



Healthy Subsoils Produce More Red Meat

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The MLA Producer Demonstration Site (PDS) Project "Healthy Subsoils Produce More Red Meat" project has returned with a seminar and in-field demonstration of subsoil manuring.

The project aims to demonstrate that subsoil-amelioration in high rainfall pasture can have similar benefits as seen in cropping situations.

The project is coordinated by Dr Matt Mahoney of Agridome Consultancy and the day was hosted by the Yarra Valley Farmers' Best Wool Best Lamb Group and supported by the Grassland Society.

The seminar and workshop at Coldstream on March 9 was the third and final workshop where presentations from expert speakers explained the benefits of subsoil amelioration and marked the beginning of treatments and the field-work part of the project.

Speakers included Dr Peter Sale from La Trobe University who presented on increases in water-use efficiency in crops with subsoil manuring. Farm emissions specialist from the Department of Jobs Precincts and Regions, Alison Kelly, discussed the importance of understanding your farm emissions and where soil carbon fits. Simon Falkner from TerranovaAg provided an overview of how subsoil manuring is done and also led a subsoil manuring demonstration in the paddock while Dr Mahoney led a workshop/training exercise for PDS group participants.

Dr Sale's presentation showed that subsoil manuring, a process of applying high rates of nutrient-rich organic amendment, such as poultry litter, at 300-350 mm depth in a physically constrained subsoil was able to physically transform the dense clay into a friable, porous soil. The results presented in Dr Sales presentation occurred under favourable rainfall conditions at Ballan, in the Victorian high rainfall zone. The transformed subsoil allowed more subsoil moisture to be used by the crop, and more summer rainfall to infiltrate and be stored in the subsoil for a following crop. There were higher yielding crops following the subsoil manuring, with wheat yields of up to 5t/Ha above conventional control yields in the same experiment. Peter also reported that at one subsoil manured paddock in north-east Victoria in 2012, they measured an extra 78 mm of usable rainfall that could be stored and utilised by a wheat crop.

The research showed that crops grown on subsoil manured paddocks were able to access soil moisture from deeper in the soil profile and therefore maintain green quality foliage for longer, enabling higher grain yields. The effects can last for a number of years; some subsoil-manured plots still produced an extra 4t/Ha than the conventionally cropped wheat, 4 years after the subsoil manuring was undertaken.

"We're trying to replicate this and determine whether sub-soil amelioration can enable our pasture roots to better utilise the subsoil and extract soil moisture and nutrients from the subsoil, thus maintaining green, leafy vegetative growth for longer, and extending the growing season" Matt Mahoney said.

The project has involved 11 sites from Merrijig to Coldstream being soil tested, and from these sites three demonstration sites have been selected.



All sites recorded good results in soil tests from 0-10cm but below 10cm there were varying degrees of issues across the sites.

“From Yarra Valley to Mansfield, all sites had subsoil acidity and the plot at Coldstream also had elevated sodium concentrations in the subsoil,” Matt said.

“We hope the subsoil amelioration at this site will allow that soil to drain more freely, and not pug up as easily”

The PDS project funded by Meat & Livestock Australia is continuing for a duration of six years. There will be follow-up soil testing in years 3 and 6 along with pasture quantity and quality measurements taken throughout the six-year period as well.