Cooperative Research Centre for Sustainable Rice Production

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… of growing importance

Media Release

Using One Problem to Solve Another

The problem of water losses from leaking irrigation channels can now be solved using waste products from rice mills and water treatment plants.

Every year thousands of megalitres of irrigation water is lost through the bottom of channels and enters the water table. Tests have revealed losses of up to 60 megalitres from channels on one farm in one season. As well as being an expensive loss of water, this phenomenon contributes to groundwater and salinity problems.

Rice CRC researcher Saud Akbar has spent the past 7 years working on this problem and has come up with a unique solution which kills two birds with one stone. By using waste products to seal the channel surfaces, water loss from channel leakage can be reduced by around 70%.

The finely textured waste products, rice hull ash or flocculation sludge, are incorporated into the top 50mm of soil in the channel bed. The minute particles of waste material fill the spaces between the soil particles, effectively sealing the channel.

Rice hull ash is a bi-product of a process by which rice hulls are turned into a specialised insulation material used in the steel industry. Up until now, disposal of this bi-product has been a problem for Biocon, the company that produces it. Flocculation sludge is also a nuisance bi-product, which comes from the bottom of settling tanks in water treatment plants.

Trials carried out by Saud, and his team at Yanco, NSW, have resulted in the development of a 3-stage process to apply the bi-product to the channel bed, which begins with spreading the bi-product along the length of the channel. A tractor mounted rotary hoe then thoroughly mixes the bi-product into the top layers of soil, firstly in its dry state, then again after the channel is filled with water.

The beauty of this simple process is the fact that a farmer can carry out the work himself with very little expense and without the need for specialised equipment.

Other work associated with this project will help identify areas where channels would be best sited in the future to avoid leakage losses.

Photos available - Contact Grant Webster

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