J Krishi Vigyan 2020, 9 (1) : 358-360 DOI : 10.5958/2349-4433.2020.00192.0

Short Communication

Impact of Frontline Demonstration on Yield Enhancement of Turmeric in Darrang District of Assam

Rinku Moni Phukon[1] and Pabitra Kumar Bordoloi[2]

Horticultural Research Station
Assam Agricultural University, Kahikuchi, Assam , India 781017

ABSTRACT

Krishi Vigyan Kendra , Darrang conducted thirty four demonstrations during 2015-16 to 2017-18 in different villages of Darrang district of Assam to disseminate the production technology of high yielding (243.6q/ha) Turmeric variety Megha Turmeric 1 having high curcumin content (6.8%). The critical inputs were identified in existing production technology through meetings and discussions with farmers. Lack of knowledge on high yielding varieties, uneven plant population, uncontrolled weeds, ignorance about fertilizers and lack of plant protection measures were the predominant identified causes of low productivity of turmeric crop in Darrang district. Farmers training were conducted to ensure rhizome treatment, application of balanced fertilizer, irrigation and timely plant protection measures. These activities ensured higher yield over local practices in the range of 11.1 to 12.9 per cent. An average net profit of Rs 909025/- was recorded under recommended practice while it was Rs 649050/- under farmers' practice. Benefit/cost ratio ranged from 5.59 to 7.3 under demonstration while it ranged between 4.76 to 6.1 under control plots. The results clearly indicate the positive effects of FLDs over existing local practices.

Key Words: Front line demonstration; Megha turmeric-1; yield; Benefit/cost ratio.

INTRODUCTION

Turmeric (Curcuma longa L.) is known as the king of spices grown by the farmers of Assam in their baris (homestead garden). The crop has the potentiality to increase the farmer's income. As the farmers grow this crop in traditional system in their baris applying only FYM at planting time and no other nutrient application strategies are followed hence, these factors lead to low productivity. Lack of knowledge of quality planting material is another important factor attributing to low productivity in this region. The variety Megha Turmeric-1 was developed from ICAR (Research Complex) for NEH Region, Umiam, Meghalaya through clonal selection also adaptable in Assam condition having tolerant to leaf blotch and leaf spot with crop duration of 300-315 and average yield potential of 268 q/ha. The variety contains 16.37 per cent dry matter, 6.8 per cent curcumin and 5.5 per cent essential oil. It is highly tolerant to leaf spot (Colletotrichum capsici) and leaf blotch (Taphrina maculans) disease (Chandra et al, 2005). Therefore, there is an ample scope for increase the productivity of turmeric. Manan et al (2019) indicated that in order to maximize the rhizome yield of turmeric, farmers must apply 25 per cent more quantity of phosphatic fertilizer than the recommendation along with use of mulching material @ 6 t/ha in sandy soils having low level of NPK. KVKs are playing vital role across the rural economy in

Corresponding Author's Email:rinkumoniphukon@gmail.com

1Junior Scientist,

2Principal Scientist, Regional Agricultural Research Station, Assam Agricultural University, Shillongani, Assam, India 782002

Table 1: Yield performance and economic indicators of frontline demonstration of turmeric var. Megha turmeric1.

Year	Demo.	Avg. yield (q/ha)		% increase over FP	Gross expenditure (Rs/ha)		Gross return (Rs/ha)		Net return (Rs/ha)		B:C Ratio	
		Demo.	FP		Demo.	FP	Demo.	FP	Demo	FP	Demo.	FP
2015-16	14	245.0	220.5	11.1	178995/-	149789/-	1220070/-	853800/-	1041075/-	704011/-	6.8	5.7
2016-17	10	250.0	221.5	12.9	175342/-	145246/-	1280000/-	886000/-	1104657/-	740754/-	7.3	6.10
2017-18	10	236.0	212.0	11.3	126655/-	133613/-	708000/-	636000/-	581345/-	502387/-	5.59	4.76
Average	11.3	243.6	217.8	11.7	169330/-	142882/-	1069356/-	791933/-	909025/-	649050/-	6.5	5.52

distinguish field as horticulture, agronomy, plant protection etc. KVK, Darrang has done intensive training about scientific cultivation, demonstration on new variety and other interventions. The present study was conducted with an aim to disseminate recommended technology to farmer's field through frontline demonstration on turmeric crop in the operational area of the KVK.

