



A GUIDE TO USING ROUNDUP READY® HERBICIDE WITH PLANTSHIELD® BY MONSANTO

Roundup Ready Herbicide with PLANTSHIELD by Monsanto is a member of the Roundup® brand of agricultural herbicides (which contain the 'glyphosate' active ingredient). Roundup herbicides are post-emergent and systemic with no residual soil activity. They are non-selective and give broad spectrum control of a wide range of annual and perennial weeds being well known and trusted for over 30 years.

Roundup Ready Herbicide with PLANTSHIELD by Monsanto is also non-volatile, stable in sunlight, completely water soluble and easy to apply with excellent environmental features such as rapid soil binding (resistance to leaching) and biodegradation (decreased persistence).

The primary effect of glyphosate is the interruption of the shikimic acid pathway.

The production of EPSPS (5 enolpyruvylshikimate-3-phosphate synthase) is inhibited by glyphosate. This ensures that plants are unable to manufacture essential amino acids, which ultimately leads to their death.

Environmental conditions affect plant function and growth, so the final level of weed control can be greatly influenced by environmental conditions and other stress factors. Applications on non-stressed plants under good environmental conditions is critical to ensuring the success of any Roundup brand herbicide application.

Similar to any commercial application of Roundup brand herbicides, ensure broadleaf weeds have at least one true leaf and grasses two true leaves before application of Roundup Ready Herbicide with PLANTSHIELD by Monsanto.

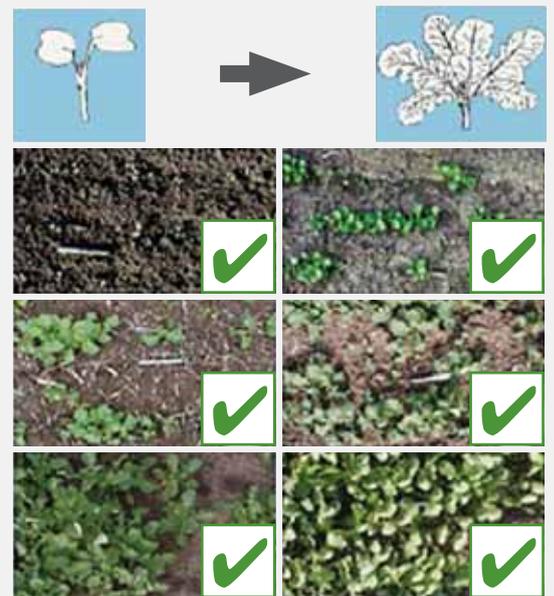


Applying Roundup Ready Herbicide with PLANTSHIELD by Monsanto twice

Up to two applications of Roundup Ready Herbicide with PLANTSHIELD by Monsanto can be made to a Roundup Ready canola crop, provided these following conditions are met:

- Each application must be 0.9 kg/ha.
- For TT-RR canola do not tank mix with atrazine for over the top application.
- Both applications occur within the correct timing window (up until the six leaf stage and prior to reproductive development).
- The applications are at least 14 days apart or with incremental growth of at least two new leaves between applications.
- Roundup Ready Herbicide with PLANTSHIELD by Monsanto should be applied alone or can be mixed with clopyralid®, Astound® Duo and Nufarm Dimethoate.
- Ensure droplets produced are of a COARSE spray quality to minimise the risk of off target movement.

Safe application of Roundup Ready Herbicide with PLANTSHIELD by Monsanto



- Applications must be made in accordance with the Roundup Ready Herbicide with PLANTSHIELD by Monsanto label, which can be accessed at www.monsanto.com/global/au/products/Pages/roundup-ready-herbicide.aspx.



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Reasons for making two applications of Roundup Ready Herbicide with PLANTSHIELD by Monsanto

The reasons for spraying twice are to optimise weed control at two different timings and can be considered as follows:

- Yield Spray: minimise competition on the crop by early removal of weeds.
- Seed Set / Sample Quality Spray: minimise grain sample contamination and weed seed set by spraying at the latest opportunity to control any weeds that germinate following the first spray application.

Brassica weeds especially are very strong competitors and can be more vigorous than canola, particularly at the seedling stage. Early removal of these weeds minimises their competitive effects, ensuring they do not deprive the crop of moisture, nutrients and light.

Another important characteristic of brassica weeds is their effect on the canola grain sample quality. In particular, brassica weeds can contain high levels of erucic acid and glucosinolates which have detrimental effects for human consumption. It is therefore important to delay the second application of Roundup Ready Herbicide with PLANTSHIELD by Monsanto until the latest practical timing (six leaf stage) to control any brassica weeds that may have germinated after the initial spray application.

The key brassica weed species is wild radish (*Raphanus raphanistrum*), it can germinate after the first spray application is made and therefore to achieve adequate control a second application is generally necessary.

When not to apply Roundup Ready Herbicide with PLANTSHIELD by Monsanto



If the crop has begun reproductive development (ie. from stem elongation and/or bud initiation onwards) do not apply Roundup Ready Herbicide with PLANTSHIELD by Monsanto

SUMMARY

- Roundup Ready Herbicide with PLANTSHIELD by Monsanto is an easy to use dry formulation that does not require an additional surfactant.
- Roundup® herbicides are safe, well known and trusted for over 30 years.
- Target spray applications to actively growing weeds, with broadleaf weeds ideally having at least one true leaf and grasses two true leaves.
- Up to two applications of Roundup Ready Herbicide with PLANTSHIELD by Monsanto can be applied provided they are separated by at least 14 days and at least two new true leaves.
- When Roundup Ready Herbicide with PLANTSHIELD by Monsanto is sprayed according to the label, the tolerance of Roundup Ready canola is excellent.
- Aim to produce a COARSE spray quality.
- The highest levels of weed control (especially on the key weed wild radish) are achieved when two in-crop applications of Roundup Ready Herbicide with PLANTSHIELD by Monsanto are made.

For further information visit www.roundupreadycanola.com.au, contact your Roundup Ready canola Technology Service Provider (TSP) or Sinochem Australia at sinochem.com.au



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