Journal of Tropical Agriculture 31 (1993) : 112 - 115

EFFECT OF SEASON ON THE SUCCESS AND GROWTH OF BUD GRAFTS OF JACK *(ARTOCARPUS HETEROPHYLLUS* LAM.)

Budding has been reported to be quite successful in jack on the basis of preliminary studies made by Teaotia *et al.* (1963), Samaddar and Yadava (1970), Moti and Chaturvedi (1976) and Singh *et al.* (1982). However, no much work has been done on the budding of jack. Hence, study was undertaken in the Department of Horticulture, College of Agriculture, Dapoli on different methods of budding.

In this experiment, eight budding methods viz., shield or T budding, inverted T budding, patch budding, forkert budding, 'I' budding, chip budding, ring budding and flute budding were tried. The experiment was laid out in a randomised block design for each method separately considering each month as a treatment and replicated thrice. Twenty bud grafts formed a unit for one treatment in each replication. Seeds were sown in the month of May, 1986 and the seedlings were used for budding from April, 1987 to September, 1987. The seedlings raised in May, 1987 were used for budding purpose from October, 1987 to March, 1988. Budding was performed on 10th day of every month starting from April, 1987 to March, 1988. The buds were selected from a healthy jack tree and shoots having these buds were defoliated 7 days before the budding date to enforce proper development of axillary buds. Observations were recorded in respect of final sprouting, survival, number of leaves and length of the sprouts, 90 days after the respective operation date.

Results (Table 1) indicated that out of eight budding methods tried, sprouting was observed only in patch budding, forkert budding and T budding. There was no sprouting in rest of the budding methods. The percentage of sprouting of patch bud graft was the maximum (71.66%) in the month of February and was significantly superior to that in months, except January (66.66%) The bud grafts prepared during the month of June recorded 23.33 per cent sprouting which was the lowest amongst different months. However, no sprouting was observed in the month of April and May. The bud grafts prepared in the month of February recorded the maximum survival (68.33%) and was significantly superior to other treatments, except January (63.33%). The bud grafts prepared during the month of June recorded the lowest survival of 21.76 percent.

The mean number of leaves per graft was significantly superior in case of bud grafts prepared in August, February and March to that in rest of the months. The shoot length was significantly more in bud grafts prepared in February than that in other months.

In case of forkert method of budding, the percentage of sprouting and percentage of survival differed significantly during various months. The percentage of sprouting (66.66%) and percentage of survival (61.66%) were maximum in February and were significantly superior to other treatments except January (63.33% and 60.00%), respectively.

As regards growth, the mean number of leaves per graft was significantly more in case of bud gafts prepared in the month of August (3.93) than rest of the months, except March

Table 1. Effect of season on sprouting of different bud grafts of jack

Treatments	Patch budding	Forkert budding	T budding
April, 1987	0.00	0.00	0.00
May, 1987	0.00	0.00	0.00
June, 1987	23.83	0.00	15.00
July, 1987	28.66	0.00	15.00
August, 1987	33.33	25.00	26.66
September, 1987	50.00	33.33	31.66
October, 1987	45.00	43.33	35.00
November, 1987	60.00	45.00	45.00
December, 1987	63.33	48.33	48.33
January, 1988	66.66	63.33	55.00
February, 1988	71.66	66.66	58.33
March, 1988	46.66	50.00	33.33
SE	2.73	2.17	3.34
CD (0.05)	8.00	6.36	9.79

(3.60). But mean shoot length (13.73 cm) was significantly more in case of bud grafts prepared in the month of February than other months, except August (13.13 cm). Bud grafs prepared during the months of October, recorded minimum number of leaves (2.26) and the minimum shoot length was noticed in the bud grafts prepared in the month of December (7.35 cm).

In case of 'T' budding method, the percentage of sprouting and percentage of survival differed significantly during various months. The percentage of sprouting (58.33%) and percentage of survival (55.00%) were maximum in February and were significantly more than that in other treatments except in January (55.00%, and 53.33%, respectively).

Mean number of leaves per graft (4.00) was significantly more in case of bud grafts prepared in the month of February than other months, except March (3.53) and August (3.46). But the bud grafts prepared in the month of August recorded significantly more shoot growth (14.40 cm) among all the months. However, the bud grafts prepared during the month of July recorded the minimum number of leaves per graft (1.86) and shoot length (6.66 cm).

The results of the present experimentation clearly indicated that patch, forkert and T budding methods were suitable for jack propagation under Konkan conditions. The period from September to February appeared to be optimum for preparation of the bud grafts.

