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SELF HELP GROUPS BOOST TURMERIC PRODUCTION IN MEGHALAYA —A SUCCESS STORY

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ABSTRACT: Front line demonstrations (FLD) on high yielding turmeric cv. Megha Turmeric-1 were conducted at Ri-Bhoi district of Meghalaya under farmer's participatory mode during year 2011-12. A total of eleven SHGs from nine villages involving 122 farmers were participated in demonstration covering the total area about 7.5 ha area. From the FLD,1152.29 q of fresh turmeric was produced from a 7.5 ha area with productivity of 156.31 q/ha. The attractive gross return (Rs. 234460 Rs/ha) and net returns (Rs. 141604/ha) with higher B:C ratio (2.52) were recorded by the SHGs with adoption of scientific management practices. Production of turmeric through farmer's participatory mode with technological intervention (Megha Turmeric-1) not only increased the production of turmeric but also generated employment and developed entrepreneurship among tribal farmers.

Keywords: *Turmeric, yield, FLD, SHGs, net return.*

In Meghalaya more than 80% farmers are directly or indirectly dependent upon agriculture. The agro ecological condition of the state provides immense opportunity for the commercial exploitation of the horticultural crops. Among the horticultural crops in Meghalaya state, spices found integral place in the socio-economic life of the tribal farmers and recorded an area of 16.82 thousand hectare with the production and productivity of 74.81 thousand tones and 4.44 tones/ha, respectively during 2011-12 (Anon, 1). Among the spices, turmeric (*Curcuma longa* L.) is an important crop cultivated by the farmers in the state having market potential (Singh, 4). Among spices, turmerics share about 11.54% in area and 13.34% in production (Anon, 1). Turmeric is extensively used as stimulant, blood purifier, tonic, as carminative and remedy against the skin diseases, pain and anthelmintic (Sirmal, 5). The Lakadong variety of turmeric is indigenous to the state, but this variety has low yield potential coupled with susceptible to leaf spot and leaf blotch limits its further expansion. A new variety Megha Turmeric-1 is a promising turmeric cultivar developed by the ICAR Research Complex of NEH Region, Meghalaya through clonal selection form Lakadong.This variety is suitable for mid hills condition, takes 300 to 315 days to crop maturity. The average yield of rhizome per clump is 350-425 g with yield potential of 270q/ha. Further it contained 16.37% dry matter, 6.8% curcumin and 5.5% essential oil and is highly tolerant to leaf spot and leaf blotch (Yadav *et al*., 6).

During last decade the demand of turmeric (fresh & dry) from the state were increased substantially. But availability of quality seed material was one of the important bottlenecks in expansion of area, which ultimately hamper production and productivity. So that, increase in availability of quality planting material (Megha Turmeric-1) is need of hour for tapping the available potential in turmeric trade. Production of turmeric through farmer's participatory mode is way ahead to fulfil the fast growing demand for turmeric from various stake holders. This will create employment opportunity and helps in development of entrepreneurship in tribal farmers.

MATERIALS AND METHODS

With intensive survey and village level meetings with farmers, the interested farmers groups (SHGs) were identified for turmeric

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cultivation at Ri-Bhoi district of Meghalaya during 2011-12.The details about scientific turmeric cultivation practices, its importance and potential of the selected area were discussed with Self Help Groups (SHGs). Hands on trainings were organized for the selected SHGs along with the exposure visit to research farm.Total eleven SHGs involving 122 farmers of nine villages were selected for front line demonstration of Megha Turmeric-1 variety. The total 135 q seed material @ 18 q/ha were distributed to SHGs for turmeric cultivation on 7.5 ha area. The details of the SHGs involved and their village and area covered is depicted in Table 1.

Table 1: List of SHGs involved in the turmeric cultivation.

Name of SHGs	Name of Village	Area (ha)
Demkhtop SHG	Mawteng,	1
Iaiminot SHG	Rtiang (Umsning)	1
Honey Dew Multipurpose Cooperative society	UmroiNongrah	1
Roilang Farmers' Club	Umjarasi, Nongpoh	1
Pynroilang SHG	Liarbang	0.5
SymbohBarit SHG	Liarbang	0.5
Kyntiewlang SHG	Rongsikong, Nongpoh	0.5
Chriatian Hope Ministry Society	Sohriewblei	0.5
Imlang SHG	Umshit, Nongpoh	0.5
Tiki&Chinthur SHG	Belkuri, Nongpoh	0.5
Melur SHG III	Belkuri, Nongpoh	0.5
	Total	7.5

