Windrowing, crop topping & desiccating canola

As canola approaches maturity, choosing how to prepare the crop for harvest can make a substantial difference to yield, oil content, harvest efficiency and weed seed set control. Windrowing, crop topping and desiccating each offer different benefits, but their success depends on selecting the right strategy for the variety and paddock conditions, and applying it at the correct stage of seed colour change.

SUITABILITY OF HARVEST METHODS

There are two different ways to harvest canola; either cutting the canola before it is fully mature with a windrower and picking it up with the header (windrowing), or harvesting a standing, mature crop (direct heading). Each method has their strengths and weaknesses, and are suited to different scenarios. Ultimately, the choice between windrowing or direct heading can be influenced by contractor availability, pick up front access, labour, cost or harvest timing.

Windrowing is used to promote uniform crop maturity, which often allows the crop to be reaped earlier, promotes improve harvestability and reduces the risk of losses from weather (e.g. wind, hail). It can be used for this purpose in all types of canola varieties, and is the recommended strategy to 'even up' glyphosate tolerant varieties, because desiccating with glyphosate won't have brown out activity.

Windrowing does not stop weed seed set, so paddocks with late germinated ryegrass ideally should be crop topped with glyphosate before the ryegrass sets seed. Alternately, you could instead wait to spray under the cutter bar at windrowing time, but the ryegrass may be too mature to be effective. If windrowing canola, remember that the remaining stalk/stubble is still green, so regrowth control needs to be considered. This can be achieved through crop topping non-glyphosate tolerance varieties, spraying under the cutter bar or a post-harvest knockdown spray.

Direct heading has previously been more common in lower yielding environments as small windrows can be unstable in wind, but it is increasingly common in higher yielding regions due to improve pod shattering tolerance. It is less labour intensive as it only requires the one harvest pass, doesn't use specialised equipment and is generally cheaper than windrowing. Delaying the direct heading of canola can increase exposure to weather damage, so considering your broader harvest program and what other crop types could conflict with ideal direct heading timing.

Since crops must be fully mature before direct heading, a crop topping or desiccation pass may be required if there is uneven maturity across the paddock. The appropriate strategy depends on the type of canola varieties and if there's ryegrass to control too. See more details on crop topping and desiccation below.

Table 1. Summary of canola harvest methods.

Consideration	Windrowing	Direct heading
Best suited to	Uneven crops that require more uniform maturity, and easy access to contractor	Paddocks that can be crop topped or desiccated, and no conflicting harvest pressure
Canola variety	Suitable for all varieties, particularly glyphosate tolerant canola	Most suited to varieties with good pod shatter tolerance
Harvest timing	Often enables earlier harvest	Requires the crop to reach full maturity
Weather risk	Reduces risk from late wind and hail events	Longer exposure to weather before harvest
Cost	Higher operational cost	Generally lower cost

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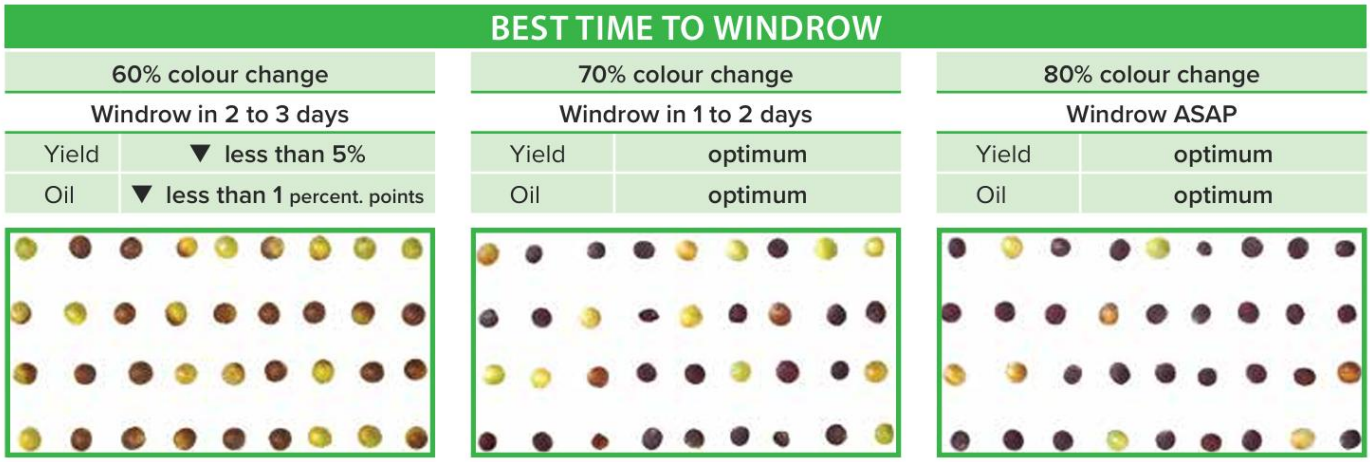
Windrowing timing – don't go too early!

