



Conjunctive use of urban wastewater with other water source for vegetable production

TECHNOLOGY BRIEF

Considering the rapid increase in freshwater scarcity, urban wastewater is a potential irrigation-source, due to perennial availability and nutrient richness. Particularly, in peri-urban areas where vegetables are grown having high value due to urban proximity. Use of 100 percent wastewater as irrigation in vegetables has associated health risks. The conjunctive use of wastewater with river water or other freshwater source saves up to 50% of freshwater with a yield advantage. The heavy metal concentrations remain within the permissible limit in edible parts of vegetables grown with conjunctive irrigation, i.e. alternate irrigation with river water and wastewater. The soils are also enriched with organic carbon, available N and K in both the wastewater irrigated (100%) and conjunctively wastewater used plots (1:1:: Wastewater: River water).

HIGHLIGHTS

- Alternate irrigation with river water and wastewater.
- The yield advantage of 9% for bitter gourd, 15% for cucumber, 3% with okra and 11% with ridge gourd.
- 50% savings in fresh water.
- Heavy metal concentrations within permissible limits in produces.

IMPACT / UTILITY

This technology was experimented with and developed in a farmer's field (2010-2011) at Jaypurpatna (20°20' N, 85°83' E) involving seven farmers and showcased to about 150 farmers. Perennial availability of urban wastewater can mitigate the water shortage in vegetable seasons expanding the area under vegetable cultivation. This technology can save fresh water for high-value potable use. The increased productivity can enhance the incomes of peri-urban smallholding households, improving the food security and livelihoods of millions of people in India. This is likely to upshot a societal symbiosis among farmers and city dwellers.



Project Details

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