

RESIDUE MANAGEMENT

What is Residue?

Residue is that fraction of the plant left behind after harvest. It provides organic matter to the soil.

Residue is most commonly thought of as that part of the plant that is left on the soil surface. To a certain extent this is true but what is often forgotten is the residue existing in the soil from that crop i.e. the root residue.

Root residue can be of greater significance than surface residueWhy? Because as it breaks down it...

- it provides organic matter to the soil
- forms infiltration, drainage and aeration channels in the soil

What should I do with surface residue?

In most cases it is recommended that surface residues are mulched. This cuts the residue up into small, manageable pieces and provides good residue to soil contact.



Mulched maize residue – small even sized with good soil contact

This allows for rapid breakdown and provides better conditions for future machinery operations. Small residue pieces are less likely to block machinery e.g. side dressing tyres, than residue that has been left long and unmulched.

Why not disc in the residue?

Although this may put more of this season's surface residue back into the soil, you will lose (through carbon oxidation) the organic matter (OM) that is already stored in the soil. The effect is a net loss of carbon or OM.

You will also disturb the infiltration, drainage and aeration channels made by the root residue.



Disced residue – uneven size, poor soil contact

What effect can residue have on my operations?

Firstly, it may be more difficult to perform subsequent machinery operations eg planting and side-dressing, due to residue becoming lodged in the machinery

Remedial action: Make sure residue is as fine as possible. LandWISE has found that it is not a major problem if the residue is in optimum condition and machinery is suitable for the operation.

Secondly, residue may interfere with pre-emergence herbicides.

Remedial action: Get the pre-emergent herbicide on at the optimum time. Pre-emergence herbicides are designed for conventional systems and we are now using them in a way that may be less than ideal for their mode of action. Do not 'push the envelope' any further.

LandWISE has found that many herbicides which are usually incorporated work effectively if applied at the optimum time and watered in through either rainfall or irrigation. Weed control is a major part of a successful reduced tillage system. There is a wide range of herbicides on the market with varying modes of action.

If your usual programme won't work there is often another available. Seek advice from an agrichemical representative who has had experience with reduced tillage.

Thirdly, residue can hinder crop emergence.

Remedial Action: Make sure residue managers are on the planter to clear a strip to allow the plants to emerge evenly.