



Transforming the productivity of sandy landscapes

Adoption of evidence-based amelioration practices have increased crop productivity (with yield benefits of up to 200%) in sandy landscapes.

The Sandy Soils project consortium between CSIRO, Grains Research and Development Corporation (GRDC), the University of South Australia, the South Australian Government, regional agricultural consultancies and grain growers improved on-farm diagnosis and soil management to combat sandy soil constraints to crop productivity.

The challenge

Sandy soils are widespread across the southern cropping region and present challenges for crop productivity. Effective management of sandy soils requires an understanding of soil constraints and to what extent they can be managed. Knowledge of the benefits of soil mitigation and amelioration techniques is necessary to provide informed guidance and increased certainty for grain growers to make decisions about whether, and how, to incorporate these techniques.

The diffusion of know-how has made a broader group of grain growers aware of amelioration practices, and resulted in increased interest in learning opportunities.

The response

Experiments assessed more than 200 soil treatment combinations. They included innovative engineering solutions that had lower application risks and easy adaptation for commercial machinery. An interactive web application (Sandbox) was released which allows grain growers to evaluate amelioration options in the context of their soils and climate, to identify their soil constraint, to review experimental results and to select and optimise machinery options for on-farm testing.

The impact

The research approach and amelioration trial designs of the Sandy Soils project has enhanced the knowledge base in the field. Survey results suggest rapid adoption of validated amelioration practices. Fifty-seven grain growers were surveyed. Nineteen per cent of participants used amelioration techniques solely, and 56 per cent used them in conjunction with soil amendments. Few participants (7 per cent) had not treated their land with any solutions but were on the verge of adoption. Communication with participants also suggests the research has contributed to increased acquisition of new amelioration machinery. A recent evaluation of the prospective benefits of Sandy Soils research estimates that for every dollar of investment, \$18.90 of benefits could be generated for the broader community.

Dr Therese McBeath
Research Team Leader, Agriculture and Food
+61 8 8303 8455
therese.mcbeath@csiro.au
research.csiro.au/sssr

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