

MEDIA RELEASE

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UNIVERSITY STUDY CONFIRMS BROONS' BH-1300 "SQUARE" IMPACT ROLLER REDUCES WATER LOSS IN COTTON REGIONS

A study conducted by Mr. Nik Auzins from the University of New England, Armidale N.S.W. has concluded that Impact Compaction can achieve significant benefits in assisting to reduce water loss in high usage irrigation farming such as cotton and rice.

Trials, conducted with the assistance of Mr. Peter Davidson, were held on the 15,000ha Tandou Farm in far western New South Wales with technical support from Impact Roller manufacturer, Broons Hire. "The Impact Roller offers potential in minimising water losses in agriculture from seepage, through compaction", claims the detailed report.

Findings of the study, presented by Mr. Auzins at the 8th ANZ Geomechanics Conference in Hobart, went on to say, "Investigations at a field site showed an increase in density and reduced permeability in highly plastic clay soil, commonly found in cotton growing areas, after the application of an Impact Roller".

Insitu permeability tests were undertaken at several levels down to nearly one metre on two embankments that were known to be leaking beforehand. After 15 passes of the Broons BH-1300 "Square" Impact Roller, results indicate hydraulic conductivity was reduced to an unmeasurably low value below 250mm from the surface. A major benefit of the BH-1300 "Square" Impact Roller™ is its significant depth of influence, often over 1.5m, in comparison to conventional vibrating rollers that struggle to handle 250mm layers in heavy clay.

The depth of influence and high productivity, in excess of 1500m²/hr, are key factors when considering the application of the Impact Roller to treat leaking channel banks and water storage floors. Costly alternatives such as clay or synthetic liners, or chemical additives are generally not viable due to the large areas to be covered.

Compaction has often been a secondary consideration during construction of the banks and storages. Growers frequently rely on the movement of earthmoving plant across the fill to compact the material in an attempt to minimise the expenditure of these massive infrastructure projects.

"Ongoing failures in channel banks and storage walls has highlighted the need for closer attention to compaction during construction, or at the very worst preventative action on existing structures before the problem arises. Based on the findings of this report, our "Square" Impact Roller should be strongly considered as a cost effective





solution to minimising leakage or failure", said Broons' Manager Market Development, Stuart Bowes.

From their success in the Australian cotton regions over the last eight years, Broons have diversified into other agricultural applications including the extensive rice growing area in the NSW Riverina where excessive permeability of the soil is leading to increased salinity, forcing growers to abandon fields entirely.

"The fundamental principal remains the same in both the rice and cotton industries - both want to stop water loss! The difference being, Rice Growers still want the ground soft enough so as not to affect their yield", commented Mr. Bowes.

Generally between three and six passes have shown to be adequate to seal rice fields, relying more on the kneading action of the Impact Roller reworking the poor soil structure to reduce permeability than a significant increase in density by compaction through an increased number of passes.

"Proving the value of Impact Rolling has taken many years while we wait for the results to flow", said Mr. Bowes. "Now, with our past track record, we are finding it's becoming a more accepted practice as conventional solutions are often expensive or only short term stop gap measures".

Authorities, such as Marthaguy Irrigation near Warren, Murrumbidgee Irrigation at Griffith and Leeton, and Narromine Irrigation claim successful results having used the Broons BH-1300 "Square" Impact Roller.