MATERIALS AND METHODS

Krishi Vigyan Kendra (KVK), Darrang conducted 34 number of front line demonstrations on Turmeric crop at farmer's field in different villages of Darrang district during 2015-16 to 2017-18. For conducting FLDs, selection of farmers, layout of demonstration, farmers' participation etc. were followed as suggested by Choudhary (1999). The required inputs were supplied and regular visits to the demonstration fields by the KVK scientists ensured with proper guidance to the farmers. The recommended practices included treatment of rhizomes with Ridomil (2.5 g/l) for 40 min before sowing as prophylactic measure for rhizome rot disease. Application of FYM @ 20t , N:P:K @ 30:50:60 kg/ha, intercultural operations and application of 1% Bordeaux mixture at 15 days interval against leaf spot disease.Field days and group meetings were also conducted to provide the opportunities for other farmers of the same village as well as neighboring villages witness the benefits of demonstrated technologies. The data output were collected from both FLD plots as well as control plots and cost of cultivation, net income and benefit cost ratio were also worked out (Samui et al, 2000)

RESULTS AND DISCUSSION

The data (Table 1) showed that the performance of turmeric var. Megha Turmeric 1 was found to be substantially higher under the demonstration plots than under control during all the demonstration years .The yield under demonstrations was 245, 250 and 236 q/ha during 2015-16, 2016-17 & 2017-18, respectively however under farmer's practices the average yield were 220.5, 221.5 and 212 q/ha during respective years. However the percent increase against local yields were 11.1, 12.9 and 11.3 during 2015-16, 2016-17 & 2017-18, respectively . Chandra et al (2005) have shown similar trend of results in Megha Turmeric 1. The results clearly indicated the positive effect of FLDs over the existing practices toward enhancing the yield of turmeric in the study area due to use of high yielding variety, timely planting, balance doses of fertilizer, plant protection measures etc. The year to year fluctuations in yield and cost of cultivation can be explained based on variations in microclimatic conditions and price of the local market. The study also revealed that benefit/cost ratio in demonstration plots was comparatively higher than control. The highest B: C ratio was observed in demonstration plot (7.3) against control plot (6.1) in the year 2016-17. This might be due to variation of price during the study years. The farmers have also satisfied with the colour of the turmeric powder.

CONCLUSION

It was concluded that FLDs on improved variety of turmeric coupled with other practices and need based plant protection measures significantly increased the yield. Higher net return and benefit cost ratio were noticed in demonstration plots compared to farmer's practice. The technology is suitable for enhancing the productivity of turmeric crop and expansion of area under this crop. The use of new production technologies will substantially augment the income as well as the livelihood of local population.

REFERENCES

Arunkumar P, Smitha G B, Hanumanthaswamy B, Rekha M V and Nagaraja R (2018). Impact of frontline demonstration on french bean variety Arka Sharath. *Int J Pure App Biosci* **6**(4) : 324-327

Baruah U and Tripathy A.K (2015). Impact of frontline demonstration on yield enhancement of turmeric. *Int J Farm Sci* **4**(4) : 235-239

Chandra R, Yadav D S, Rai N and Sarma P (2005). Megha Turmeric 1: A new turmeric for Meghalaya. *Indian Hort* **50**(2): 18.

Choudhary BN (1999). *Krishi Vigyan Kendra - a guide for KVK managers* . Publication Division of Agricultural Extension, ICAR, pp 73-78

Jha A K and Deka Bidyut C (2010) . *Present status and prospects of ginger and turmeric in NE states*. ICAR Research Complex for NEH Region, Umiam-793103, Meghalaya

Manan Jatinder , Sharma M and Kaur Amandeep (2019). Outcome of mulching and phosphatic fertilizer on germination and yield of turmeric. *J Krishi Vigyan* **7** (2) : 273-275

Rajput S ,Rajput A S , Verma S K and Jain V(2016) . Impact of Frontline demonstration on okra (Abelmoschus esculentus L.). *J Krishi Vigyan* **5**(1) : 74-76

Samui S K , Mitra S, Roy DK , Mandal A K and Saha D (2000) . Evaluation of front line demonstration on groundnut. *J Indian Soc Coastal Agric Res* **18**: 180-183

Received on 22/08/2020 *Accepted on 04/11/2020*