

Success Story

Tribal Sub Plan

(2013-2016)

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Citation:

S. Hazarika, S. K. Das and S. V. Ngachan.2017. Success Story Tribal Sub Plan (2013-2016).
Published by the ICAR Research Complex for NEH Region, Umiam, Meghalaya-793103.p70

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Meghalaya-793 103, India

Year of Publication: 2017

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Published by:

Director
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Umiam, Barapani.Meghalaya-793 103, India

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Off season cultivation of vegetable crops improves livelihood of tribal farmers of Sikkim

In Sikkim, about 78,000 ha area has been registered with APEDA, GOI under organic certification. The market for organic vegetables in Sikkim is expanding. However, high intensity rainfall with a prolonged wet season during *Kharif* and severe winter during *Rabi* season have serious negative effect on vegetable yield and quality. Adoption of protected cultivation techniques with organic management not only increases productivity and income but also reduces the risks from extreme weather events. At ICAR-National Organic Farming Research Institute (formerly ICAR Research Complex for NEH Region, Sikkim Centre), the production technology of high value vegetables (broccoli, cauliflower, cabbage, coriander, fenugreek, spinach, beetroot, carrot and radish) under low cost plastic tunnel as well as low cost plastic rain shelters has been standardized for various vegetable cropping sequences. It was observed that under low cost plastic tunnels and rain shelters, vegetables can be grown successfully year round with significant increase in earliness along with higher production and productivity. The maximum B:C ratio (5.19) was observed in Broccoli-Spinach-Coriander-Broccoli-Coriander followed by Broccoli-Coriander-Cabbage-Radish-

Coriander (4.44) cropping sequence under low cost plastic tunnels. However, under low cost plastic rain shelters, maximum B:C ratio (3.68) was observed in Tomato-Tomato-Pea followed by Bitter gourd/Sponge Gourd/Bottle Gourd-Tomato-Pea (3.14) cropping sequence. Low cost plastic tunnels and rain shelters enabled vegetable growers to realize greater returns per unit of land and offer other benefits, like off season vegetable production, early harvest, longer harvest duration, reduced leaching of fertilizer nutrients and eco-friendly management of pests, weeds and diseases under climate change scenario in mid hills of Sikkim. Vegetables are quick cash crop and can yield maximum production and productivity, if cultivated scientifically. Majority of the farmers of Sikkim grow vegetables in traditional manner due to lack of awareness on the recent technological development in cultivation of vegetable crops. Hence, to improve the production and productivity of organic vegetables under changing climatic scenario, the technology on off season organic vegetable production under low cost plastic tunnels and low cost plastic rain shelters developed by NOFRI, Sikkim has been disseminated by conducting various training and on farm demonstrations. This has created awareness among the farmers resulting horizontal



Mr. Gyalpo Tamang, a beneficiary from Chalamthang has successfully raised tomato and cherry pepper crops under plastic rain shelters during rainy season and earned more than Rs 50,000/-.

Theme II: Improvement of livelihood of tribal farmers through interventions in agricultural crops



Training and demonstration on low cost plastic tunnel in different districts of Sikkim



Training and distribution of inputs under TSP for promotion of off season cultivation of vegetables under plastic tunnel

expansion of the technology for cultivation of offseason vegetables in different parts of Sikkim.

Cole crops viz., cabbage, cauliflower, broccoli; root vegetables viz., radish, carrot, beetroot and leafy vegetables viz., spinach, fenugreek and coriander were successfully cultivated at farmers' field under low cost plastic tunnels covering about 500 farmers in all the four districts of Sikkim. The maximum B:C ratio 4.91 was observed in Broccoli-

Spinach-Coriander-Broccoli-Coriander at farmers field. Off season cultivation of tomato, capsicum, red cherry pepper, cucumber and various cucurbitaceous crops were also successfully cultivated at farmers' field under low cost plastic rain shelters covering about 100 farmers in all the four districts of Sikkim. The maximum B:C ratio 2.84 was observed in Tomato-Tomato-Pea at farmers field.

Contributor:

Ashish Yadav, H. Kalita, R. Gopi, R. K. Avasthe and Shaon K. Das, 2017. Off season cultivation of vegetable crop improves livelihood of tribal farmers of Sikkim. In *Success Story Tribal Sub Plan (2013-2016)*, Edited by S. Hazarika, S. K. Das & S. V. Ngachan.