STORED MOISTURE AT KELLERBERRIN PROVIDES EXTRA BENEFITS

Soil variability and managing production was the focus of a field workshop held last week by the Kellerberrin Demonstration Group. More than 20 member of the group visited Kit Leake’s property where CSIRO Sustainable Ecosystem scientist, Dr Yvette Oliver showed how the variability of yield across a paddock relates to Plant Available Water Capacity (PAWC).

Members of the Kellerberrin Demostration Group, which belongs to the Local Farmer Group Network, have been working with CSIRO on examining soil types in the Wallitin O’Brien Catchment and relating yield to soil properties with an emphasis on plant available water capacity and subsoil constraints.

Three separate soil pits were dug within a 500 metre radius of each other for the purpose of the early October workshop. Each soil pit represented either low, medium or high yielding areas of the paddock were used to demonstrate the PAWC and the constraining soil characteristics.

“The low yielding soil type exhibited an acid layer at 20cm with deep yellow clay sand, Aluminium and pH toxicity was evident, and roots were constrained at 50cm. The profile showed us these were all factors in constraining the PAWC to approximately 30mm”, Dr Oliver said.

“In the medium yielding, gravely soil type, roots were evident to1.2m and there was twice as much PAWC as the low yielding site”

“The high yielding, loamy sand, roots were again evident to 1.2m, however a hard pan was evident at 20cm and the area will require deep ripping and liming.”

“It was interesting to examine the variability of yield across the paddock and how it relates to soil type”, Dr Oliver said.

Managing the performance of this paddock, with the added insight into the extreme variability of soil characteristics in a relative small area, presents a challenge for it’s owner. “Deep placement of lime was suggested by Bill Bowden and Geoff Fosbery for the low yielding area, but we will need to crunch some numbers before we think about using this strategy on a commercial basis”, Kit said.

“We will however, continue to try to match fertilizer to yield potential so as to increase our overall returns.”

The trial provided lively discussion for the group members together with members of DAFWA, ConsultAg and the Wallitin-O’Brien Catchment Council.

The morning included viewing and discussion of trials at Ashley Bonser’s property where geophysics are being used to pick soil type boundaries and determine the extent of the salinity constraint.

Finally, the group visited brown manure sites belonging to David Leake and Kevin Walsh to look at the benefit of applying Nitrogen in other years.
“Dry years don’t need additional Nitrogen, as shown on these sites, but in good years there are benefits to increased Nitrogen in the soil”, Dr Oliver said.

The Kellerberrin Demonstration Group, of which there are 10 members, evolved through a partnership with ConsultAg Northam and Jeff Russell, DAFWA Northam in 1999. The group are active members of the Local Farmer Group Network and plan to continue to develop their knowledge of plant available water in their area and it’s constraints with the assistance of CSIRO and extend this across the network of grower groups throughout the wheatbelt. Further workshops will be held in 2007 and members of the Catchment are invited to participate.

Dr Yvette Oliver from CSIRO Sustainable Ecosystems is interested in assisting other groups develop their plant available water profile in 2007. If your group is interested, please contact Dr Oliver on 9333 6469 or email Yvette.oliver@csiro.au.

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