



NORTHERN

MARCH 2016

GRDC™ **GROWNOTES™**



GRDC™

GRAINS RESEARCH
& DEVELOPMENT
CORPORATION

SOYBEAN

SECTION 11

CROP DESICCATION / SPRAY OUT

SECTION 11

Crop desiccation/spray out

More information

[GRDC Fact Sheet Pre Harvest herbicide use](#)

Desiccation prepares the crop for harvesting by removing moisture from plants and late maturing areas of the paddock.

Desiccation is an aid to a timely harvest, particularly where uneven ripening occurs across a paddock. It enables a timely harvest to avoid weather damage. Application timing is based on the crop when the grain is 75% to 90% mature, to avoid reducing the quality of the harvested grain.¹

Growers aiming to maintain or improve grain quality, or simply speed up the harvest, may wish to desiccate the crop. Some crops are slow to drop leaves and some localities are prone to wet weather at harvest, which reduces yield through shattering or weathering damage.

Excessive weed growth can delay harvest and cause green staining on culinary beans during thrashing.

Two chemicals are registered for desiccation of soybean crops, namely diquat (Reglone®) and glyphosate (not all product labels are registered for this use and not for seed soybeans). Reglone® is generally the preferred product to gain maximum advantage in dry down and quicker responses on weed growth. Generally, experience has shown that using the higher recommended rates of Reglone provides the most efficient results.

Beware of potential drift damage to neighbouring crops. Damage is usually only of a cosmetic nature but it is a significant concern for vegetable crops.²

Crop desiccants/harvest aids like Reglone® or Weedmaster Argo/DST are commonly needed in coastal areas and other seasonally humid areas to manage weeds, hasten leaf drop and facilitate uniform harvest conditions. Weigh up the costs of a desiccating operation on crop damage and losses due to running down some of the crop. Speak to an agronomist experienced in desiccation of soybeans when deciding when and how to desiccate.³

The application of herbicides late in the season to prevent weeds setting seed or to desiccate crops must be carried out with caution and in line with herbicide label recommendations. It is essential to check if these practices are acceptable to buyers, as in some situations markets have extremely low or even zero tolerance to some pesticide and herbicide residues.

There are three reasons to apply non-selective herbicides late in the season: just prior to harvest to manage late season weeds; in-crop spray topping of annual ryegrass to prevent seed set; and for pre-harvest desiccation of the crop to accelerate or even-up ripening to assist with harvest.

¹ Pulse Australia, APB desiccation and croptopping: <http://www.pulseaus.com.au/growing-pulses/publications/desiccation-and-croptopping>

² QLD DAFF Harvest and Drying <https://www.daf.qld.gov.au/plants/field-crops-and-pastures/broadacre-field-crops/soybeans/harvesting-and-drying>

³ Australian Oilseeds Federation (2013), Better Soybeans manual http://www.australianoilseeds.com/soy-australia/Soybean_Production

Glyphosate, diquat and paraquat are registered for late season uses in many pulse crops (Table 1). Pulse registrations and withholding periods vary between product labels.⁴

Table 1: Product registrations for pre-harvest weed control and desiccation vary by crop type.

Always check product labels (Note: paraquat/diquat products, for example spray.seed® are not registered for pre-harvest weed control or desiccation). (Source: GRDC, <http://www.grdc.com.au/GRDC-FS-PreHarvestHerbicide>)

Crop	Paraquat	Diquat	Glyphosate
Wheat	<p>Paraquat is not registered for:</p> <ul style="list-style-type: none"> in-crop spray topping; pre-harvest crop desiccation; pre-harvest weed control. <p>DO NOT USE PARAQUAT PRODUCTS FOR THESE USE PATTERNS</p> <p>These use patterns are unregistered.</p>	<p>Pre-harvest weed control (all states): Spray as soon as the crop is mature and ready for harvesting. Under wet spring conditions crops can periodically become infested with weeds which seriously interfere with harvest operations. Diquat will control these weeds allowing for efficient harvest.</p> <p>WHP: NOT required when used as directed.</p>	<p>Not all glyphosate formulations are registered for this use. Apply to mature crop from late dough stage (28 per cent moisture) onwards. The higher rate will be required when crops are heavy and leaf shading effects may occur.</p> <p>DO NOT use on crops intended for seed or sprouting. Where wheat is grown in rotation with any herbicide-tolerant crop, management should be consistent with implementation of any management plan for herbicide-tolerant crops.</p> <p>WHP: DO NOT harvest within 7 days of application.</p> <p>Only weedmaster®DST® can now be applied at higher use rates in wheat with a 5-day harvest withholding period.</p>
Barley	<p>Paraquat is not registered for:</p> <ul style="list-style-type: none"> in-crop spray topping; pre-harvest crop desiccation; pre-harvest weed control. <p>DO NOT USE PARAQUAT PRODUCTS FOR THESE USE PATTERNS</p> <p>These use patterns are unregistered.</p>	<p>Winter cereals – pre-harvest weed control (all states): Spray as soon as the crop is mature and ready for harvesting. Under wet spring conditions crops can periodically become infested with weeds which seriously interfere with harvest operations. Diquat will control these weeds allowing for efficient harvest.</p> <p>WHP: NOT required when used as directed.</p>	<p>Glyphosate is not registered for:</p> <ul style="list-style-type: none"> in-crop spray topping; pre-harvest crop desiccation; pre-harvest weed control. <p>DO NOT USE GLYPHOSATE PRODUCTS FOR THESE USE PATTERNS</p> <p>These use patterns are unregistered.</p>
Canola	<p>Paraquat is not registered for:</p> <ul style="list-style-type: none"> in-crop spray topping; pre-harvest crop desiccation; under-the-cutter-bar spraying during swathing or windrowing activities; pre-harvest weed control; spraying over the top of swaths or windrows <p>DO NOT USE PARAQUAT PRODUCTS FOR THESE USE PATTERNS</p> <p>These use patterns are unregistered.</p>	<p>Pre-harvest crop desiccation (all states):</p> <p>Spray when 70 per cent of the pods are yellow and the seeds are brown or bluish and pliable. Canola ripens unevenly and is prone to pod shatter and seed loss. Direct harvest four to seven days after spraying.</p> <p>WHP: DO NOT harvest for at least 4 days after application.</p>	<p>Only weedmaster®DST® is registered for pre-harvest use in canola.</p> <p>Apply to mature standing crop from early senescence (minimum of 20% seed colour change to a dark brown/black colour from within the crop) prior to windrowing or direct harvest. Use the higher rate when crops or weeds are dense and/or where faster desiccation is required.</p> <p>DO NOT use on crops intended for seed</p> <p>DO NOT harvest for 5 days after application to standing crops DO NOT overspray windrows</p> <p>DO NOT apply to standing crops and again at the time of windrowing</p> <p>Refer to the complete weedmaster®DST® label and critical comments section.</p>

