

Novel way to irrigate fields using plastic saline bottles

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Ingenuous idea: It is a good alternative to big drip systems but requires labour and patience. — Photo: Special Arrangement

Irrigation poses the greatest challenge for a farmer since water availability needs to be there almost throughout the year. Monsoon failure means fall in yield and farmers are the direct sufferers when the rains are inadequate.

“Especially in a country like India, the unseasonal and unpredictable weather, especially when it turns into droughts forces agriculture scientists and farmers to think of alternative simple and effective solutions to overcome the crises,” says Dr. I.S.Tomar, Programme Coordinator, KrishiVigyan Kendra, Indian Council of Agriculture Research (ICAR) near Rajgarh Naka, Jhabua.

Case study: One such case study that has been quite popular is use of discarded plastic saline bottles for irrigation by farmers in Jhabua district in Madhya Pradesh. Basically a tribal dominated dry region, agriculture is the main source of livelihood for the people there. Maize, blackgram, soyabean, wheat, and cotton are normally grown.

To enhance income of the farmers of the area, an attempt was made to introduce improved vegetable cultivation under National Agricultural Innovation Sub Project called Integrated farming system for sustainable rural livelihood in undulating and rainfed areas.

Mr. RamashBariya, a small farmer from the village, started growing vegetables under this project guidance in a small area. He got a good profit initially and this encouraged him to start growing some gourd varieties like bitter and sponge gourds. He prepared a small nursery for raising the seedlings but faced acute water shortage due to delayed monsoon.

Worried, he discussed with NAIP project scientists who advised him to adopt an innovative irrigation technique using waste saline bottle.

“We wanted to try out this method in the farmer’s field since it is quite cheap and effective and farmers who cannot financially afford big drip systems can try this. But farmers should realise that it requires labour and patience,” says Dr. Tomar.

Remove bottom portion: In this technique, the bottom portion of the bottle is removed using a sharp knife and the bottle filled with water. It is hung upside-down from a stake next to the sapling in the field. The plastic tube with the nozzle is made to touch the ground near the plant root.

Instead of allowing water to be irrigated through the channels in the field or pouring it on the crop with a bucket, water starts dripping on the soil surface making the root zone wet, thereby supplying moisture continuously to the crop.

Purchased the bottles: The plastic control knob in the middle of the tube can be adjusted to control the drip. The farmer purchased about 350 bottles from a waste paper mart and started using them for his cultivation. His entire family used to help him in filling the bottles with water.

"I have been able to get a net profit Rs.15,200 from less than a hectare till date by using this method for my vegetables," says the farmer..The state agriculture department conferred an achievement award on him for adopting this simple yet effective method to overcome water shortage.Many others in the surrounding areas have also started adopting this method for their crops.

According to Dr. Tomar, this type of irrigation is quite popular in African countries like Kenya. Many American farmers are also using this system to grow their kitchen gardens. But in India it is not popular. The reason could be that it is time consuming and labour intensive.Though today there are several government schemes and subsidies available to install a full fledged drip irrigation system the paperwork involved is quite laborious, and delays cultivation work.

Can tie up: So farmers are encouraged to adopt such indigenous ideas to overcome their local cultivation problems. If there is a hospital nearby, farmers can tie up with it to collect the waste bottles directly, and on a regular basis.

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