

Using Harvest Aids and Minimizing Harvest Loss in Carinata Production

Harvest aids are used to accelerate carinata harvest maturity, improve crop uniformity, and desiccate weeds and green tissue (pods, stems). Using harvest aids may also result in increased harvest efficiency and reduce potential shatter loss which may or may not occur depending on weather.

Carinata has a high level of resistance to pod shattering, however, timing, proper machine adjustments, and harvest methods are critical for optimum yield and quality. In the SE, harvesting can be delayed due to continuous erratic wet periods in late spring. Green stems, weeds and uneven ripening can also hinder optimum harvest. The application of harvest aids enables uniform crop ripening by drying down all green vegetative growth. To optimize yield and seed quality, the crop must be physiologically mature before harvest aids are applied.

Carinata seed is physiologically mature when the seed color changes from green to light green. Leaf, stem or pod color change may not be predictors of physiological maturity. Normal seed desiccation progresses rapidly, indicated by a drop in moisture content from 50% to 10 % in 4 weeks. A harvest aid can be applied when >70% of the seeds are physiologically mature. At this time, the upper branches and pods will be brown, however, the main stem may remain slightly green.

Harvest aids are suggested but not required

Reglone (diquat dibromide) and Sharpen (saflufenacil) are labeled for use on Carinata as harvest aid desiccants.

Reglone is a contact herbicide that is activated by light reactions in the plant. When applied on sunny days, Reglone is activated as soon as the product comes in contact with the plant surface. It is recommended to apply Reglone in the evening or on cloudy days to allow the active ingredient to cover the plant surface for improved efficacy (quicker burn and dry down). Efficacy will be maximized with highest volumes of water that is feasible (20 gallons/acre or more but will work with lower rates).



Another option is Sharpen that has a mode of action similar to Reglone but is also translocated. Similar to Reglone, allow up to 7 days for optimum desiccation effect depending on environmental conditions.

When the moisture content < 10%, carinata may be combined using the machine settings and screens for rapeseed outlined in the operator's manual and fine-tuned for conditions in the field.

Table 1. Registered harvest aids for canola. Do not apply harvest aids when the crop is before or past the recommended stage of maturity. The plant must be physiologically mature before a harvest aid can be applied. Always read and follow the pesticide label directions.

Harvest aid	Rate	Application volume	Timing	Notes
Reglone (diquat dibromide)	24 - 30 fl. oz/acre	For ground application use a minimum spray volume of 20 gal/acre and by air a minimum spray volume of 5 gal/acre.	Physiological maturity	Use higher rates when canopy is very dense and/or weed infestation is high. Always add a nonionic surfactant (NIS) comprising 75% or greater surface active agent at 0.06-0.5% v/v (½-4 pts. per 100 gals.) of the finished spray volume.
Sharpen (saflufenacil)	1.0 – 2.0 fl. oz/acre	For ground application use a minimum spray volume of 10 gal/acre and by air a minimum spray volume of 5 gal/acre	Physiological maturity	Thorough spray coverage and a methylated seed oil (MSO, 1 gal/100 gals (1% v/v) plus ammonium-based adjuvant system [ammonium sulphate, 8.5 to 17 lbs/100 gals (1% to 2% w/v) or urea ammonium nitrate, 1.25 to 2.5 gals/100 gals (1.25% to 2.5% v/v)] are required for optimum desiccation activity. Do not use less than 1 pint/acre of MSO with low-volume (less than 12.5 gals per acre) aerial or ground application. Do not use NIS as a substitute for MSO.

Disclaimer: The use of trade names in this publication is solely for the purpose of providing specific information. SPARC does not guarantee or warranty the products named, and references to them in this publication do not signify our approval to the exclusion of other products of suitable composition. All chemicals should be used in accordance with directions on the manufacturer's label.

Optimizing Harvest

Optimized harvest methods will reduce seed loss that occur at the combine header, seed leaks, loss during threshing, separating, or cleaning. To minimize harvest seed loss, monitor and quantify the seed loss behind the combine and adjust the combine settings to crop and field conditions to reduce these losses.

How to minimise harvest losses?

1. Application timing of harvest aid should be optimized to minimize loss of seed yield.
2. The weather forecast and condition of the crop are important factors to consider when applying harvest aids. Harvest aids will need about 7 - 10 days to be effective. Plan on harvesting as soon as the seed moisture is 10% or less. Seeds will deteriorate if allowed several cycles of wetting and drying.
3. Use the machine settings for rapeseed outlined in the operator's manual. Settings will have to be adjusted and fine-tuned depending on crop moisture and harvest conditions. It is essential to have the proper screens and combine settings to reduce dockage and loss of seed. An example of average recommended John Deere S-Series Combine setup for canola (deere.com) is:
 - a. Feederhouse Chain Speed – 26T
 - b. Feederhouse Drum Down
 - c. Feed Accelerator on High Speed
 - d. Serrated Feed Accelerator Wear Strips are recommended
 - e. Backshaft Speed – 510rpm / 1st Gear 5 Speed
 - f. Cleaning Fan speed – 750rpm, 600-900 working range
 - g. Rotor Speed – 450rpm, 350-550 working range
 - h. Concave Clearance – 20, 15-40 working range
 - i. General Purpose Chaffer – 13mm, 10-14mm working range
 - j. High Performance Chaffer if equipped – 12-16mm + increase fan 100rpm
 - k. Dual Zone Chaffer – manual adjust 5mm Level Land/10mm Hills
 - l. General Purpose Sieve – 3mm, 2-5 working range
 - m. Match reel speed with ground speed. Set fingers straight up and down to minimize wrapping.
4. Cut carinata as high as possible, just below the seed pods, to minimise the amount of biomass to be threshed. Pulverized high moisture residue or straw may fall onto the sieves thereby reducing the air flow and separation while increasing the seed loss.
5. Check periodically for seed loss behind the combine and adjust settings if necessary for optimized harvest.