



Research Paper

Assessment of yield and economic of hybrid marigold through farmers participatory approach

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ABSTRACT : Marigold (*Tagetes erecta* Linn.) has earned tremendous popularity as floral crop in Madhya Pradesh particularly at Indore district, where it is being commercially cultivated as loose flower at around 2300 hac. 97 per cent (2231 hac) area covered under African type cultivar which was grown almost around the year in Indore district. Market price always remains high for those cultivars having uniform size, shape and early flowering nature. Consequently hybrid marigold varieties were tried as intervention for enhancing the yield and economic return at real farming situation. 16 on-form demonstrations were conducted during the period 2014 and 2015 at village Lodiya and Uteriya of Indore district in Madhya Pradesh. 20.80 per cent flower yield enhancement was recorded with hybrid variety over farmer's practice (Local variety). Average additional income of Rs. 45,568.00 can be attributed by adopting hybrid marigold variety over local variety. Higher cost of cultivation under recommended practice was attributable to higher seed cost of hybrid cultivar. On mean basis cost benefit ratio was 2.16 for recommended practice, whereas 1.16 for farmer's practice. Thus, favourable cost benefit ratio and higher net returns proved the economic viability of the intervention made under recommended practice.

KEY WORDS : Marigold, Hybrid, Yield, Economics

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INTRODUCTION :

Marigold (*Tagetes erecta* Linn.) becomes one of the most popular flower in our country on account of its easy culture, wider adaptability and lucrative returns. Its habit of free flowering, short duration and wide range of colours, shape, size and good keeping quality attracted the attention of flower growers. Marigold has earned tremendous popularity as floral crop in Madhya Pradesh particularly at Indore district where it is being commercially cultivated as loose flower at around 2300 hectare (Anonymous, 2016) in open field condition. Out

of two important cultivated marigolds type *i.e.* African (*Tagetes erecta*. Linn) and French (*Tagetes patula*. Linn), 97 per cent (2231 hac) area covered under African type cultivar which was grown almost around the year in Indore district. The major growing season for marigold cultivation was July to December for fetching festival market during Ganpati puja, Navratri and Deepawali. It is being grown predominantly as loose flower for making garland and religious offerings. Market price always fetches high for those cultivar having uniform size and shape. Farmers are growing local cultivars namely Sattiya and Aranga during June to December. On account of

uneven size, shape, colour and lower flower yield from local cultivar of marigold, farmers were unable to fetch lucrative returns from their produce. Consequently field trial of hybrid marigold along with local variety was tried with the objectives to address the problem of low yield; delayed flowering with poor quality of flower leading to lower economic return.

MATERIALS AND METHODS :

To improve the yield and income level from marigold crop, the technology dissemination programme was carried out under real farming situation consecutively for the years 2014 and 2015 at village Lodiya and Uteriya of Indore district in Madhya Pradesh. During the period 16 on farm demonstration were conducted and the area under each plot was 0.4 ha (1 acre). The imparted technological intervention was based on the information gathered through surveys, farmers meeting and field diagnostic visits during the cropping period, which brought out that the local variety, were the reason for low yield, uneven size, shape and colour and delayed flowering in marigold. The technologies of Hybrid marigold cultivar (Marino orange from Pyramid) was used as technical intervention during the course of on farm demonstration. Local check (control) was comprised of existing farmer's practice of growing local cultivar. All packages and practices were followed in the same way for both Hybrid variety (Recommended practice) and Local variety (Farmer practice). The yield and economic performance of both farmer's practice (FP) and recommended practice (RP) were recorded. Well before the conducting of experimental demonstration, training to the farmers of respective villages was imparted with respect to envisaged technological intervention. Other steps like selection of experimental site, layout and farmers' participations were followed as suggested by Choudhary *et al.* (1999). Plot-wise yield data was recorded from demonstration and farmer's plots. Information of cost of

cultivation was also recorded for economic evaluation in terms of net profit earned and the benefit cost ratio.

RESULTS AND DATA ANALYSIS :

The data (Table 1) revealed that under recommended practice (Hybrid variety), the flower yield was found to be substantially higher than that under farmer's practice during all the years of study. The flower yield enhancement over farmer's practice, although varied (22.57 to 19.02 %) from year to year, it was 20.80 per cent on mean basis. The year to year fluctuations in yield and cost of cultivation can be explained on the basis of variations in prevailing social, economical and microclimatic conditions at that particular village. (Mukharjee, 2003) as also opined that depending on identification and use of farming situation, specific interventions may have greater implications in enhancing system productivity. It is generally agreed that there is certain increase in yield which is possible with the establishment of improved variety of marigold. (Narsude *et al.*, 2010). Yield enhancement in different crops through technology dissemination has amply been documented by Haque (2000); Tiwari and Saxena (2001); Tiwari *et al.* (2003) and Mishra *et al.* (2009).

Economic evaluation in terms of gross expenditure, gross returns; net returns and BC ratio clearly revealed that the net returns from the recommended practice were substantially higher than control *i.e.* farmers practice during all the years of technology dissemination programme. An average net return from recommended practice were observed to be Rs. 1,04,318.00 in comparison Rs. 58,720.00 to farmer's practice with an average additional income of Rs. 45,568.00 and can be attributed to the technological intervention (Hybrid cultivar) provided in demonstration plots. The cost of cultivation under recommended practice was recorded Rs. 99,083.00 while it was Rs. 67,430.00 under farmers practice. Higher cost of cultivation under recommended

Table 1 : Yield and economic of marigold under real farming situation (2014 and 15)

Year	No. of trial	Yield (q/ha)		% increase in yield	Cost of cultivation (Rs./ha)		Gross returns (Rs./ha)		Net returns (Rs./ha)		B:C ratio	
		RP	FP		RP	FP	RP	FP	RP	FP	RP	FP
2014	6	116.5	95	22.57	79325	52000	209700	123500	130375	71500	2.65	2.37
2015	10	109.5	92	19.02	118840	82860	197100	128800	78260	45940	1.66	1.55
Mean		113	93.5	20.80	99082.5	67430	203400	126150	104318	58720	2.16	1.96

RP – Recommended practice, FP –Farmer's practice, B: C Ratio –Benefit cost ratio

practice was attributable to higher seed cost of hybrid marigold variety. The benefit cost ratio of recommended practice was also substantially higher than farmer's practice. It worked out to 2.65 and 1.66 for recommended practice as compared to 2.37 and 1.55 for farmer's practice during 2014 and 2015, respectively. On mean basis it was 2.16 for recommended practice, whereas 1.16 for farmer's practice. Thus, favourable cost benefit ratio and higher net returns proved the economic viability of the intervention made under recommended practice and convinced the farmers on the utility of intervention technology provided at real farming situation. Similar findings were reported by Sharma (2003) and Mishra *et al.* (2009) in different crops. The data further revealed that maximum increase in yield and cost benefit ratio observed was during 2014, The variation in yield and cost benefit ratio during different years may mainly be on account of yield performance and input output cost in that particular year. Cost of harvesting also worked out higher with enhanced yield and adds to cost of cultivation in case of recommended practice.

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