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MEDIA RELEASE

SANDY SOILS RESEARCH TO YIELD BETTER CROPS ON THE EP

Farmers are set to benefit from a two-year intensive drought resilient soils demonstration program, under way on the Eyre Peninsula.

Across 16 demonstration sites, including at Poochera, Streaky Bay, Arno Bay, and Mount Damper, the program will trial 'scaling out' farming practices on a commercial scale, aimed at enhancing productivity, increasing yields, and boosting drought resilience.

The project is a significant investment, funded by the Australian Government's Future Drought Fund's Drought Resilient Soils and Landscapes grant program ($995,000) and the Grain Research & Development Corporation ($100,000), with support from the SA Drought Resilience and Adoption Hub.

Led by Agricultural Innovation & Research Eyre Peninsula (AIR EP) and delivered by a team of grower groups and agronomists, the research will encompass more than 3 million hectares of sandy soils on the EP, Upper Yorke Peninsula, Mallee, and the South East.

AIR EP Executive Officer Naomi Scholz says not only will the outcomes benefit farmers, but it is predicted there will be significant broader community flow-on effects, in the form of economic and environmental benefits.

"This would in-turn represent a return in investment, which would build not only the drought resilience of farmers but improve the financial security of businesses and communities that support farming activities across the landscape," Ms Scholz said.

"This project will also benefit communities by reducing soil loss, as well as less community health impacts from dust storms."

On the demonstration sites, 'scaled out' management options will be used, including on-row seeding, paired row seeding, banding of soil wetters, deep ripping, and spading.

Furthermore, the trial sites will focus on practical solutions when farmers implement these practices at commercial scales, which have not been addressed in small plot experiments.

One of the trial sites is hosted by Ben Ranford, who farms between Cleve and Arno Bay. Mr Ranford crops 3000 hectares, of which 600ha is water repellent sands.

CONTACT:
Mail: PO Box 485, WUDINNA SA 5652
Email: eo@airep.com.au
Phone: 0428 540 670

“Non wetting sand presents a number of challenges to grain production, from achieving even germination of crops, weed control and avoiding erosion,” Mr Ranford said.

“Over decades we have used various tillage approaches including prickle chains, disc chains, points and press wheels, and disc seeding, with the outcome largely determined by timing and seasonal conditions. Most of these methods only address establishing a single crop, not changing the soil going forward.

“More recently, farmers have used more radical methods to improve the productivity of water repellent sand. Spading, delving and deep ripping with inclusion plates can redistribute sand and the clay which lies beneath it. There are many variables and possible outcomes depending on the situation. These treatments are creating dramatic changes to soil texture, structure, and nutrient availability.

“Farmers have the capacity and incentive to undertake the work to improve their sandy soils, but we are not always good at monitoring and measuring the results. We know if something is better or worse, without the analysis which would help refine the approach. This project is a great opportunity to increase understanding, which will give more farmers the confidence to tackle the challenges of water repellent sand.”

The issues that arise when scaling up sandy soil amelioration practices include exposure of topsoil to erosion; trafficability and management of paddocks post-amelioration; crop establishment in ameliorated paddocks; crop selection and stubble management pre and post-amelioration; and crop inputs to extract the best response from amelioration treatments.

Ms Scholz said the physical properties and underlying constraints of sandy soils across the landscape were highly variable.

“Therefore, to effectively increase the productivity of these soils at a landscape and regional scale, farmers need to be able to effectively diagnose the key soil constraints within a paddock, and then select the appropriate suite of management actions to address the limitations where cost-effective returns are most likely,” she said.

“Investing in the productive capacity of sandy soil will reduce the impact of drought on the quality of natural capital and reduce the incidence of dust storms which reduce air quality for communities across south-eastern Australia. This project represents an excellent investment as it will lead to enhanced drought resilience across a low-medium rainfall region highly exposed to drought risk and declining rainfall.”

Although outcomes are likely to deliver private and community benefits, there are significant contributions from local farming communities through grower groups and the GRDC, estimated at $150,000. These in-kind contributions will be in the forms of governance, project management, resources, monitoring demo sites, and use of machinery.

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Demonstration sites

Each site will establish simple comparisons of practices and implementation techniques that will be selected by local farmer reference groups to address the specific sandy soil constraints for their local landscape type.

This process will be supported by University of SA's Agricultural Machinery Research & Design Centre (AMDRC) staff. Furthermore, the existing Sandy Soils Research Team led by CSIRO will also contribute technical expertise to the project.

All demos will be backed up with monitoring by the project team to quantify the impact of practices on soil condition, crop productivity and farm profitability. This monitoring data will be essential for evaluation of innovation impact and adoption potential at the landscape scale.

Using a focus group approach at each site will provide growers confidence that the benefits measured in small research trials can be translated to a commercial scale and allow for adoption on their own farms.

Detailed case studies will document activities and outcomes at each demo site and will be accessible in a range of formats to maximise the reach to growers within the target landscape, as well as farmers managing similar sandy soils in other regions of Australia.

What is AIR EP?

AIR EP is a farmer-driven organisation, focused on applying research and the extension of agricultural technologies and innovation here on the Eyre Peninsula.

AIR EP is the result of a merger between the Eyre Peninsula Agricultural Research Foundation (EPARF) and the Lower Eyre Ag Development Association (LEADA) farming systems groups, who had been effective in providing local RD&E outcomes for the EP over the past 15 years.

By joining forces, AIR EP has created efficiencies in administration and operations, and provides a stronger face for regional RD&E to future funders, partners, members, and supporters.

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