

PRODUCTION POTENTIAL OF JUTE VARIETIES IN TAMILNADU

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ABSTRACT

Experiments conducted at Agricultural College and Research Institute, Madurai, Tamil Nadu during 1981 to 1982 revealed that jute (*Corchorus Olitorius*) can be successfully cultivated in the wetlands of Periyar-Vaigai command area of Madurai district. Jute variety JRO 878 raised during March-August gave a fibre yield of 2085 kg⁻¹ ha with the application of 60 kg⁻¹ ha N.

KEYWORDS : Jute, Fibre Production, Nitrogen levels, Jute Varieties.

Jute (*Corchorus olitorius*), an important fibre crop of India has great potential as a commercial crop in the wetland where rice is the dominant crop. There is evidence to suggest that jute can be successfully cultivated in Tamil Nadu (Iruthayaraj *et al.*, 1977) However, the introduction of jute into this region necessitates the identification of suitable varieties and evaluation of their fibre production potential under the agro-climatic conditions prevailing in Tamil Nadu. The Periyar-Vaigai command area in Madurai district can be a potential area for jute production due to the availability of canal irrigation water for nearly nine months.

MATERIALS AND METHODS

Field experiments were conducted at the Agricultural College Farm, Madurai during 1981 and 1982 to evaluate the performance of jute varieties under different levels of nitrogen application. The experiment was laid out in randomised blocks design, replicated thrice. The experimental treatments included four varieties of Jute viz. JRC 212, D 154, JRO 878 and JRC 7447 and four levels of N viz., 0, 20, 40, and 60 kg.ha⁻¹ N. The N was applied half at sowing and the remaining half at 30 DAS. The P and K were applied commonly at 30 kg.ha⁻¹ at sowing. The crop was raised during March to July. Fibre was extracted by water retting.

RESULTS AND DISCUSSION

Mean values of various growth characters, wet weight of stalks and fibre yield are presented in Table 1.

Plant height at harvest ranged from 229 to 262 cm for the different varieties. Variety JRO 878 produced the longest stalks (262 cm) which also exhibited greater girth (1.7 cm). The variety recorded a wet weight of stalks of 28625 kg.ha⁻¹ and produced fibre yield of 2057 kg.ha⁻¹. This variety performed consistently well during both the years of study. High fibre yielding potential of JRO 878 has been reported from Coimbatore (Iruthayaraj *et al.* 1977)

The N application produced a linear response with the higher level of 60 kg.ha⁻¹ N producing longer and thicker stalks and high yield of wet stalk. Increase in plant height and base diameter of jute with increasing levels of N has been reported by Jain and Jugal Kishor (1965). Fibre yield of 1780 kg.ha⁻¹ was obtained at 60kg.ha⁻¹ N. Response of Jute upto 60 kg.ha⁻¹ N has been observed earlier (Iruthayaraj *et al.* 1978).

The results of the experiment have clearly brought out the potential for growing jute in the wetlands of Madurai District. Jute variety JRO 878 can be recommended for growing during March to August. A potential yield of about 2000 kg of fibre can be obtained from a hectare with the application of 60:30:30 kg.ha⁻¹ NPK.

Table 1. Growth characters and yield of jute

Treatments	Plant height at harvest (cm)		Girth of stem at harvest (cm)		Wet weight of stalks (kg.ha ⁻¹)		Fibre yield (kg.ha ⁻¹)					
	1981	1982	Mean	1981	1982	Mean	1981	1982	Mean			
<u>Varieties</u>												
1. JRC 212	232	225	229	1.5	1.4	1.45	24791	23812	1472	1395	1433	
2. JRD 154	229	222	226	1.4	1.3	1.35	22125	20250	21187	1464	1370	1417
3. JRD 878	266	258	262	1.7	1.7	1.70	29625	27626	28625	2085	2030	2057
4. JRC 8447	232	225	229	1.4	1.4	1.40	24833	22959	23896	1474	1430	1452
SED	1.7	1.6		0.03	0.02		1695	1652		16	24	
CD(5%)	3.4	3.2		0.06	0.04		3465	3371		46	49	
<u>Nitrogen levels</u>												
0 kg ha ⁻¹ N	226	219	223	1.3	1.3	1.30	22833	20334	21584	1460	1365	1412
20 kg ha ⁻¹ N	234	227	231	1.4	1.4	1.40	24666	22668	23667	1528	1215	1371
40 kg ha ⁻¹ N	244	237	241	1.6	1.5	1.55	25750	24251	25000	1700	1650	1675
60 kg ha ⁻¹ N	254	248	251	1.7	1.7	1.70	28125	26416	27270	1810	1750	1780
SED	1.7	1.6		0.03	0.02		1695	1652		16	24	
CD 5%	3.4	3.2		0.06	0.04		3465	3371		46	49	

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Madras agric. J.78 (9-12) Sep-Dec-1991

EFFECT OF IRRIGATION REGIMES AND SEED TREATMENT ON DRY SEEDED IRRIGATED SHORT DURATION KHARIF RICE (KURUVAI) IN THANJAVUR DELTA

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ABSTRACT

An experiment conducted to study the effect of pre flowering moisture stress and seed hardening in short duration *Kharif* rice revealed that moisture stress at vegetative stage affected the tillering and panicle production but not the grains panicle⁻¹, thousand grain weight, grain yield and harvest index. Seed hardening of rice cv.TKM.9 with succinic acid 100 ppm increased the root length, root dry matter, production of panicles, test weight of grain and increased the grain yield by 12.5 per cent over untreated seeds. Maintaining a dry seeded rice crop at weekly wetting with 40 mm of water upto 45 days from germination has registered a saving of 62 per cent of irrigation water compared to continuous wetting without sacrificing the grain yield.

KEYWORDS: Rice, Dry seeded, Irrigation regimes.

A cultivation technology which can help the Thanjavur delta farmer to sow a short duration rice crop (*Kuruvai*) in the middle of June in the double crop low lands without waiting for the late release of canal water in the river Cauvery is the need of the hour. Dry seeding of rice and maintaining the crop with irrigations using ground water resources till the receipt of water in the canals can be an approach. The entire growth period of rice is not equally sensitive to soil moisture stress as the crop shows differential tolerance both to the intensity and duration of soil moisture stress applied at different growth stages. A knowledge of the safe limits of dura-

tion of moisture stress for different growth stages will be greatly useful to economise irrigation water to dry seeded irrigated rice. A study was taken up to work out the safe limits of moisture stress before converting the dry seeded rice to low land submergence condition and to study the effect of seed hardening to induce drought resistance in stressed rice crop.

MATERIALS AND METHODS

An experiment was conducted at soil and Water Management Research Institute, Thanjavur during the first rice season (*Kuruvai*) of 1984