences on gra yield due to dates of sowing were significant both 1989-90 and 1990-91 (Table 1). Grain yie reached maximum of 15th January sowing in bo the years and thereafter, decreased sharply reachir lowest on 24th February sowing. The mean gra yield decreased rapidly when the sowings we postponed beyond 15th January as evidenced b the meagre yield of 6.5, 4.5, 3.6 and 2.7 q ha^{-1} f 25th January, 4th, 14th and 24th February sowir respectively and this increase ranged from 45 (25 January) to 76 per cent (24th February) from th of 15th January sowing. The reduction of gra yield for late sowing might be due to moistu stress at early growth stage and high temperatu during grain filling stage which might hav affected the formation of grains.

Significant differences on straw yield we observed in 1990-91 only. Straw yield becam highest on 15th January sowing thereafte

Table 1. Effect of different dates of sowing on plant height, number of tillers, grain and straw yield and grain:straw ratio of foxtail millet

Dates of sowing	Plant height (cm)	Number of tillers m^{-1}	Grain yield (q ha^{-1})			Straw yield (q ha^{-1})			Mean Grain:straw ratio
	1989-90	1989-90	1989-90	1990-91	Pooled	1989-90	1990-91	Mean	
16th December	83.3	25.2	8.2	3.5	5.9	26.6	16.0	21.3	0.28
26th December	84.8	29.3	8.6	7.5	8.1	30.3	26.5	28.4	0.29
5th January	80.1	27.9	6.7	7.1	6.9	25.1	28.6	26.9	0.26
15th January	96.6	25.2	15.1	7.8	11.5	36.4	36.8	36.6	0.31
25th January	90.7	26.1	7.9	5.1	6.5	33.1	31.4	32.3	0.20
4th February	93.8	24.7	4.0	4.9	4.5	19.9	27.4	23.7	0.19
14th February	92.4	26.4	3.0	4.2	3.6	24.6	22.3	23.5	0.15
' th February	83.5	25.3	1.3	4.0	2.7	24.2	22.4	23.3	0.12
CD at 5%	10.77	NS	3.9	2.8	2.1	NS	9.7	-	-

NS = Non-significant

decreased gradually. Similar decreasing trend was also observed in case of grain : straw ratio recording highest value on 15th January and lowest on 24th February sowing.

Thus from the results of the present experiment, mid January was found to be the optimum sowing time for foxtail millet in the Lower Brahmaputra Valley Zone of Assam.

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OWL PERCHES FOR RODENT MANAGEMENT IN RICE ECOSYSTEM

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ABSTRACT

Owl perches of various designs are used in different parts of Tamil Nadu for rodent management. Efficacy of one such owl perch was tested in the rice fields by counting the number of live rat burrows, 30 days after erection of perches and at weekly intervals thereafter in fields with and without owl perches. The owl perch was made of wooden rod (2 - 3m long) with a ball of straw in the top. These were pegged at random, mostly near the bunds at the rate of 45 per ha from the booting to harvesting stages of rice crop. Ther perches helped the owls, mostly the Barn Owl, *Tyto alba* (Scopoli) and the Spotted Owlet, *Athene brama* (Temminck) to hunt rats effectively. In fields with owl perches, there was no increase in the number of live burrows and in fields without perches, there was rapid increase in the number of live burrows. Rice yield from fields with owl perches was two times more than that from fields without perches. When owl perches were removed after a time, dramatic increase in the number of rat burrows was observed. The perches were used by the King Crow, *Dicrurus adsimilis* (Bechstein) during day time for perching and they hunted the flying insects.

KEYWORDS: Rodent Management, Owl Perches, Barn Owl, Rice Ecosystem

Rodents are formidable pests causing enormous losses to field crops and stored produce. Chemical control of rats with acute poisons and chronic anticoagulants is not only expensive but also environmentally unsafe. In addition, bait shyness and poison tolerance/resistance developed by rats are to be overcome. It is now realised that rodent control is essentially an ecological management (Prakash, 1968) and biological control offers the best solution for rat control (Stern *et al.*