

Popularization of Onion Cultivation in Meghalaya Through Adoption of Good Agricultural Practice-A Success Story

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Onion is an important commercial crop which can improve livelihood of farmers. But in Meghalaya the cultivation of this crop is limited to the kitchen garden mostly to meet the domestic household needs. The tribal farmers of this region grow onion crop following the traditional method of production leading to low- and poor-quality yield. As onion is photosensitive crop the knowledge of choosing the right variety for cultivation is one of the key factor for successful cultivation, which the farmers of this region are unaware. So, with the objective to popularize onion cultivation amongst the farmers through scientific intervention ICAR RC for NEH Region, Umiam Meghalaya in collaboration with DOGR, Rajgurunagar, Pune initiated TSP (NEH component) on popularization of onion cultivation. Under the scheme, a group of 5 farmers (list attached) were selected from Sarikushi, Marngar, Ri-Bhoi district of Meghalaya. These selected farmers were distributed with onion seeds (variety Bhima Super), biofertilizers, irrigation can etc. to conduct demonstration trial at field.

Initiative

Various training programmes and demonstrations on good agricultural practices starting from right choice of the cultivars, nursery raising, interculture operations etc. were conducted under the scheme. These selected farmers along with other beneficiaries were provided training on scientific aspects of onion cultivation (selection of right variety, nursery raising, interculture operations, harvesting and post-harvest handling etc.) through a training cum awareness programme on 'Good Agricultural Practice of onion'. The selected farmers raised the seedlings during November, 2018 in raised nursery bed of 10-15 cm height, 1 m width and 4 m length. The seeds were treated with *Trichoderma viride* @ 4 g/kg before sowing. Seedlings of 40-45 days old were



Fig.1. (a) Nursery bed preparation (b) Healthy seedlings

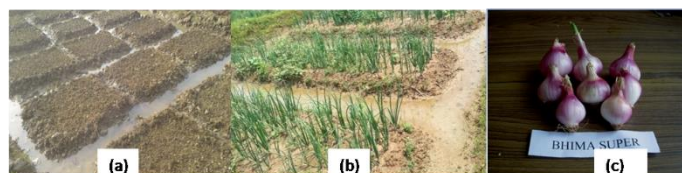


Fig.2. (a) Main field preparation (b) General view of crop (c) Var. Bhima Super

transplanted at a spacing of 15 × 10 cm (15 cm between the rows and 10 cm between plants). After uprooting of seedlings, 1/3rd part of leaves were advised to cut and the roots were washed with clean water. Irrigation at the time of transplanting and three days after transplanting were done for good establishment. For the main bed preparation, the farmers were advice to apply FYM @ 6 t per ha at the time of last ploughing. Biofertilizers @ 5 kg/ha each Azospirillum and phosphorus solubilizing bacteria were also recommended. Time to time hand weeding and other interculture operations were also advice to the farmers. The crops were harvested when it attains 50% neck fall.

Result

Through this intervention the beneficiaries observed 100 per cent seed germination and were able to maintain good plant population in the nursery. The farmers used to raise the seedlings through traditional method where the seeds are sown in a mixture of wet mud and cow dung over a thatch like structure resulting to low germination and high mortality. The beneficiaries expressed that the seedlings raised through the scientific intervention was very vigorous and field survival per cent after transplanting was appreciable. The farmers recorded an average yield of 330 Q/ha; average bulb weight of 60g; bulb length



Fig.3: Input distribution



Fig.4: Training cum awareness programme

212.05mm; bulb diameter 212.14mm; no of leaves 7.6 and plant height 52.33 cm. With reference to the result of the field demonstration trial a training manual on 'Production Technology of Onion and Garlic' was published by Director, ICAR Research Complex for NEH Region in collaboration with ICAR-Directorate of Onion and Garlic Research, Rajgurunagar, Pune.

The selected group of farmers has earned a net income of Rs. 40,000-50,000 per acre by production of about 100 q bulbs of onion (Bhima Shakti)

during *rabi* season. The farmer group expressed happiness that through the selection of right variety and improved method of cultivation they were able to make a good profit with double the income. They also expressed that this variety (Bhima Shakti) withstand heavy downpour and extended monsoon period that is prevailing in the state of Meghalaya very well as compared to the local variety they were cultivating.

Conclusion

Through this study we can conclude that onion cultivation can promise high net return provided the farmers are getting quality seeds of right variety and with proper scientific way of cultivation. There is potential scope for increasing the area under onion cultivation in the State. The major challenges are marketing knowledge and storage problems faced by the onion growers of the state. During the study it is depicted that considerable percentage of the onion growers in the State belongs to marginal group and have less marketing knowledge and storage infrastructure. Fluctuation in market price, high cost of transportation and absence of storage facilities are the major challenges. Establishment of proper storage infrastructure and providing knowledge on post-harvest handling and marketing are the key suggestions to overcome these challenges.

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