

# CEWRI Deploys Responsive Drip Irrigation/GrowStream Experimentation and Demonstration at NARC



National Agricultural Research Council (NARC) in collaboration with Eva-Anna Agro & Livestock Farms and Responsive Drip Irrigation (RDI), have deployed the use of the latest and most water efficient sub surface drip irrigation system “Responsive Drip Irrigation or GrowStream” in the world.

The GrowStream has a very simple scientific procedure on how it works. When crops and plants need water and nutrients, they emit root exudates that allow them to uptake what they need from the surrounding soil. The patented RDI system responds and interacts with these root exudates, allowing water and nutrients to be released out of the billions of “smart micropores” in the GrowStream tubing. When the plant is satisfied, it stops producing root exudates-and GrowStream stops releasing water. Plant variety, stages of growth and development and weather conditions like temperate, sunshine, rain, wind, humidity all contribute to how much water and nutrients each plant root demands. Like an underground reservoir, GrowStream allows each and every plant to draw what it needs dynamically, 24/7.

Orange Orchards and vegetables (Tomatoes, Cabbages, Bok Choy Lettuce, and Broccoli) in a Tunnel and Open Field Environment have been selected for testing and demonstration purposes. The results of the technology will be compared with Standard Drip Irrigation Practices. The system is very simple, and it comes with basic accessories of GrowStream Pipe, Standard Drip Tape Fittings, and an Automatic Pressure Regulator. All devices are mechanically operated. One Water Tank for each demonstration plot is being used, with no energy usage required. Demonstrations will be thoroughly tested for Water Savings, Plant Yield, and Plant Health. The system is claimed to be highly water & energy efficient. It saves 30-50% water vs conventional drip irrigation and redefines the standard for water efficiency. This increases crop yield by reducing stress and allowing each plant to self-regulate its own water delivery. System uses low pressure (2-3 psi) and requires minimal to zero energy for operations.

NARC is analyzing the positive impact it could have on the state of agriculture in Pakistan. The demonstration of this technology aligns with the department's goals and objectives, keeping in mind the drastic effects climate change is having on the agriculture sector.



Installation and Laying of GrowStream Pipe in Vegetable Demonstration Plot



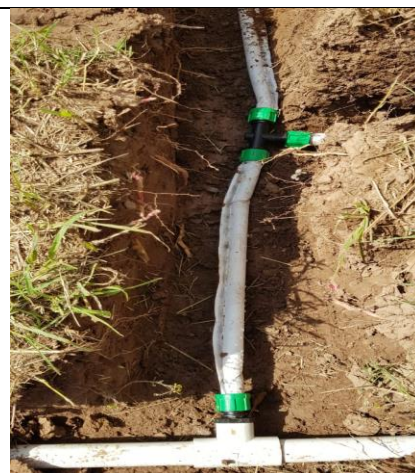
Trenching for Orchard Demonstration Plot



Tanks for water provision having zero energy requirements for operations



Automatic pressure regulator (APR)- mechanical device



GrowStream installation- using conventional drip tape fittings