Lontrel® ADVANCED

HERBICIDE

Managing Residues

Lontrel® Advanced herbicide is used for the control of broadleaf weeds in canola, cereals, pastures, fallow, forestry and industrial uses.

At high rates, it has been shown to provide residual control of certain weeds for several months. Under certain conditions, these residues have been found to persist into the following cropping cycle and cause issues in sensitive crops.

Grain legumes, in particular, are very sensitive to clopyralid residues. (Clopyralid is the active ingredient in Lontrel Advanced). In order of most sensitive to least; faba beans and lentils are very sensitive, followed by chickpeas, then field peas, then lupins.

Cereals and canola may be safely planted at any time after application.

Factors That Influence Degradation

Clopyralid residues are primarily broken down by microbial activity. As soil microbes need warm, moist conditions to break clopyralid down, at least one rainfall event of 25 mm or more needs to occur over the summer to autumn period, to keep the top 10 cm of soil wet for one to two weeks. Ideally soil temperature needs to be between 18 and 30^{0}C. (Refer to the label for further directions and plantback intervals).

Soil pH is not a factor (as it can be for imidazolinones, such as Clearfield™ products and sulfonylureas eg Ally™, Logran™) provided microbial activity is not affected by very low or high pH.

Early post emergent applications are less likely to cause residue carryover issues to subsequent susceptible crops. This is due to there being more time for residue breakdown in the soil, less crop canopy, so less clopyralid retained in plant material, and more growth dilution over the season. Clopryalid applied at later timings on full crop canopies is more likely to be retained and be present in the crop residue after harvest.

Canola has a later application window (to 8 leaf) with greater ground cover than cereals, so crop residues may be slower to degrade in canola than cereals, both of which make it more likely to have carryover residues.

Soil contact with stubble is required to allow soil microbes to break down any residual clopyralid. Removal of stubble also removes some of the residues; cultivate, burn, bale or remove wherever possible. Avoid windrow stubble concentration; windrows should be burnt or chaff spread out behind the header, not concentrated in a row.

Problems Do Arise Where There Are:

- No microbes due to low or no organic matter, non-wetting or dry soil (which reduces microbial activity)
- Grazing that causes surface sealing (which stops or reduces water infiltration, despite significant rainfall)
- Late season applications that result in persistence in both soil and crop stubble (as explained above)
- Double applications, such as overlaps, header trails, corners or ends of paddocks

What To Look For

Symptoms of herbicide residue carryover (in sensitive plants) include:

- thickened, curved, and twisted shoots, stems and leaves;
- parallel venation (narrow leaves with callus tissue) and
- cupping and crinkling of leaves;
- cracked and callused (hardened) growth on stems;
- proliferated growth and enlarged roots. (See photos on reverse).

Similar symptoms can be seen in pulses due to insect activity, disease, nutrition and moisture stress. Clopyralid residues may not be the cause of the visual symptoms but in some cases these underlying stresses can be exacerbated by clopyralid residues.

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Note leaf cupping, twisting and curling at the growing points.



Root stunting and biomass reduction (affected on left, unaffected on right).

Alternatives To Lontrel Advanced

Develop a rotation plan, taking into account the paddock history and all likely future rotations.

Use short persistence products that do not persist in stubble or soil:

Paradigm® Arylex® Active Herbicide

- Selective for cereals over a wide window of application
- Registered for use on key weeds
- Rapid soil dissipation allows rotational flexibility
- Works on volunteer legumes, thistles, bedstraw, bifora (and other late season weeds)
- Mix with MCPA to control capeweed (< 5 cm) or mix with dicamba or bromoxynil (review export restrictions on bromoxynil residues)

Dicamba

Key Points:

- Clopyralid breakdown is quickest in warm, wet soil over sufficient time (refer to the label)
- Grain legumes are highly sensitive to clopyralid residues
- Cereals and canola are highly tolerant to clopyralid residues; if in doubt plant these crops
- Incorporate or remove stubble to reduce clopyralid residues
- Apply Lontrel Advanced early in the winter cropping season to minimise risk
- Use Paradigm® Arylex® active herbicide + LVE MCPA in cereals rather than Lontrel Advanced (or a generic clopyralid) if you intend to plant grain legumes the following season
- Plan your rotations to avoid a legume following a clopyralid application

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