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Cooperative Research Centre for Sustainable Rice Production

... of growing importance

Media Release

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STRESSED RICE YIELDS UP BY TEN PERCENT

Rice enjoys a little stress at the right time. Deniliquin based rice researcher, John Thompson reports that for the third successive season he's been able to increase rice yields by 10 percent by stressing the crop towards the end of tillering.

"The aim is to let the crop use all of the surface water at this time. It's an accepted management practice in some rice growing countries but it's a technique that requires good lay-out, the ability to get water back onto the crop quickly and a high level of management."

Mr. Thompson said that the key to success was to control the level of moisture loss.

"We know that if you push the moisture loss out to 130 mm of accumulated evapo-transpiration (ETo) you'll cause permanent damage and the crop won't fully recover. In this case we've pushed the accumulated ETo out to between 80 and 90 mms and seen a 10 percent increase in yield over a crop that wasn't stressed.

"The amount of stress will vary with soil type and initially I thought that the response may be coming from soils that had grown a number of crops and were 'tired'. My most recent trials were on country that had never grown rice and the response was similar to earlier results.

"To date all of the work has been done on transitional red brown earths and I'm looking forward to this season when, with the continued backing of the Rice CRC the technique will be trialed on-farm and across a range of soil types.

"We don't know the physiological explanation but this is the third time we've seen about a 10 percent increase in yield in response to the technique. The speculation is that the yield increase is the result of the crop shedding ineffective tillers when it is under stress but I can't over-emphasise the fact that ponding from about 10 days before panicle initiation right through to the end of grain filling is critical. This is a technique that requires very careful management.

"Although not designed to save water, there might be as saving of perhaps one ML/ha but the increased yield certainly boosts the crop's overall water use efficiency."

-ENDS-

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