

**Key characters**

1. Secondary rachis tends to incurve at flowering
2. Long glume covering 3/4 of the grain

districts of Tamil Nadu. This strain was released during 1996 as APK 1 for general cultivation for the entire state of Tamil Nadu.

**ACKNOWLEDGEMENTS**

The authors express their sincere thanks to Dr.B.S. Rana, Project Co ordinator (Sorghum), Hyderabad for testing APK.1 Sorghum as SPV 881 in the co-ordinated trials.

It is suitable for cultivation as a rainfed crop in June-July and September-October seasons (Table 1). It is a photo and thermo insensitive variety and hence can be grown even in summer seasons viz. December - January and March - April in all the

Madras Agric. J., 83(5): 310-312 May 1996  
<https://doi.org/10.29321/MAJ.10.A01033>

## PPI-I JACK : A NEW HIGH YIELDING, REGULAR BEARING JACK VARIETY FOR TAMIL NADU

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**ABSTRACT**

A study made at the Horticultural Research Station, Pechiparai to evolve a new jack variety with higher per plant yield, firm flesh, regular bearing tendency, adjustable for commercial planting and suitable for all regions of Tamil Nadu from 14 germplasm collection has resulted in the selection of a promising clone PAH 10, released as PPI-1. It is a clonal selection from Kazhukupala type. This high yielding variety comes to first fruiting in five years. It out yielded the local variety with 107 fruits, weighing 1818 kg compared to the local variety which gave 75.7 fruits weighing 865 kg. The yield increase over already released jack variety PLR.1 is 204 per cent for fruit number and 305 per cent for fruit weight in the off season. The firm and attractive carpels with sweet and pleasant aroma are the advantages of this variety. This new variety can be propagated in larger number in a short time through budding method standardised at the station.

**KEY WORDS :** Jack, *Artocarpus heterophyllus*, New Clonal Selection, High Yielding, Regular Bearing

The Jack fruit (*Artocarpus heterophyllus*) is an evergreen tree, producing more yield per tree than any other fruit tree and bears the largest edible fruit (Sinha, 1968). It is one of the most popular fruits in South India and enjoys special favour in home gardens and smaller commercial gardens in the west coast and is also used as one of the shade trees in coffee, areca, cardamom and pepper plantations. Owing to the numerous culinary uses and the fact that it is plentiful in a period when the region is in the grip of heavy monsoon, jack fruit earned the well deserved name of poor man's food. Besides all parts of the plant are economically useful. The outer pericarp of the fruit is a prized cattle feed. The seeds are relished when boiled or roasted. The latex from the bark contains a large amount of resin and is often used to plug holes in earthen coarse or *mhote* buckets. The timber is valuable and is used in construction as well as for furniture. The leaves

together for use as dining plates in villages. Besides minerals, fruits contain vitamin A and C. A fruit of such diverse value and uses deserves to be grown widely. Nowadays this tree is grown as a plantation scale in Kerala and parts of Tamil Nadu.

The humid and warm climate of hill slopes upto 1220 m elevation is ideal for its growth. Being cross pollinated and mostly seed propagated, the jack fruit has innumerable types of forms considering the fruit characteristics. Such variations among clones offer scope for improvement of this fruit crop by clonal selection method (Samaddar, 1990).

The varieties grown at present generally bear fruits only once *ie.*, the main season (April - June). Hence, efforts were made at the Horticultural Research Station (HRS), Pechiparai to select and release a jack variety combining superior yield,

tendency to bear two seasons and less damage by pest and diseases.

## MATERIALS AND METHODS

Among the 14 accessions maintained at HRS one high yielding medium statured less spreading and bearing twice a year PAH-10 has been compared with Pechiparai local cultivar from 1980 onwards upto 1994. The number and weight of fruits during on and off season and their consistency have been recorded. The total brix was calculated by using hand refractometer. The ascorbic acid content (A.O.A.C., 1970) total sugars, and reducing sugars (Somogyi, 1952) were analysed and acidity was ascertained by titrimetry.

## RESULTS AND DISCUSSION

The results of the yield trials conducted during 1980-1994 at Mulagumoodu site are furnished in Tables 1-3. The improved new clonal jack selection PAH-10 recorded an annual average yield per tree of 107 fruits weighing 1818 kg compared to the local varukkai which gives 75.7 fruits weighing 865 kg. PAH-10 jack (PPI-1) yields 66 per cent during main season and 34 per cent during off season. The average fruit weight is 16.81 kg in the on season and 17.28 kg in the off season while that of the

Table 1. Comparative performance of PAH.10 jack with Pechiparai local : main season (April - June)

Year	No. of fruits/tree		Weight of whole fruits/tree	
	PAH-10 Jack	Pechiparai Local Jack	PAH-10 Jack	Pechiparai Local Jack
1980	60	57	1008	685
1981	62	73	1012	857
1982	85	69	1428	860
1983	87	74	1444	870
1984	76	71	1292	895
1985	34	34	590	380
1986	29	32	516	380
1987	111	61	1800	670
1988	104	59	1675	625
1989	93	53	1567	535
1990	87	51	1470	505
1991	67	57	1152	530
1992	52	69	905	774
1993	47	53	846	650
1994	69	54	1160	594
Mean	70.87	57.80	1191	654
CD	11.5598		276.6599	

