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TMVCH1 - THE FIRST CASTOR HYBRID FOR TAMILNADU

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ABSTRACT

The castor hybrid TMVCH1 was developed by crossing the stable thermosensitive pistillate line LRES 17 with the high yielding pollinator TMV5. This medium duration hybrid comes to maturity in 160-170 days. It gives an average seed yield of 1180 kg/ha as a pure crop and 471 kg/ha as an intercrop. It has more branches possessing more number of productive spikes. This hybrid has a higher oil content of 51.7 per cent.

KEY WORDS: Thermosensitive pistillate line, TMVCH1, Hybrid castor

Castor is the most important non-edible oilseed crop grown during Kharif season. Of late, castor is gaining wide attention owing to its extensive use in the industries and also due to its vast medicinal properties. Besides, it is presently the leading oilseed int he export sector of Indian economy. However, the production and productivity have not scaled desirable heights. In order to break the yield plateau, heterosis for yield and other attributes and taking advantage of the thermosensitive cent per cent pistillate lines in castor, synthesis of hybrids was done, which has resulted in the evolution of the high yielding castor hybrid TMVCH1. This medium duration center is first of its kind to be released for Tamil Nadu.

MATERIALS AND METHODS

The female parent of this hybrid, LRES 17, which is a stable cent per cent pistillate line and the pollinator viz., TMV 5 were sown during September in the ratio of 3:1 and the seed production was taken up. The performance of the hybrid was tested in station trials both during Kharif and Rabi from 1990 to 1993. It was tested under multilocation trials during 1994 and 1995. Based on its performance, it was promoted to Adaptive Research Trial stage and tested in farmers' fields from 1994 to 1996.

RESULTS AND DISCUSSION

The station trials conducted during 1990-93 revealed that this hybrid outyielded the check hybrid GCH4 and the check varieties TMV2 and TMV5 by recording 12, 28 and 26 per cent higher yield respectively. In the multilocation trials conducted during 1994-95, the hybrid has recorded 41 per cent increased yield over both check hybrid GCH4 and variety TMV2 (Table 1-3)

Table 1. Overall performance of TMVCH1 in comparison with GCH4

S.No.	Trial	No.of location	Seed Yield (Kg/ha)		Oil Yield (Kg/ha)	
			TMVCH1	GCH4	TMVCH1	GCH4
			PURE CROP			
1.	Station trial	4	1139	1020	589	517
2.	MLT	13	1477	1050	764	532
3.	ART	31	924	836	478	424
	Mean		1180	969	610	491
	% on GCH4		122	100	124	100
			INTER CROP			
1.	Adaptive research trial	25	471	434	244	220
	% on GCH4		108.5	100.0	110.9	100.0

Table 2. Overall performance of TMVCH1 in comparison with TMV2.

S.No.	Trial	No.of location	Seed Yield (Kg/ha)		Oil Yield (Kg/ha)	
			TMVCH1	GCH4	TMVCH1	GCH4
			PURE CROP			
1.	Station trial	4	1139	892	589	453
2.	Adaptive research trial	16	899	840	465	427
	Mean		1019	866	527	440
	% on TMV2		117.7	100.0	119.8	100.0
			INTER CROP			
1.	ART	14	448	384	232	195
	% on TMV - 2		116.7	100.0	119.0	100.0

Considering overall performance as a pure crop, TMVCH1 recorded a mean seed yield of 1180 kg/ha and oil yield of 610 kg/ha which is 22 per cent and 24 per cent greater than GCH4 respectively. Under intercropping, TMVCH1 recorded an overall mean yield of 471 kg/ha with 8.5 per cent increase over GCH4. The oil yield worked out to be 244 kg/ha which is 11 per cent higher than GCG4 (Table 1).