Scientific management practices for turmeric recommended by Yadav *et al.* (6) were followed. The land was ploughed 4-5 times to bring the soil into fine tilth and the raised beds of about 15 cm height were made. The turmeric rhizomes were planted in the raised bed at a spacing of 30cm x 30cm during April-May. The FYM 20 t/ha was applied at the time of field preparation followed by N:P:K @ 120: 90:90 Kg/ha. The 1/3 nitrogen and full doses of phosphorus and potassium were applied at the time of planting and 1/3 quantity of nitrogen was applied at 45 days after planting and remaining 1/3 of nitrogen at 90-95 days after planting. The first weeding was done in June followed by subsequent hoeing and earthing up from July to September at fortnightly intervals. Mulching was done with locally available materials like green leaves, dry grasses and paddy straw. The crop was ready for harvesting after 8-9 month of planting (Dec-Jan). The cultivation practices followed are depicted in Plate 1-6. Observation on fresh turmeric yield (q) and productivity (q/ha) were recorded at all selected locations. The cost of cultivation of different inputs viz., planting material, FYM, fertilizers, agro chemicals and labour incurred by the SHGs were calculated. Similarly, gross return, net return and B:C ratio were calculated on the basis of fresh turmeric yield @ Rs. 15/.The mean values were presented as per statistical procedure given by Panse and Sukhatme (3).

RESULTS AND DISCUSSION

A total 1152.29q of fresh turmeric (Table 2) were produced from 7.5 ha area with a productivity of 156.31q/ha by SHGs under participatory mode. Among the SHGs highest productivity was recorded by Imlang SHG (180.24 q/ha) followed by Pynroilang SHG (179.62 q/ha) and Demkhtop SHG (177.05 q/ha), while lowest productivity was recorded by Honey Dew Multipurpose Cooperative Society (126.50 q/ha). The variation in results may

Table 2: Turmeric yield realization by the different SHGs.

Name of SHGs	Area (ha)	Fresh yield (q)	Productivity (q/ha)
Demkhtop SHG	1	177.05	177.05
Iaiminot SHG	1	141.5	141.50
HoneyDew MultipurposeCooperative society	1	126.5	126.50
Roilang Farmers' Club	1	140.16	140.16
Pynroilang SHG	0.5	89.81	179.62
SymbohBarit SHG VII	0.5	78.29	156.58
Kyntiewlang SHG	0.5	71.45	142.90
Chriatian Hope Ministry Society	0.5	80.12	160.24
Imlang SHG	0.5	90.12	180.24
Tiki&Chinthur SHG	0.5	82.15	164.30
Melur SHG III	0.5	75.14	150.28
Total/Mean	7.5	1152.29	156.31

be due to prevailing agro-climatic condition of the location and adoption of recommended scientific management practices by the SHGs. These results are in line with Kumar (2).

The results depicted in Table 3 showed that the mean average cost of turmeric cultivation per ha was Rs. 92,856 ha with gross and net return of Rs. 234460 ha and Rs. 141604 ha, respectively. The higher B:C ratio (2.52) was also recorded.The result (Table 3) showed the variation in performance of selected SHGs. Among the SHGs, highest gross return (Rs. 270360 ha), net return (Rs. 176800 ha) and B:C ratio (2.89) was recorded by Imlang SHG followed by Pynroilang SHG (Rs. 269430 ha, Rs. 174054 ha and 2.82, respectively) and Demkhtop SHG (Rs. 265575 ha, Rs. 170600 ha and 2.80, respectively).

The difference in monitory return among the selected SHGs may be due to varied agro-climatic condition prevailed in particular location and adoption of management practices on time by the SHGs. The technological intervention (Megha

Table 3: Returns earned by the SHGs through turmeric cultivation.

Name of SHGs	Cost of cultivation (Rs/ha)	Gross return (Rs/ha)	Net return (Rs/ha)	B:C ratio
Demkhtop SHG	94975	265575	170600	2.80
Iaiminot SHG	79700	212250	132550	2.66
Honey Dew MultipurposeCooperative society	83453	189750	106297	2.27
Roilang Farmers' Club	89875	210240	120365	2.34
Pynroilang SHG	95376	269430	174054	2.82
SymbohBarit SHG VII	105694	234870	129176	2.22
Kyntiewlang SHG	81340	214350	133010	2.64
Chriatian Hope Ministry Society	112220	240360	128140	2.14
Imlang SHG	93560	270360	176800	2.89
Tiki & Chinthur SHG	91880	246450	154570	2.68
Melur SHG III	93340	225420	132080	2.42
Mean	92856	234460	141604	2.52

Plate 1: Land preparation by SHGs in supervision of scientist.

Plate 2: Planting of Megha Turmeric-1.

Plate 3: Healthy turmeric crop.

Plate 4: Harvesting of turmeric.

Plate 5: Collection of turmeric rhizomes.

Plate 6: Turmeric sold by SHGs.

Turmeric-1 and scientific management practices) helped to achieve higher returns to SHGs. With this success, several farmers from the nearby villages are coming forward for turmeric cultivation. Around 30 ha area was brought under cultivation during 2012-13 and more than 5 times increase in area was seen within one year. Production of turmeric through participatory mode increased the availability of planting material to SHGs for next year planting.It helped in reduction in the cost incurred on purchase of planting material and ultimately reduced the cost of cultivation. Due to this turmeric cultivation is now become a regular profitable enterprise for the SHGs along with other income generation enterprises (e.g. piggery, poultry).

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