Similar results were also reported by Moti and Chaturvedi (1976), Kolekar (1979). Singh *et al.* (1982) and Pathak (1986) in jack. Moti and Chaturvedi (1976) obtained 97.7 and 67.5 per cent success in

Table 2. Effect of sason on survival and growth of patch, forkert and T bud grafts of jack

Treatments	Patch pudding			Forkert budding			'I' budding		
	Survival %	Number of leaves	Shoot length (cm)	Survival %	Number of leaves	Shoot length (cm)	Survival %	Number of leaves	Shoot length (cm)
April, 1987	0	0	0	0	0	0	0	0	0
May, 1987	0	0	0	0	0	0	0	0	0
June, 1987	21.67	2.66	10.33	0	0	0	13.33	2.26	9.46
July, 1987	23.33	2.33	9.60	0	0	0	13.33	1.86	6.66
August, 1987	30.00	4.26	15.13	23.33	3.93	13.13	23.33	3.46	14.40
September, 1987	46.60	2.73	12.00	30.00	2.66	11.00	28.33	2.53	10.06
October, 1987	43.33	2.33	11.73	36.66	2.26	8.26	31.66	2.26	7.80
November, 1987	56.66	2.46	9.80	43.33	2.46	8.06	41.66	2.46	7.33
December, 1987	60.00	2.46	10.93	45.00	2.33	7.35	43.33	2.13	7.66
January, 1988	63.33	2.40	10.33	60.00	2.40	8.40	53.33	2.13	7.80
February, 1988	68.33	4.20	18.47	61.66	3.46	13.73	55.00	4.00	10.60
March, 1988	43.33	3.93	12.86	45.00	3.60	11.46	30.00	3.53	11.46
SE	2.77	0.14	0.61	1.95	0.13	0.52	3.59	0.20	0.62
CD (0.05)	8.14	0.40	1.80	5.73	0.37	1.52	10.56	0.58	1.81

patch budding during 1970 and 1971, respectively. Kolekar (1979) observed maximum success of 80-100 per cent in patch budding using buds without petiole and 40-100 per cent success using buds with petiole from September to February. Singh *et al.* (1982) recorded 90.00 and 81.60% success in patch budding during June and July, respectively. Pathak (1986) reported 100% success in patch budding of jack. In the present study methods like shield budding, inverted T budding, chip budding, ring budding and flute budding were completely unsuccessful in jack. Khan (1946) and Naik (1963) also reported that various types of budding methods proved completely unsatisfactory in jack. Naseem *et al.* (1984) also opined that the budding was complete failure in jack in Kerala.

Konkan Krishi Vidyapeeth
Dapoli 415 712, Maharashtra, India

A.J. Kelaskar
A.G. Desai
M.J. Salvi

REFERENCES

Biswas, M.M. and Hossain, A.K.M.A. 1984. Successful methods of vegetative propagation of jackfruit. *Bangladesh Agri. Res.* 9(2) : 145-146

Khan, K.F. 1946. Clones of jackfruit (*Artocarpusintegrifolia*) *Indian J. Hort.* 4 (1/2) : 46-47

Kolekar, D.T. 1979. Studies on propagation of jackfruit (*Artocarpusheterophyllus* Lam.). M.Sc. (Agri.) thesis, Konkan Krishi Vidyapeeth, Dapoli

Moti, D.L. and Chaturvedi, O.P. 1976. Propagation of tropical and subtropical fruits by budding. *Punjab Hort. J.* 16 (1/2) : 33

Naik, K.C. 1963. *South Indian Fruits and Their Culture,* Varadachary and Co., Madras, p. 300-301

Nazeem, P.A., Gopikumar, K. and Kumaran, K. 1984. Vegetative propagation in jackfruit (*Artocarpusheterophyllus* Lam.) *Agri. Res. J. Kerala* 22(2) : 149-154

Pathak, R.K. 1986. Present status of jackfruit (*Artocarpusheterophyllus* Lam.) in India. Paper presented at Fruit Research Workshop (Subtropical and Temperate Fruits) held at Dapoli from 18 to 20 December, 1986

Samdar, H.N. and Yadav, P.S. 1970. A note on the vegetative propagation of cashewnut, avocado, jackfruit and custard apple. S. *Indian Hort.* 18 (1/2) : 47-49

Singh, U.R., Pandye, I.C., Upadhyay, N.P. and Prasad, R.S. 1982. Propagation of jackfruit by budding. *Punjab Hort. J.* 22 (1 and 2) : 103-105

Teaotia, S.S. and Dayal, S.K. and Asthama, M.P. 1963. Propagation of jackfruit by budding. *Sci. Cult. 29* : 46- 47

□■□