

TUBEROSE HYBRID PRAJWAL IN DHARMAPURI DISTRICT

Krishi Vigyan Kendra, Papparapatty, Dharmapuri district

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Background of Tuberose cultivation

Tuberose (*Polianthes tuberosa*) is an important traditional flower of India. It is used both as loose flower and cut flower. Single type is predominantly cultivated and are used in garland making, social functions and in perfumery industry for extraction of essential oil. The major Indian states growing tuberose are Karnataka, Tamil Nadu, Andhra Pradesh, Maharashtra and Gujarat. In Tamil Nadu Dharmapuri, Krishnagiri, Tiruvannamalai, Salem, Namakkal, Trichy and Madurai are the leading districts taking up tuberose cultivation. Mostly local varieties are cultivated by the farmers of Dharmapuri district. Productivity was lesser due to low yielding local varieties and lack of practice of integrated crop management (ICM). As the yield decline and newer pest problems forced the farmers to search for the alternative varieties even though the crop is remunerative. Hybrids have been introduced by IIHR, Bengaluru, NBRI, Lucknow and various other Agricultural Institutes.

Characteristics of Prajwal

- Released by Indian Institute of Horticulture research, Bengaluru
- Hybrid of Shringar x Mexican single
- White single flowers
- Long stiff spike (95 cm, 50 florets per spike)
- The individual flowers are larger in size compared to local single
- Yield potential - 20 tonnes/ha/year

Intervention of KVK

A front line demonstration has been taken up by the Krishi Vigyan Kendra, Papparapatty, Dharmapuri district the farmers as the farmers were not aware of those hybrids. In ten farmers field of the villages viz. *Kariappanalli, Palavadi, Makkanur, Paisuhalli and Kanapatti* of Dharmapuri district, demonstrations were taken up Before conducting the front line demonstrations, training was given to the beneficiaries for imparting Integrated Crop

Management practices in fields were FLD is taken up. The ICM practices viz., basal application of farm yard manure and phosphorus, spacing of 60 x 30 cm, bulb treatment with *Pseudomonas fluorescens* – 10g /l, application of recommended dose of fertilizers NPK– 200:200:200kg/ ha, application of neem cake 250 kg/ha for nematode management and integrated pest management for mealy bug.

Impact of the IIHR hybrid, Prajwal

There was a significant increase in the yield of the Prajwal compared to that of the local variety. The yield per month per hectare was 1522 kilograms which was 173.7 per cent higher than the local variety (556 kg / ha). The yield potential of the hybrid is significantly higher compared to the local variety which was synergized by the integrated crop management practices such as bulb treatment with *Pseudomonas fluorescens* 10 g/L, application of recommended dose of fertilizers based on the soil testing results, need based micronutrient application and integrated plant protection measures. On an average the difference ranged from 50 to 150 per cent (Fig. I) during different months of a year. In the precision farming system the adaption of raised bed planting, drip irrigation and fertigation enhanced the yield by 55 per cent on an average.

The individual flower weight was significantly higher in Prajwal than the local variety as indicated by the number of flowers per kilogram. When used for loose flowers especially garland making, higher individual flower weight will not be preferred by the merchants. Even then the Prajwal flowers fetch higher price per kilogram compared to the local varieties because of its quality *ie.* fragrance and appearance. Though there is daily price fluctuation, it fetched an average of Rs. 32 per kg which was 14.3 per cent higher than the average market price of the flowers of local variety. Also when it was marketed to Bengaluru flower market for concrete extraction, Prajwal flower fetch higher price per kilogram which resulted in higher net returns to the farmers. At present, the area at present under Prajwal in Dharmapuri district is nearly 90 per cent of the total area under tuberose.

Table I. Comparison of the yield and economic parameters of the FLD with check plots

Parameters	Demonstration (Prajwal and ICM)	Check (Local variety and farmers practice)	Percent increase
No. of flowers per kg	773	1182	(-) 34.60
Flower Yield (kg/month/ha)	1522	556	173.70
Flower Yield (t/year/ha)	18.3	6.7	173.70
Average cost per Kg	32	28	14.30
Net returns (Rs/ha)	584000	186000	212.80
BCR	4.2	3.1	38.10

Table II. Impact of the front line demonstrations on flower yield and economic returns of the participatory farmers

Village	Pre-demonstration (kg/ha)	Demonstration (kg/ha)	Post-demonstration (kg/ha)	Average increase over pre-demonstration stage (kg/ha)	Additional monetary gain (Lakh Rs./ha)
Kariappanalli	7.60	22.05	20.40	168.42	492800
Palavadi	8.00	22.50	23.75	196.87	496000
Makkanur	5.25	14.25	13.30	153.33	309000
Paisuhalli	5.00	14.60	16.50	230.00	327200
Kanapatti	7.50	19.20	22.50	200.00	404400



