

# Capacity to Deliver

# NSWLP-011-012



## Soil Biology

### Murrumbidgee Landcare Inc

## How to identify and monitor your soil's biological health

### The issue

Many landholders don't understand the relationships between the plants that grow in the paddocks and the soils that they grow in.

### The solution

Hay Plains Landcare hosted a hands-on soil biology workshop with agricultural ecologist David Hardwick from Soil Land Food.

The workshop provided participants with a better understanding of the importance of soil biology, and the various components of soil biology, including soil microbes, soil organisms, plant roots and organic matter. Participants also learned practical ways to assess the soil biology on their own farms. David showed participants some simple soil tests they could conduct on their farms, the main ways to improve soil biology in farming and grazing enterprises, and how to differentiate between the variety of products available.

### The impact

Participants gained greater understanding of soil biology through hands-on training for increased transferable knowledge.

A healthy top soil contains micro-organisms (soil fungi, bacteria and protozoa) and larger organisms (earth worms, spring-tails, insects, spiders, mites, centipedes, millipedes and dung beetles etc) called soil organisms. These organisms are important for nutrient cycling, disease control and maintaining a healthy soil structure.

The more diverse the community of soil organisms, the more effective nutrient cycling, soil structure maintenance and disease suppression will be.

### Learnings

#### Rapid Assessment of Soil Health (RASH)

The 5 main indicators are Ground cover condition, water infiltration, aggregate strength, soil organisms and pH

*Assess aggregate strength placing three 3-5mm soil aggregates samples into small dishes of water on a flat surface and observe how much slaking and dispersion has occurred at 10 minutes*

When placed in water, unstable soil aggregates can either remain intact, slake or disperse.

Clay content, organic matter, soil organisms and fine plant roots give soil good structure and reduce slaking and dispersion. Dispersion is also a potential indicator of soil sodicity. This is where there is excessive exchangeable sodium in the clay minerals of a soil.



### Key facts

- 15 participants understand the importance of Soil biota for sustainable production, and improved their knowledge and skills in identifying and monitoring soil biological health.
- Hay Plains Landcare made social connections.

### Project Partners



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