Similarly, the overall performance of TMVCH1 in comparison with TMV2 as pure crop revealed that TMVCH1 registered a mean seed yield of 1019 kg/ha and the oil yield of 527 kg/ha with 17.7 and 19.8 per cent higher than TMV2 respectively, under intercropping, it gave an overall mean yield of 448 kg/ha with 16.7 per cent increase over TMV2. The oil yield (232 kg/ha) is 19 per cent higher than TMV2 (Table 2). As pure crop, TMVCH1 recorded a mean yield of 1052 kg/ha which is 15.4 per cent increase over TMV5. The oil yield (544 kg/ha) is 17.5 per cent higher than TMV5. Under intercropping situations, TMVCH1 gave an overall mean yield of 425 kg/ha, registering 14.3 per cent increase over TMV5. The oil yield was 220 kg/ha which is 16.4 per cent higher than TMV5 (Table 3).

This hybrid is found to be less infested by semilooper and is also moderately resistant to wilt and grey mould (Table 4).

TMVCH1 is medium to tall in growth havit with divergent branching. The distinguishing features are

1. Stem colour : red or rose
2. Bloom : triple

Table 3. Overall performance of TMVCH1 in comparison with TMV5

S.No.	Trial	No.of location	Seed Yield (Kg/ha)		Oil Yield (Kg/ha)	
			TMVCH1	GCH4	TMVCH1	GCH4
			PURE CROP			
1.	Station trial	4	1139	906	589	460
2.	Adaptive research trial	7	964	918	498	466
	Mean		1052	912	544	463
	% on TMV 5		115.4	100.0	117.5	100.0
			INTER CROP			
1.	ART	8	425	372	220	189
	% on TMV - 5		114.3	100.0	116.4	100.0

Table 4. Screening for major pest and diseases under field conditions

S.No.	Hybrid/Variety	% of incidence Wilt	Grey mould	Semilooper larvae /plant
1.	TMVCH1	6.8	12.7	3.0
2.	GCH4	12.9	15.4	3.8
3.	TMV2	9.9	16.3	4.9
4.	TMV5	10.4	14.6	5.2

3. Nods to primary raceme : 14 to 19 (mean 16)
4. Nature of internode : Elongated
5. Leaf shape : Flat
6. Spike nature : Semi-compact
7. Capsule : Spiny, non-shattering
8. Seed : Medium sized, light chocolate with conspicuous mottling

This hybrid is ideally suited for raising both as pure crop and intercrop during Kharif (June-September) in Salem, Namakkal, Erode and parts of Trichy and Pudukottai districts of Tamilnadu.

In view of superior performance in yield and high oil content, TMVCH1 was released in 998 as the first castor hybrid for Tamilnadu.

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SNIGDHA, AN IMPROVED VARIETY OF GROUNDNUT FOR UPLANDS

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ABSTRACT

Initial evaluation trials were conducted with 18 superior types and 18 extra early segregants from the F8 progenies during 1993. From the IETs, seven high yielding types and nine high yielding, extra early progeny bulks were selected and subjected to CYTs during kharif 1994 and 1995 at the College of Agriculture, Vellayani along with check varieties. Two promising types, VGE 55-1 and ISKO 8805 with high yield and two cultures, Cul.15 and cul.18 with high yield and early maturity were advanced to farm trials along with TMV 2 and local check at 9 locations in Thiruvananthapuram district during kharif 1996. Culture 18 with high yield and early maturity was recommended for release as Snigdha suitable for cultivation in the uplands of Thiruvananthapuram district.

KEY WORDS Groundnut, Extra early, High yielding, Snigdha

Groundnut is one of the most important oilseed crops and the edible oil economy in India is primarily dependent upon groundnut production. The major portion of groundnut produced in India is utilised for oil extraction (Maiti et al, 1988).

Because of high population pressure on land there is only limited scope for increasing the area under groundnut. Lack of high yielding varieties with early maturity is the main constraint in the large scale cultivation of this crop in the uplands of Kerala. Therefore, a research programme was initiated in the Department of Plant Breeding and Genetics, College of Agriculture, Vellayani during 1992 to develop groundnut varieties with high yield and early maturity suitable for cultivation in the uplands.