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TMV-5 A NEW HIGH YIELDING CASTOR FOR TAMIL NADU

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To evolve a high yielding castor variety with resistance to jassids. Crosses were effected between SA. 2 (high yielding & short duration) and S. 248-2 (A Maharastra variety with triple bloom). A derivative x1158-32 was identified and evaluated under rainfed condition in different research centres as well as in farmer's holdings. The yield data showed that X1158-32 is superior to SA. 2, this recording mean yields of 921 kg/ha (26% increase over SA. 2) in six research centres and 1108 kg/ha (26% increase over SA. 2) in six farmer's holdings. It also recorded 7-42% increased yield over SA. 2. in adaptive research trials conducted throughout Tamil Nadu. This culture being moderately resistant to jassids has been released as strain (TMV. 5) for wide cultivation.

To improve the yield potential in Castor (*Ricinus communis*) and to introduce resistance to jassids a hybridization programme was initiated under AICORPO at Pottaneri, Salem district.

MATERIALS AND METHODS

Castor SA. 2 is a high yielding short duration variety. Due to the single bloom nature SA. 2 is very much affected by jassids and the yield is considerably reduced. To impart triple bloom character into SA. 2 crosses were effected using S. 248-2, a Maharastra variety possessing the triple bloom character, as pollen parent and SA. 2 as ovule parent at castor Research Station, Pottaneri, Salem district. From the progenies of this cross a high yielding triple bloom line X1158-32 was identified This selection was evaluated for its yield potential from 1980 onwards under rainfed conditions with the ruling strain SA. 2 in different trials at Research Centres and in farmer's holdings under Multilocation Testing programme. It was further subjected to Adaptive Research Trials in the farmer's holdings in all major castor growing districts of Tamil Nadu.

RESULTS AND DISCUSSION

The morphological and quantitative characters recorded are presented in Table 1. The selection X1158-32 has greater number of spikes with more capsules per spike as compared to SA. 2. The triple bloom charac

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Table 1. Distinguishing morphological characters of TMV 5 and SA. 2

		TMT. 5	SA. 2
a)	No. of nodes to primary raceme	: 12 - 14	10-12
b)	Bloom	: Triple	Single
c)	No. of spikes per plant	: 4 - 6	3 - 5
d)	Leaf colour	: Green - Young leaf light pink with waxy coating on both side	Green. Young leaf pink with waxy coating on ventral side only
e)	Oil content	50.8	52.00
f)	Reaction to Pests	: Moderately resistant to to jassids	Susceptible to jassids attack.

Table 2. Yield evaluation trial (YET) at Pottaneri

Sl. No.	Entries	Yield kg/ha [kg]		
		1980-81	1981-82	Mean
1.	X1158 - 32	1054.89	1014.7	1034.79
2.	SA. 2	719.00	639.24	679.00
3.	TMV. 4	—	513.80	513.80
	Percentage of increase of X1158-32 over SA. 2	46%	58%	52%

ter of paternal parent was inherited in X1158-32. This culture had recorded a mean yield of 1035 kg/ha representing an increase of 52% over SA. 2 in yield evaluation trials during 1980 and 1981 (Table 2). During 1981-82 it was also tested at six Tamil Nadu Agricultural University Research Centres and six farmers holdings in Salem district. The results (vide Table-3 and Table-4) showed that X1158-32 recorded a mean yield of 921 kg/ha (26% increase over SA. 2) in six research centres and 1108 kg/ha (26% increase over SA. 2) in farmers holdings. The results established the superiority of the X1158-32.

The culture X1158-32 was also tested in adaptive research trials during 1983 Kharif in 21 farmer's holdings of major Castor growing districts of Tamil Nadu viz., Salem, Dharma-

Table 3. Results of multilocation trial - 1

Sl. No.	Cultures	Yield kg / ha						
		Agrl. Research Station, Aliyar nagar.	National Pulses Research Centre, Pudukkottai.	Cotton Research Station, Srivilliputhur.	Tamil Nadu Agricultural University, Coimbatore.	Regional Research Station, Paiyur.	Castor Research Station, Pottaneri	Mean
1.	X1158-32	1144.00	511.00	905 00	1119.34	630.00	1214.70	920.67
7.	SA. 2 check	1098.00	336.00	457.00	1102.88	556.00	839.00	731,33
	Percentage of increase of X1152-32 over SA. 2	4	52	98	1	13	58	25.89

Table 4. Results of multilocatio n trial - II conducted in farmer's holding in salem districts (1981-82)

Sl. No.	Entries	Yield kg / ha						
		Udayanoor, Mecheri	Kattuvalavu, Pottaneri.	Kolathur Mettur (TK)	Kunjandiyur Mettur (TK)	Vridhachalampatti.	Kurumbanoor Kolathur	Mean
1.	XII58-32	1292	988	1164	1235	938	1028	1107.5
2.	SA. 2 (check)	1163	741	942	839	766	823	879.0
	Percentage of increase over SA. 2	11	34.5	34.5	47	22	25	26

Table 5. Adaptive research trial / multilocation trial - II - 1982 - 83

Sl. No.	Districts	No. of Trials	Yield kg / ha Range		Mean	
			XII58 - 32	SA.2	XII58-32	SA. 2
1.	Salem	10	182.5 - 1050.0	173.9 - 820.0	615.15	560.89
2.	Periyar	3	284.0 - 835.0	198.0 - 625.0	628.00	457.66
3.	Coimbatore	2	420.0 - 640.0	290.0 - 655.0	530.00	472.50
4.	Dharmapuri	6	108.0 - 575.0	132.0 - 685.0	338.83	362.56
				Overall mean	528.65	479.9
				Percentage of increase over SA. 2	10%	
			Average for Two years :			
				1981 - 82	1107.50	879.00
				1982 - 83	528 65	479.90
				Mean	818.08	679.45
				Percentage of increase over SA. 2	20%	

purai. Coimbatore and Periyar (Table-5). It recorded 7 to 42 per cent increased yield over SA. 1 in fourteen locations. The yield was generally low due to severe drought prevailed in that season. The overall performance of this selection was superior than SA 2. showing an increase of 20% in yield over SA. 2 in two years trials in farmer's holdings.

This selection also proved moderately resistant to jassids attack. The mean No. of jassids/leaf was 3 in XII58-32 while it was 16/leaf in SA. 2.

Thus the new selection XII58-32 possessing higher yield and jassids resistance than SA. 2 has been released as TMV. 5 castor for cultivation in the castor growing districts of Tamil Nadu.

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