

Experts find way to better tomato yield with less water

Scientists in Central Arid Zone Research Institute (CAZRI), Jodhpur can now grow tomatoes and cucumber in low amount of water in the arid region.

Water conservation has always been a priority of people in the arid region of the state. With the use of grafting technique, drip irrigation in poly houses, scientists of CAZRI were able to produce one kilogram of tomatoes in 35 litres of water as opposed to 250 litres required in open fields. Director of CAZRI, O P Yadav explained, “This method is very efficient in economizing water use in vegetable cultivation in arid region. Our scientists have used the rootstock of a wild tomato (*Solanum piminellifolium*) attaching it to the cultivated/commercial tomato cultivator.

This was done because wild tomato rootstock was found suitable to provide water and nutrients more efficiently even under water stress conditions to the aerial part of the plant. Wild tomatoes are resistant to diseases and utilise less water. With grafting, not only water but also nutrients are transferred to the cultivated tomatoes, thus helping it attain better growth and produce high yield.”

In cucumber, rootstock of pumpkin is used which considered to be disease resistant. The project was directed by senior scientists Pradeep Kumar and P S Khapte. They are hopeful that this will help resolve the water crisis in arid zone.

“In open field, it takes around 250-300 litres of water through flooding methods to grow one kilogram of tomatoes. We have brought it down to 35 litres and in cucumber to 24-27 litres in poly houses using grafting and drip irrigation. Moreover, it will also increase the production by 40%. So, a farmer’s recurring issues of water, low production and soil-borne disease in poly-houses will be resolved through this approach,” Pradeep said.

He said that tomato grafting is relatively easier than cucumber in terms of technicality involved. A trained farmer can do tomato grafting, but for cucumber grafting, a farmer will have to approach vegetable nursery for grafted seedlings as it involves technicality and relatively particular environment for grafted seedling production.





There will also be 25% to 50% increase in cost of inputs for farmers for using grafting technique which scientists say will be compensated by the higher production rate in the field with lesser risk from adverse growing conditions.

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