

Response of pigeonpea varieites to different planting patterns

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ABSTRACT

The study on response of pigeonpea varieties to different planting pattern was carried out during 2001-2002 in Kharif season with an object to find out suitable planting pattern for pigeonpea. The two different varieties were used for study. The treatments consists of two different planting pattern (*i.e.* normal and paired) as a main plot treatments. Four combinations were laid out in sub plots. As regards the planting pattern the pigeon pea yield did not differ when planted either in paired row or normal row planting *i.e.* it is to be grown as sole crop in uniform planting pattern, while as intercrop in paired will be of use.

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Pigeonpea [*Cajanus cajan* (L.) Millsp] is one of the most important pulse crop cultivated in the semiarid areas of tropics and subtropics. The ability of pigeonpea to produce economic yields in moisture deficit soil make it an important crop of dryland agriculture. The farmers grow it in various production systems as a mixed crop,

intercrop or as a perenial crop using long established traditional practices. The knowledge of planting pattern of these newly developed pigeonpea varieties will help to increase the productivity and stabilize the yield of pigeonpea crop. Therefore, the present investigation was undertaken.

Table 1 : The growth attributes influenced by different planting pattern at various growth stages

Growth attributes	Treatments (planting pattern)	Days after sowing (DAS)					at harvest
		30	60	90	120	150	
Height of plant (cm)	P ₁ -Normal	32.80	71.30	113.23	156.93	189.58	191.98
	P ₂ - Paired	32.30	70.76	113.97	152.40	189.10	191.48
	S.E. _±	0.30	0.62	1.34	0.62	0.90	0.79
	C.D. (P=0.05)	N.S.	N.S.	N.S.	1.97	N.S.	N.S.
Number of functional leaves	P ₁ -Normal	8.00	42.46	192.08	187.60	122.01	76.53
	P ₂ - Paired	7.90	40.92	192.17	186.60	121.40	76.45
	S.E. _±	0.10	0.41	0.39	0.32	0.34	0.65
	C.D. (P=0.05)	N.S.	1.30	N.S.	N.S.	N.S.	N.S.
Number of branches	P ₁ -Normal	3.15	4.40	10.82	12.72	14.67	15.83
	P ₂ - Paired	3.14	4.33	10.83	12.75	14.62	15.86
	S.E. _±	0.08	0.07	0.05	0.06	0.09	0.10
	C.D. (P=0.05)	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
Number of root nodules	P ₁ -Normal	13.27	29.59	13.71	---	---	---
	P ₂ - Paired	13.58	29.97	13.80	---	---	---
	S.E. _±	0.34	0.74	0.45	---	---	---
	C.D. (P=0.05)	N.S.	N.S.	N.S.	---	---	---
Total dry matter accumulation (g/plant)	P ₁ -Normal	1.94	11.13	37.87	48.80	71.11	74.88
	P ₂ - Paired	1.91	11.01	37.57	59.11	70.10	74.22
	S.E. _±	0.06	0.12	0.23	0.17	0.20	0.19
	C.D. (P=0.05)	N.S.	N.S.	N.S.	N.S.	0.62	0.58

NS=Non-significant

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Table 2 : The yield parameters influenced by different planting pattern

Treatments (planting pattern)	Yield parameters (q/ha)					Harvest index (%)
	Pod yield	Grain yield	Stalk yield	Bhoosa yield	Biological yield	
P ₁ -Normal	26.90	17.26	31.30	9.24	74.19	23.15
P ₂ - Paired	27.25	17.14	32.20	9.03	73.70	23.32
S.E.±	0.68	0.57	0.79	0.23	1.63	0.74
C.D. (P=0.05)	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.

NS=Non-significant

The field experiment was conducted during *Kharif* season of 2001-2002 at Agriculture College Farm, M.A.U., Parbhani. The soil topography of plot was fairly leveled. Soil samples from 0-30 cm strata were taken all over the experimental area for the purpose of studying physico-chemical properties of soil. The experimental field was ploughed with mould board plough and brought to fine tilth by subsequent harrowings. Stables of previous crops were collected and field was kept ready for sowing. The experiment was laid out in Split Plot Design. The treatments consisted of two planting patterns *i.e.* P₁ (Normal) and P₂ (Paired) and two varieties of pigeonpea *i.e.* V₁ (BSMR-736) and V₂ (BSMR-853).

The results of the present study based on means and their statistics are interpreted (Table 1). The plant growth attributes namely height of plant, number of branches, number of root nodules and total dry matter accumulation per plant were not significantly influenced by different treatments at most of the growth stages, except the plant height (156.93cm) at 120 DAS, number of functional leaves (42.46) at 60 DAS and total dry matter accumulation (71.11 and 74.88 g/pl) at 150 DAS and at

harvest, respectively was found to be significantly more in normal planting as compared to paired planting.

Where as the yield parameters *i.e.* pod, grain, stalk, bhoosa and biological yield (q/ha) were also not significantly influenced by planting pattern under study (Table 2). Hence, the pigeonpea yield did not differ when planted either in paired row or normal row planting pattern. In brief, it is to be grown as sole crop in normal (uniform) planting is useful but for intercropping system, paired planting pattern will be beneficial. Similar experiment was conducted by Singh and Choudhary (1998).

REFERENCES

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