



CROP DOCTOR

With Peter Reading

SOUTH

SOLUTION TO SUBSOIL ACIDITY

Subsoil acidity is an expensive blight on many sandplain soils of the Southern Australian agricultural landscape, eating away at farm productivity and dissolving profitability.

However, a paper delivered by Dr Stephen Davies of the Department of Agriculture and Food WA (DAFWA) at the Grains Research and Development Corporation (GRDC) supported 2009 WA Agribusiness Crop Updates, clearly demonstrates that effective solutions to the problem exist.

Stephen believes subsoil compaction and acidity in many sandplain soils go hand-in-glove and treating both problems is the key to improving productivity.

Drawing on 2008 experimental results from a property at Maya in the Mid West, he said deep ripping to 50 cm, combined with deep placement of lime, improved crop growth due to better access to water and nitrogen early in the season.

The experiment at the site was established in 2005 and yields in the two years the site has been cropped, 2005 and 2008, were 3.3 tonnes per hectare for the deep ripping and deep lime to 50 cm treatment, compared to 2.5 tonnes per hectare for the untreated control, demonstrating obvious benefits in reasonable seasons.

By contrast, surface applied lime treatments and lime placed to 30 cm with deep placed nutrients at the site showed no significant yield increase.

The deep ripped soil reduces penetration resistance and greatly increases wheat root abundance.

Not only are yields increased with deep ripping and deep liming, quality is improved too, with reduced screenings and higher hectolitre weights.

Treating the problem is one thing, but a gram of prevention's worth a kilo of cure. Stephen said the best strategy is to prevent subsoil acidity with regular liming at sufficient quantities to maintain

topsoil pH at or above 5.5 and minimise compaction by using a controlled traffic (tramline) farming system where possible.

Managing soil pH should be seen as a long term investment to prevent soil degradation and sustain productivity.

The amelioration treatment is highly profitable, with an estimated gross margin benefit of \$159 per hectare at the Maya experiment site, compared to the untreated control – and the benefits are long lasting.

Surface applied lime in sufficient quantities has been shown to provide a benefit for 12 or more years in other research trials and large scale on-farm demonstration sites.

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Dr Stephen Davies in a soil pit at Maya in the Mid West, where deep ripping to 50 cm, combined with deep placement of lime, improved crop growth due to better access to water and nitrogen early in the season.

Equipping the next generation

A powerful spotlight is shining on the Institute of Agriculture (IOA) at The University of Western Australia (UWA), with an impressive long list of prestigious awards, scholarship grants and healthy student enrolments.

The recent prize windfall for three young UWA IOA students at the *Young Professionals in Agriculture Forum*, hosted by the Department of Agriculture and Food WA and Australian Institute of Agricultural Science and Technology, underlined why UWA is the university of choice for undergraduates seeking to excel in agricultural and related natural resource management studies.

Of all the students who had completed their fourth year projects in agriculture-related subjects at WA universities, first (Taya Clarke), second (Robert Alderman) and third (Tess Metcalf) prizes were awarded to UWA agricultural science students.

UWA IOA Director, Professor Kadambot Siddique, said UWA agricultural achievements continue to grow. "We are in the business of knowledge generation and transfer and equipping young, bright students to be the next generation of leading scientists and entrepreneurs." ■



Young Professionals in Agriculture Forum finalists (L to R) Tess Metcalf and Amy Goddard, both of UWA, Dr Mark Sweetingham of DAFWA, Caris Peck and Taya Clarke, both of UWA, WA Chief Scientist Professor Lyn Beazley, Robert Alderman of UWA and AIAST WA President Dr Don Burnside.