Windrowing normally starts 20–30 days after the end of flowering. Windrowing on time is important to maximise yield and oil content. In seasons with good soil moisture at windrow timing, there can be significant yield and oil gains by delaying windrowing.

The usual recommended windrow timing is when minimum 60% of seeds have changed colour (from green to red, brown or black). However, it is ideally best to wait until 70-80% seed colour change (see 'Sampling Protocol' below to gauge the % of colour change). This will happen later than you think! Often at 70-80% seed colour change, you'll see some 'feathering', which is the slight pod shattering of some earlier pods. This isn't a bad thing and indicates it's time for windrowing.

The yield and oil benefits gained from holding off windrowing until 80% seed colour change are expected to outweigh any losses from pod shattering, although the shattering can be more visual. Even a 0.2t/ha yield gain at current prices ($800/t), plus bonuses for improved oil, can add $160/ha to the bottom line.

Figure 1. Optimum windrow timing this year is 80% seed colour change (seed far right of image)



Source: GRDC's 'Windrow on Time, Reap the Reward$'

Spraying under the cutter bar

An application of glyphosate under the cutter bar while windrowing canola is encouraged to prevent regrowth, if you/your contractor is set up to do this. It typically saves a pass after harvest. This will only work with non-glyphosate tolerant varieties. No harvest withholding period applies.

Spraying under the cutter bar usually doesn't help prevent seed set of ryegrass because the ryegrass is either at or too close to full maturity. To target ryegrass, it is better to crop top with glyphosate at 20% seed colour change (see below). However, if spraying glyphosate under the cutter bar is your only last line of defence against ryegrass, it can be done in any canola variety, except OptiGly® varieties.

CROP TOPPING

Crop topping canola with glyphosate is used as one of the last tactics to stop weed seed set, typically targeting ryegrass, but could also include wild radish, milk thistle and other weeds. Both timing and herbicide application are important to achieve this. This strategy should not be relied upon to even up the maturity of canola (this is typically referred to as desiccation), regardless of herbicide tolerance, because it moves through the plant too slowly. There's a better chance of helping the dry down process in a non-glyphosate tolerant canola, if it's applied early at 20% seed colour change.

Almost any canola variety can be crop topped, because the goal is to stop seed set of late germinating, glyphosate susceptible weeds and has nothing to do with the canola. The only exception is canola hybrids with the OptiGly®

herbicide tolerance trait, as a pre-harvest/cutting application of glyphosate is not permitted. Glyphosate applications on OptiGly® varieties must cease after 10% flowering, regardless of how much glyphosate has been applied. For all other canola varieties with glyphosate tolerance, a pre-harvest application of glyphosate is allowed in addition to the in-crop applications

Timing

Optimal timing for crop topping with glyphosate is at 20-30% colour change of seeds in pods (from green to red, brown or black). There is no effect on yield or oil content when applied from 20% seed colour change onwards. This early timing is also important to target ryegrass before it sets seed. Direct harvest must not occur until five days after glyphosate application to a standing crop.

Although you could spray glyphosate over a glyphosate tolerant crop before 20% seed colour change and not compromise crop safety, it would risk exceeding the MRL and is not permitted.

