

**Research Article****YRCH 1- A Promising castor hybrid for Tamil Nadu**

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**Abstract**

Castor is grown both under rainfed and irrigated situations. India is the first country to commercially exploit heterosis in castor by two line breeding based on indigenous, stable S type pistillate line, VP-1. In Tamil Nadu the choice of the castor hybrid for cultivation is very limited with availability of only a few hybrids. Hence, there is urgent need to develop and release a high yielding castor hybrid for rain fed and irrigated ecosystem of Tamil Nadu. The castor hybrid YRCH 1 is tested in station trials, MLT, ART, OFT and ICAR - co-ordinated trial along with popular hybrid checks such as GCH 4, DCH 177 and TMVCH 1. Over all the hybrid has been tested in 186 trials across various locations. The castor hybrid YRCH 1 recorded seed yield of 1861 kg/ha which is 27 per cent higher than the national check GCH 4. Duration wise it is 15 days earlier than TMVCH 1 and 30 days earlier than GCH 4. Because of its earliness, this hybrid escapes botrytis infection in early sown conditions during Kharif. In AICRP-Castor coordinated trials also this new hybrid YRCH 1 recorded highest seed yield of 2082 kg /ha which is numerically superior than the national check GCH 4. In addition to evaluation under Station trials, MLT, ART and National trials, the new hybrid is subjected to Farmers' Participatory variety Selection (FPVS) under farmers field for 3 Years (2006-2008). The farmers observed earliness, compact highly pistillate productive spike, high branching, lesser time lapse between any two order of spike, compact and short plant type and escape from botrytis in early sown conditions and higher seed yield as the reasons for selecting YRCH 1 as the hybrid of their choice

**Key Word :** Farmers' Participatory variety Selection, YRCH1**Introduction**

Castor is grown both under rainfed and irrigated situations (Anonymous, 2008-09). India is the first country to commercially exploit heterosis by two line breeding based on indigenous, stable S type pistillate line, VP-1. At present, 14 hybrids and more than 18 varieties are released either at the Central or State level. (Anonymous 2006)

In Tamil Nadu the choice of the castor hybrid for cultivation is very limited with availability of only a few hybrids. Hence there is an urgent need to develop and release a high yielding castor hybrid for rainfed and irrigated ecosystem of Tamil Nadu.

The castor hybrid YRCH 1 is tested in station trials, MLT, ART, OFT and ICAR - co-ordinated trial along with popular hybrid checks like GCH 4, DCH 177 and TMVCH 1. Over all this hybrid has been tested in 186 trials across various locations.

The castor hybrid YRCH 1 recorded seed yield of 1861 kg/ha which is 27 per cent higher than the national check GCH 4. Duration wise it is 15 days earlier than TMVCH 1 and 30 days earlier than GCH 4. Because of its earliness, this hybrid escapes botrytis infection in early sown conditions during Kharif.

In AICRP-Castor coordinated trials also this new hybrid YRCH 1 recorded highest seed yield of 2082 kg /ha which is numerically superior than the national check GCH 4

### Farmers Participatory Varietal Selection (FPVS)

Success of new crop varieties depends upon quick adoption. Often it is rather slow in marginal and low productive environments. Many times the improved varieties from the researcher fail due to the reason that farmers perception change over time. Varieties /hybrids selected from such Participatory Varietal Selection (PVS) trials are likely to be broadly accepted and in turn acceptable to farmers.

In addition to evaluation under station trials, MLT, ART and National trials this new hybrid is subjected to PVS under farmers field for 3 Years (2006-2008).

The hybrids were coded and the farmers were asked to make their own evaluation and select the hybrids of their choice for cultivation. In all the locations except very few farmers, all others opted for the new hybrid YRCH 1 as their choice. The farmers observed earliness, compact highly pistillate productive spike, high branching, lesser time lapse between any two order of spike, compact and short plant type and escape from botrytis disease in early sown conditions and higher seed yield as the reasons for selecting YRCH 1 as the hybrid of their choice.

#### i) Reaction to major disease under field and controlled conditions

Because of its earliness, this hybrid escapes botrytis in early sown conditions during Kharif. In the field, for botrytis incidence, it recorded the score of 5 in the 0-9 scale with only 11 to 25 % of capsule affected under normal epiphytotic conditions where as the checks GCH 4 and TMVCH 1 have recorded the score of 9 in the scale with more than 50 per cent of affected capsule. Less incidence of botrytis disease may be due to disease escape mechanism and its earliness in kharif season.

#### ii) Reaction to major pests (under field and controlled conditions including storage pests)

**Leaf Hopper** : For the incidence of leaf hopper the hybrid has recorded the score of 2 in 0-11 scale (Hopper burn 11-25 %). This hybrid is resistant to Jassids because of its triple bloomness.

**White fly:** The hybrid has recorded the score of 1 in the 0-5 scale (1 to 50 pupae / 3 leaves / plants during peak infestation level).

**Capsule borer:** Moderately tolerant to capsule borer with the capsule borer incidence of less than 20 % during peak infestation level.

#### Salient Features Of Castor Hybrid YRCH-1

- Average yield 1861 kg/ha under rainfed ecosystem and oil content 49 per cent.
- Early duration of 150-160 days (15 days earlier than TMVCH 1 and 30 days earlier than GCH 4).
- Suitable for rainfed and areas of limited irrigation potential because of its short duration.
- Less time lag between any two order of spike, hence more number of spike is produced in short period.
- Compact plant type suitable for intercropping system also.

The castor hybrid YRCH 1 has been released for cultivation for Tamil Nadu by the state variety release committee in 2009.

#### Acknowledgement

We are thankful to the Project Director, Directorate of Oilseeds Research, Hyderabad, Director Center for Plant Breeding and genetics and Director of Research, Tamil Nadu Agricultural University, Coimbatore for their support and guidance in development of this hybrid.

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**Table 1. All India Trials (Trials conducted under All India Co-ordinated Research Project on Castor conducted at various research centers across India)**

Sl. No.	HYBRIDS	Rainfed (Mean of 8 trials)	Irrigated (Mean of 8 trials)	Mean of 16 trials
1.	YRCH 1	1546	2618	2082
2.	GCH 4	1602	2439	2021

**Table 2. Summary of Evaluation in farmers field (OFT) (Seed yield kg/ha)**

Sl.No.	Hybrid	2006 Mean of 10 trials	2007 Mean of 40 trials	2008 Mean of 50 trials	Weighted mean (100 trials)
1.	YRCH 1	2225	1986	1905	1969
2.	GCH4	1750	1509	1390	1473
3.	TMVCH1	1650	1421	1326	1396