



## New tool to help growers fight salinity

FARMERS who have reduced their water use in irrigation are experiencing an unwelcome reward for their efforts: salinity problems. Exacerbated by the drought, root zone salinity is emerging in areas with highly efficient irrigation systems.

If left unchecked, root zone salinity can kill the plants and could cost the Riverland and Sunraysia horticulture industries more than \$100 million a year. A simple tool developed in South Australia is helping citrus and grape growers deal with the problem.

SA Research and Development Institute scientist Dr Tapas Biswas says root zone salinity in vines and citrus was not an issue a decade ago when water was used plentifully by irrigators. "But this has led to a new issue," he says. "There's less water to leach the salt through the soil and it is accumulating within roots causing leaf tip burn, yield loss and eventually the death of the plant."

Dr Biswas has developed a soil water extractor, which is a simple, portable and easy-to-use device to help growers manage salinity management. It allows them to measure the salinity of water anywhere on their property and adjust their irrigation management to avoid the build-up of salts. The Australian horticulture industries will be the first to benefit from this tool.

The device, marketed under the brand name "SoluSAMPLER" by Adelaide based SENTEK Sensor Technologies ([www.Sentek.com.au](http://www.Sentek.com.au)), draws moisture from the surrounding soil and stores it in a specially deigned ceramic cup. Growers can then easily measure the sample using a salinity metre and flush salts through the plant's roots before they are toxic.

The SoluSAMPLER is also an excellent tool for monitoring the movement of nitrogen through the soil profile. Soil water samples collected periodically after a fertiliser event can be analysed for nitrogen and phosphorus content. This will help irrigators to keep the fertiliser within the profile.



Dr Tapas Biswas (left) explaining the use of SoluSAMPLER to South Australian Agriculture, Food and Fisheries Minister Hon Rory McEwen, who launched this device on 15<sup>th</sup> May 2007.

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### Brief Biography of Dr Tapas Biswas

Dr Tapas Biswas a SARDI (South Australian Research & Development Institute) Senior Irrigation Scientist with the Water Resources & Irrigated Crops unit. Dr Biswas holds a PhD degree in Soil Science and a Grad-Dip in GIS & Remote Sensing; his research areas include irrigation and salinity management with special emphasis on root zone solute and water dynamics. While addressing the sustainability issues of irrigated agriculture, Dr Biswas's work aims to assist growers, irrigation technologists and policy makers in measuring and managing water use, deep drainage and farm salinity. His invention "SoluSAMPLER", an inexpensive simple device, is helping growers fight irrigation salinity in many countries.

(<http://www.ministers.sa.gov.au/news.php?id=1611>).