

of external inputs, relying more on farm yard manure. They have been cultivating since 1997 and have identified disease free pockets for different vegetables in the valley. This has enabled them to minimize pesticide use. They market their produce in Delhi and Chandigarh earning an annual return to the tune of Rs. 35 lakhs (\$70000) from an area of 30 ha.

On the other hand, Lahaul and Spiti district, which was considered unsuitable for apple cultivation a decade ago, is now witnessing flourishing apple orchards. On an average, every year, 60000 apple saplings (enough to cover 120 hectares) are being planted in Lahaul valley. This is a new opportunity for farmers of this region due to rising temperature in the valley. The early-planted orchards are now in production stage. The quality of products is best in the market and almost entire produce is being exported. Lahaul has a distinction of using only night soil and FYM in the apple orchards.

Conclusion

Changing climate in North Western Himalayas have brought forth myriad new problems and new questions, the solutions to which will be generated by combining farmers' ingenuity, new technologies and several trial-and-error efforts. The farmers who tried new crops in early years with eventual success have presented

a nice example of quick and discretionary adaptation to changing scenarios. In fast globalizing world establishing backward-forward linkages did not prove a big challenge. On one hand, it may appear that global warming is posing a threat to establish systems. On the other, it has also brought us face-to-face with new opportunities. The innovative farmers of Kullu and Lahaul valley have shown the way by converting threat into opportunity, and beautifully so, with local resources and without use of costly inputs. Their response to this situation has been exemplary. Accepting change and getting in tune with nature is the key to survival and prosperity. ■

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Farmers Diary

Shanmukha M. Dyamakkanavar is a progressive chilli farmer following organic cultivation methods. His knowledge is based on experience inherited from his father and the technical support from various agencies promoting organic cultivation. Here is his experience of growing Byadagi Chillies, popular in his area using organic cultivation methods.

The land is ploughed by wooden plough immediately after the receipt of premonsoon showers and repeated harrowing is carried out to bring the soil to a fine tilth. This will encourage weed seeds to sprout and these can be destroyed by repeated harrowing. He applies around 4 to 6 tons/ha of well decomposed cattle manure produced on his farm. Also, he applies 250 kgs/ha of neem cake to control cut worms and root grubs and allows it to get wet by rain before transplanting.

Like all traditional 'Byadagi' chilli growers, he also selects seeds from healthy disease-free Chillies from his own farm. While selecting seeds he gives importance to characters like length and bright red colour of fruits. He treats seeds with Trichoderma @ 10 grams/1 kg seeds before sowing on raised beds in nursery. Just before transplanting he applies VAM inoculam @ 2 kgs/bed. Based on his experience, he says that these practices help in reducing the incidence of disease and improve growth and yield. Another noticeable practice followed by him is clipping and pruning of seedlings before transplanting. By this, he feels that the seedlings can withstand adverse weather conditions during transplanting and also induce uniform shape and growth of plants. Transplanting is usually done during the month of July. Spacing of 60 cm x 75 cm is followed. At the time of transplanting, vermicompost mixed with Azospirillum and Phosphobacteria @ 10 kgs/ha is applied which is repeated again after 30 days of planting.

After the plants get established he sprays cow urine, neem oil, Psuedomonos and Panchagavya @ 2 to 5 ml per litre of water, alternatively at regular intervals. This enables him to control major



Shanmukha in his chilli field.

pests and diseases like leaf curling and anthracnose. He also maintains a border crop comprising maize, castor and marigold to prevent contamination from neighboring farms and to trap pests. The marigold helps him to also earn additional income during festive seasons.

Along with Mr. Shanmuka, there are many chilli farmers in the region who believe and are following organic practices for years. They are also realising premium price for their organically produced products. The organic farmers in the region are also encouraged by the Spices Board in group certification and capacity building.

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