Product options

Glyphosate crop top products	Rate (L/ha)	WHP (days)
Weedmaster® DST 470	1.4–4.1	5
Roundup® UltraMax	1.2–3.4	7
Crucial® 600	1.1–3.2	5
Weedmaster Argo 540	1.2–3.6	5

Application

The key in crop topping is to get the herbicide (in this case glyphosate) to penetrate through the canopy, to ensure maximum grass coverage. Optimum canola yields for effective crop topping are in the range of 1–1.5t/ha. Beyond this, it is difficult to penetrate the canopy to reach weeds. The following factors are key to successful crop topping;

- Water rate of 80–100L/ha for ground-based sprayers, and 30-40L/ha for aircraft
- Large droplet size
- Higher herbicide label rates for dense canopies
- Ensure the harvest WHP of 5 days has lapsed
- Add AMS @ 1–2% and Li700® @ 0.3–0.5%

DESICCATING

The aim of desiccating differs in that of crop topping, with the aim more focused on even and faster ripening, rather than grass weed control. Chemical desiccation is an alternative to windrowing and very effective where crops have lodged or where weeds have emerged in maturing crops. The only product registered for desiccating canola is diquat (Reglone®) at 1.5–3L/ha. This strategy is effective for all canola variety types, including glyphosate tolerant varieties (e.g. Roundup Ready®, Truflex® and OptiGly®).

Diquat update

In June 2026, the APVMA announced that the registration for diquat as a pre-harvest desiccant will cease. There is a 2 year phase out period, so we can continue to use existing stock with the old label on it as we usually would until June 2028.

Timing

Optimal timing is when 70% of the pods are yellow and seeds have changed colour from green to brown inside the pod. There is a harvest withing period (WHP) of 4 days.

Considerations

Considerations when using diquat:

- Reglone® provides poor grass control (approximately 30% at best).
- Broadleaf control is good, as long as coverage is adequate.
- Desiccating canola with Reglone® can make the pods brittle and more prone to shattering. A combination of strong winds and brittle pods can result in yield loss. Be mindful of the weather conditions before desiccating.
- Harvest WHP is four days after application.
- Crops are generally ready for direct harvesting four to seven days after spraying.

SAMPLING PROTOCOL

Estimating the proportion of seeds in pods that have changed colour from green to red, brown or black is an important skill to decide if it's the correct time to windrow, crop top or desiccate. In recent years, research has shown that majority of canola yield comes from branches, not the main stem. However, the whole plant doesn't mature at the same rate. Therefore, it is important to collect majority of pods from the branches to more accurately gauge seed colour change, as it can affect yield. Crop maturity can also vary across a paddock, depending on topography, soil type, crop nutrition and plant population. The GRDC resource 'Canola – Windrow on Time, Reap the Reward$' has more info.

DEALING WITH GREEN STALKS AND CANOLA REGROWTH POST-HARVEST

If paddocks weren't sprayed under the cutter bar at windrowing, or were not desiccated, make sure you are quick to spray green canola stubble and regrowth post-harvest. Canola plants have a deep tap root and can drain moisture from the profile if left to grow over summer.

For non-GM canola

- 1% AMS
- 1.5L/ha Glyphosate 450
- 350ml/ha 2,4-D LVE 680 (or 500ml/ha Amicide Advance®)
- 0.25% Li700

For glyphosate tolerant canola (e.g. RoundUp Ready®, Truflex® or OptiGly®)

If only chasing canola regrowth:

- 1-2L/ha Amicide Advance®, increase rate based on regrowth size

If small grass weeds are present:

- 5g/ha Ally® (if not an imi-tolerant variety)*
- 920ml/ha Paraquat 250 (new label rate)
- 30ml/ha Hammer 400 EC® or 17g/ha Sharpen®

If large grass weeds are present:

- 1% AMS
- 5g/ha Ally® (if not an imi-tolerant variety)*
- 1.5L/ha Glyphosate 450
- 400ml/ha 2,4-D LVE 680 (or 500ml/ha Amicide Advance®)
- 0.25% Li700

**Addition of Ally® should only be used on paddocks destined for wheat, barley, Clearfield® canola and imi tolerant pulses next season.*