

Grey water irrigation more profitable

By Umashankar Mishra

Twitter handle: @usm_1984

New Delhi, May 6 (India Science Wire): Over the years the increasing population and urbanization has meant growing shortage of land for disposal of domestic grey water, indiscriminate cutting down of forests for biomass production and lesser availability of water irrigation. Indian researchers have found a one shot solution that can not only address all these three concerns but also generates more income for farmers.

A study conducted jointly by researchers at G.B. Pant University of Agriculture and Technology, Pantnagar, Gautam Buddha University in Noida and Indian Soil and Water Conservation Institute, Dehradun have shown that eucalyptus, poplar, white willow and chinaberry trees grew better with domestic grey water than with ground water.

The study found that the dry biomass produced was as much as 321 per cent more in the case of chinaberry, 274 per cent more in the case of white willow, 143 per cent more in eucalyptus and 54 per cent more in poplar. The trees grew faster and yielded better quality timber.

The soil of the experimental site was sandy loam in texture and slightly acidic. The greywater used for the experiment came from the bathrooms and kitchens of two residential colonies of the university in Pantnagar, having a population of approximately 5,000. The control plot was irrigated with water from a shallow borewell.

The scientists found that biomass, calorific value and nitrogen content were higher for trees grown with grey water. In a report on their study published in the latest issue of *Current Science*, researchers said, “the positive impact on the growth of plants irrigated with greywater could probably be due to optimum loads of nutrients and organic matter present in it.”

While the freshwater-irrigated plot is expected to give returns of Rs 54 lakh by the end of the experiment after five years, the greywater-irrigated plot is expected to fetch Rs 68 lakh after five years. This means the use of grey water is expected to earn an extra income of 14 lakh. This does not take into account the savings in terms of avoiding setting up of systems for disposal of the grey water and also the environmental benefits that arise out of avoiding cutting down of forests for firewood timber and other purposes.

The research team included R.K. Shrivastava of G.B.Pant University of Agriculture and Technology, Asha Pandey of Gautam Buddha University, and Rajesh Kaushal of Indian Institute of Soil and Water Conservation. (India Science Wire)