Table 2. Comparative performance of PAH.10 jack with Pechiparai local : Offseason (November-December)

Year	No. of fruits/tree		Weight of whole fruits/tree	
	PAH-10 Jack	Pechiparai Local	PAH-10 Jack	Pechiparai Local
1980	35	13	609	160
1981	30	14	535	195
1982	18	19	340	215
1983	48	17	810	225
1984	38	27	654	285
1985	15	12	290	150
1986	19	10	350	140
1987	47	17	780	210
1988	62	21	1025	230
1989	42	16	720	225
1990	36	23	625	235
1991	46	17	796	189
1992	33	17	575	223
1993	37	21	648	205
1994	38	24	646	285
Mean	36.27	17.87	626.87	211.47
CD	8.7391		139.2619	

local variety is 11.31 and 11.84 kg respectively. This off season bearing is a unique trait of this variety and fetches higher price and giving substantial additional income to farmers.

Table 3. Comparative performance of PAH.10 jack with Pechiparai local : Annual yield

Year	No. of fruits/tree		Weight of whole fruits/tree	
	PAH-10	Pechiparai Local	PAH-10	Pechiparai Local
1980	95	70	1647	845
1981	92	87	1547	1052
1982	103	88	1768	1075
1983	135	91	2254	1095
1984	114	98	1946	1180
1985	49	46	880	530
1986	48	42	866	520
1987	158	78	2580	880
1988	166	80	2700	855
1989	135	69	2287	760
1990	123	74	2095	740
1991	113	74	1948	719
1992	85	86	1480	997
1993	84	74	1494	855
1994	107	78	1806	879
Mean	107.13	75.67	1817.87	865.47
CD	21.8147		376.6088	

Table 4. Organoleptic Quality

Quality Traits	PAH-10 Jack	Pechiparai Local
Carpel		
Brix (%)	28.0	23.0
pH	5.0	5.2
Ascorbic acid (mg/100g of edible pulp)	7.92	7.25
Total sugars (%)	9.97	8.76
Reducing sugars (%)	9.53	8.23
Acidity (as Citric acid/100 g edible pulp)	0.391	0.350
Seed		
Cooking quality	Edible, Highly palatable	Edible, palatable

The fruit quality is good with sweet and pleasant aroma, firm and attractive creamy yellow carpels. The total soluble solids percentage is 28 in PAH.10 as against 23 in the local. The pH is 5.0 (Table 4) in PAH.10 while that of Pechiparai local is 5.2. The Ascorbic acid content per 100 g edible pulp is slightly more in PAH.10 (PPI-1) is 7.92 mg as against 7.25 in Pechiparai local. The reducing sugar total sugars and acidity are more in PAH.10 (PPI-1) than in Pechiparai local. The seeds are

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medium in weight and also edible with high palatability. The percentage of carpels to the whole fruit is 40.28 with only mere 18 unfertilised carpels out of 352 carpels. The trunk bearing accounted for 80 per cent. As the tree is short and medium spreading, this PAH.10 (PPI-1) jack can be highly suitable for commercial cultivation, mixed gardens and home gardens in the tropical and sub-tropical areas of Tamil Nadu.

In view of the above desirable attributes, the new clonal selection PAH.10 has been released as Pechiparai-1 (PPI-1) jack for general cultivation in Tamil Nadu.

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(Received : August 1996 Revised : September 1996)

## RAJENDRA SADA PAT-1 : A NEW HIGH YIELDING JUTE VARIETY

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#### ABSTRACT

A high yielding *Corchorus capsularis* Jute culture KTC-1 has been developed through pure line selection. It recorded a mean fibre yield of 3123 kg/ha, registering 15.41, 23.93 and 23.88 per cent increased fibre yield over the ruling varieties JRG 7447, JRG 212 and JRC 321 respectively. It has better quality fibre particularly in respect of fibre fineness. The incidence of major pests and diseases was relatively less in new culture. This culture has been released as Rajendra Sada Pat-1 for general cultivation in Jute growing tracts of Bihar.

KEY WORDS : Jute, New Variety, Rajendra Sada Pat-1

Jute is mainly grown as rainfed cash crop in an area of about 1.30 lakh ha in Bihar. Although *olitorius* jute fibre fetches attractive returns compared to *capsularis* but, recently the use of *capsularis* fibre blending with cotton for making garments and use of its pulp in paper industry is gaining momentum. Moreover, *capsularis* jute has wider adaptability as well as wider time for sowing as pure crop and inter cropping in low lying areas of Kosi zone of Bihar. Interestingly enough as on

date only three standard varieties in *capsularis* jute, developed long years ago, still remain by for the most popular varieties among the jute farmers. Hence development of high yielding *capsularis* jute variety with better fibre quality is of paramount importance for enhancing jute production as well as economic status of the jute grower. Research efforts were carried out at the Jute Research Station, Katihar and the results are reported.