⁴ GRDC (2015) Preharvest Herbicide Use fact sheet: <http://www.grdc.com.au/GRDC-FS-PreHarvestHerbicide>

Crop	Paraquat	Diquat	Glyphosate
Chickpeas Faba beans Field peas Lentils	Spray topping to reduce seed set – annual ryegrass (all states).	Pre-harvest crop desiccation (all states):	Not all glyphosate formulations are registered for these uses.
Pigeon peas+ Lupins@ Vetch#	Chickpeas/Faba beans/Field peas/Lentils/Lupins/ Vetch: Spray the crop when the ryegrass is at the optimum stage, that is when the last ryegrass seed heads at the bottom of the plant have emerged and the majority are at or just past flowering (with anthers present or glumes open) but before haying off is evident – usually October to November.	Dry beans/Dry peas/Pigeon peas/ Lentils/Chickpeas/Faba beans/ Lupins/ Soybeans/Mungbeans: Mungbeans: Apply when 80 to 90% of pods are black or brown. Soybeans: Spray when 80% of the pods are yellow-brown and the seeds are ripe - yellow and pliable.	Field peas/Faba beans: Pre-harvest application to reduce viable seed set of annual ryegrass. Adzuki beans/Chickpeas/Cowpeas/Faba beans/Field peas/ Lentils/Mungbeans/ Soybeans: Pre-harvest application to desiccate a crop as a harvest aid and weed control – annual weeds.
Adzuki beans^ Cowpeas^ Mungbeans~ Soybeans~	Use of the higher rate in these crops is usually more reliable and gives a greater reduction in seed set. Reduction in crop yield may occur especially if the crop is less advanced relative to the ryegrass; that is, if crops have a majority of green immature pods. The higher rate may also increase any yield reduction. In practice crop losses in excess of 25 per cent may occur. WHP: DO NOT harvest for 7 days after application.	Helps overcome slow and uneven ripening and weed problems at harvest. WHP: NOT required for dry beans, dry peas, mungbeans when used as directed. Lentils/Chickpeas/Faba beans: DO NOT harvest for 2 days after application. Pigeon peas, Soybeans: DO NOT harvest for 4 days after application.	Chickpeas: Glyphosate + metsulfuron tank mix for pre- harvest application as harvest aid and weed control – annual weeds. WHP: DO NOT harvest within 7 days of application. Refer to label for specific timings. DO NOT use on crops intended for seed or sprouting.

Paraquat only ^ Glyphosate only + Diquat only ~ glyphosate and diquat only
 @ Paraquat products and diquat only
 WHP withholding period
 ® Registered trademark

Growers should consider the following prior to the selection and application of desiccant products:

- The advantages of using a harvest aid product include potentially better harvested seed quality, earlier harvest and/or increase harvesting efficiency. However, an improvement in overall yield potential is not an expectation.
- Pre-harvest herbicides do not speed up maturity, or make soybean seed dry down faster; they only serve to drop remaining leaves and dry out green material. A harvest aid may facilitate the drying of pods, making them easier to harvest.
- Desiccants can reduce green vegetation, but do not help remove excessive moisture from the seed. The addition of sodium chlorate to a desiccant can help to remove excessive moisture from green soybean tissue and/or seed, and provide control of weeds.
- If possible, avoid applying desiccant just before rain.
- Harvest the desiccated soybean crop as the label allows.⁵

⁵ AgKnowledge Spotlight, Soybean Harvest Aids: <http://www.aganytime.com/Documents/ArticlePDFs/Soybean%20Harvest%20Aids%20-%20Asgrow%20-%20Spotlight.pdf>