
Weed Control in Conventional Sunflowers



Limited herbicide options exist in conventional sunflowers for in-crop weed control for broad-spectrum coverage on both grassy and broadleaf weeds. Manufacturing of imazamethabenz-containing herbicides Assert 300SC (NuFarm) or Avert (Loveland Products) has stopped, and reduced the number of tools available to manage weeds in conventional sunflowers, notably for volunteer canola.

Integrated Weed Control Strategies

Without access to Assert/Avert, sunflower growers should look to control or suppress weeds in-crop via a number of cultural and mechanical strategies, in addition to herbicide options. Group 1 graminicide herbicide options are still widely available, including clethodim products, Poast Ultra and Assure II.

Field Selection

Choose fields that have a good history of weed control, and low weed populations particularly for pigweeds, volunteer canola, and cocklebur. Sunflowers will perform best if grown on well-drained soil, allowing quick growth and canopy closure. Prepare intended sunflower fields ahead of time with a pre-emergent herbicide.

Pre-emergent Herbicide

All sunflowers benefit greatly from having a clean field to start the growing season. Pre-emergent herbicides, either liquid or granular, are very useful in controlling or suppressing weeds during the critical weed-free period. Consider applying one or more of Edge, trifluralin products, or Authority brand herbicides to improve early season weed control of tough-to-manage pigweeds, lamb's quarters, kochia, and foxtail species.

Over-harrowing

Research done at North Dakota State University (Carrington) showed that two passes using a spring-tooth harrow (not diamond tooth), done at V4 to V6 stages, can successfully reduce broadleaf weed competition by 73 to 80 per cent. Crop damage is expected, with losses range from five to eight per cent stand reduction per pass. Harrowing along the rows limits wheel damage, but diagonal passes disturb more emerging weeds in the crop furrow.

Harrow on a warm, clear day to limit sunflower damage by allowing them to bend instead of snap. Younger or older plants can be more severely damaged. Harrows must be kept clear of field residue to limit crop damage. Harrow depth should be set no deeper than 1.9 cm or 0.75 in., and speed kept under six miles per hour.

Muster Toss-N-Go Herbicide

Muster Toss-N-Go broadleaf herbicide is the only available in-crop registered product for broadleaf weed control in conventional sunflowers. Muster Toss-N-Go, like imazamethabenz, is a Group 2 herbicide. It is registered for control of wild mustard, flixweed, hemp-nettle, smartweed (Lady's thumb), stinkweed, and suppression of redroot pigweed. It will not have an effect on volunteer canola.

Sunflowers must be between V2 to V8 stages, or between six to 18 in. tall (15 to 45 cm). Check the Manitoba Crop Alliance [sunflower staging guide](#) for assistance. Consult the product label and the [Guide to Field Crop Protection](#) for more details. Late applications of Muster can cause significant injury, flower bud deformation and reduced seed yield. Losses are amplified under drought, or hot and humid conditions.

Inter-row Cultivation

Inter-row tillage is a tried and true way to kill weeds between the planted rows. Caution is needed with soil moisture conditions, to reduce soil compaction and 'cultivator blight'. Cultivating between sunflower rows early in the season helps disrupt small and germinating weeds and is recommended before V12, to reduce root pruning and 'cultivator blight.' Ideal stage for cultivation is V6 to V10 (up to approx. 12 in. in height). Producers may wish to delay an in-crop tillage to take full advantage of any pre-emergent herbicides, if fields are staying relatively clean.

Waiting seven to 10 days between spraying and a tillage pass is necessary for herbicide activity to take effect. S-tine or similar row-crop cultivator are most often set up for 30 in. row spacing. Rotary hoe tillage may also be used.

Pre-harvest Desiccant

Since limited herbicide options exist for conventional confectionary (and oilseed) sunflowers, expect weed regrowth throughout the growing season. If weed material is still green just ahead of harvest, consider applying a pre-harvest aid to help dry down the sunflower crop, and kill any remaining weeds.

Contact Us

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Rolling guard cultivator in sunflowers

Follow-up tillage control for additionally emerged weeds may be required. Inter-row tillage should be set to have cultivator shanks running between the rows, and not touching plant leaves, since lateral roots typically extend to the tips of the largest leaves. Sunflower lateral root systems are sensitive, and excessively wide or deep tillage can damage growth ability and yield for the crop.