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Integrating Grazing And No-Till Cropping Systems
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The issue
The compatibility of livestock in a no-till farming system is still subject to debate. However, many no-till farmers are successfully grazing livestock in a no-till system.

As a landholder, you need to determine the financial importance of livestock in your farming enterprise system. Their use in future mallee farming could be limited unless they can be integrated in a soil-sustainable way.

This fact sheet will assist you to integrate cereal cropping and livestock on your property.

What we know
Livestock provide an income from paddocks that are not cropped and in poor cropping years. Both cattle and sheep are useful for stubble handling and weed management.

However, poor grazing management will lead to erosion on light soils and surface compaction on heavy soils. This can be avoided with sensible management. For example, stock numbers may need to be reduced when necessary and stock containment areas utilised.

If livestock are retained, weed control and root disease management must not be neglected. This can lead to loss of profit in the cropping program which may outweigh the extra income from the livestock.

Six considerations for the integration of no-till and livestock farming systems

1. Diverse rotations
Crop and livestock systems can be complementary. For instance, diversity of pastures (eg. use of perennials and/or nitrogen fixing legumes), varied length of phases and weed control from ‘spraying out’ and ‘spray grazing’ can all be utilised.

2. Integrated Weed Management
Sheep in the farming system increases the weed control options available in pastures.

Livestock grazing as an IWM tool includes grazing weeds and selectively spraying out pastures. The effect of this is a decrease in herbicide resistance. Additionally, weed seeds retained on the soil surface improve the effectiveness of weed control with pre-emergent herbicides.

Conversely, the effects of livestock hooves on weed seed burial, germination uniformity and spreading of weeds can be an issue.

3. Minimal soil disturbance
No-till seeders allow crops to be sown with residues retained on the soil surface to protect seedlings and the soil from the effects of the wind.

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4. Minimal soil compaction
Soil compaction can cause significant decrease in water infiltration and water stable aggregates while increasing soil strength.

Poor grazing management will contribute to surface compaction but will not influence compaction below the cultivation depth. Stock should be managed to minimise soil compaction, for example by the timing of grazing and stocking rates in winter.

5. Permanent soil cover
Full stubble retention is a common aim of no-till systems and a major reason some farmers do not maintain their livestock numbers.

While full stubble retention is not possible in a livestock system, even partial stubble retention is a beneficial tool as erosion control is still achieved with 30-50% residue cover.

6. Risk management
A well managed livestock enterprise reduces financial risk in a no-till system.

Striking the right balance
Sheep give us some relief from weeds, frost, poor crop returns and rocks – but we must ask, at what cost?

Sheep remove ground cover which if maintained reduces evaporation and improves water infiltration and retention. Reduced residues and increased compaction also encourages soil water run-off during heavy rainfall events, hence stored moisture is not there for a harsh spring day. Sheep move weeds, nutrients and camp on sand hills.

The important things to remember
No-till requires more attention to detail than a system that includes cultivation. Paddocks must be monitored regularly as do sheep and cattle.

Consider
- Attention to detail in your paddocks including rotations and how hard stubbles will be grazed
- Vigilant monitoring
- Timeliness of operations - for instance, will lambing or shearing operations need to be changed to fit into your cropping calendar?
- Identify what works in your district and talk to leaders in your area
- Grazing management including stocking rates and the time sheep are in the paddock
- Location of watering points and fencing (maybe temporary fencing) to reduce grazing in vulnerable areas.

Successful crop and livestock integration will come from a systems approach by maximizing the positives and minimizing the negatives!

For information
Farmtalk no. 12 “Getting into No-Till in the Mallee” has information relating to cropping considerations.

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