

### **Crop diversification: Promotion of Drumstick in Solapur district**

The history of Agriculture in Solapur reveals that famine is of common occurrence from ages due to inadequate and ill distributed rains. Partial and complete failure of both Kharif & Rabi crops result in famine. And as such Solapur district was identified as one of the 72 districts in India as drought prone area. The majority soils of the district are medium deep to shallow. Under such condition farmers are unable to cultivate the vegetables crop in less water & least investment. That is common feature of the whole district.

By considering the problems of the vegetable growers the Krishi Vigyan Kendra introduced the drought tolerant & high yielding variety of Drumstick (PKM-2). During 2000-2001 under the agro-climatic situation of Solapur district KVK introduced PKM-2 variety which is drought tolerant and high yielding under rain fed farming situation. Conducted demonstrations on PKM-2 variety in very light soil (10-20 cms depth), on 8 x 8 ft. spacing (row to row and plant to plant) under very less irrigation water on farmers field as well as KVK instructional farm as against the recommended spacing of 15-16 feet. The FLD beneficiaries secured average 125 & 195 pods per plant in first (6 months after transplanting) and second (10-12 months after transplanting) bearing in least investment. The water used for irrigation was very less quantity (1-22 liters/plant). The farmers used all preventive & curative measures for conservation of soil moisture. The farmers secured Rs. 71,500/ha as net income from 2 bearing of demonstration plot. For high density (8 x 8 ft.) planting, KVK developed training and pruning techniques; so as to maintain the ideal distance between plants in every bahar and plant should produce maximum number of pods from less area. The KVK also promoted the technologies like training and pruning, use of growth hormones for inducing the flowering, micro irrigation and plant protection measures through training and massive extension activities. During the year 2011-12 the KVK also introduced recent variety KDM-01 (Bhagya) which is released by UHS, Bagalkot (KA). The variety has been promoted through FLDs in KVK operational area. The seed production of KDM-01 was taken on KVK instructional farm and supplied to the farmers of Solapur as well as adjoining districts and five KVKs of Maharashtra. This practice was popularizing by KVK through demonstrations, exhibitions, training, exposure visits, personal contact etc. During the year 2013-14 KVK had produced seed of KDM-01 variety at KVK farm and supplied to 5 KVKs of Maharashtra and 74 farmers from different districts. Also KVK has made availability of pure seed at minimum price at head quarters level. At present in Solapur district the area under Drumstick by using the innovative methodology developed by KVK is near about 135-160 ha and more than 450 farmers were getting the promising yield under adverse climatic condition also by using the area specific and refined technology developed by KVK, Solapur. Farmers were earning additional income of Rs. 30,226/- per acre over traditional practice with 3.06 % B.C ratio.



**A view of Demo plot on farmers field**



**Seed production plot at KVK farm**



**Organized Field Days for education of non FLD farmers-FLD plot at Surdi, Tal: Barshi**



**Strong field advisories for guiding the farmers regarding production technology of drumstick at Panmangrul village of Akkalkot tahsil.**

**The details of the performance of KDM-01 on farmers field during 2013-14 at Kalman village of North Solapur tahsil of Solapur district.**

Parameters of assessment	Data on the parameter		Results of Assessment	Feedback from the farmer
	T1	T2		
1. No. of pods/plant/season	122.33	153	30.67 more average number of pods per plant/season	The variety KDM-01 is suited than unidentified local variety in villages produced 19.45% more yield than local
2. Percent incidence of powdery mildew & leaf caterpillars	10-15 %	7-10 %	3-5% less . % incidence of powdery mildew & leaf caterpillars	The KDM-01 is suited for our condition. It produces longer pods than our local as getting good market prices.

Parameters of assessment	Data on the parameter	Results of Assessment	Feedback from the farmer	Parameters of assessment
	<b>T1</b>	<b>T2</b>		
3. Length of pod (cm).	33.3	45.56	10.26 cm more longer pods than local	It has better pulp than local, very vigorous growth and self pruning quality produce 150 to 170 pods per tree/season.
4. Yield (Kg/ha)	19980	21925	19.45% more yield than local	
4. B: C ratio	2.57	3.06	0.49 more B: C ratio than local.	

Technology assessed	Production per unit kg/ha.	Net Return (profit) in Rs./Unit	BC Ratio
<b>T1</b> – Farmers practice: Use of Local variety of Drumstick	19980	2,20,150	2.57
<b>T2</b> - Technology assessed: Sowing Use of KDM-01(Bhagya) variety of Drumstick.	21925	2,95,690	3.06