



SUNFLOWER HERBICIDE OPTIONS

Sunflower Herbicide Options

Weed control in sunflower begins with placing sunflower in a rotation where warm-season broadleaf weeds are easily and well controlled in the previous crop. Sunflower is usually planted at lower densities than many other crops and grows slowly during the first two to three weeks. Weeds that emerge and establish during this time can be very competitive and reduce sunflower yield potential tremendously; however, sunflower is a strong competitor with weeds that emerge three or more weeks after sunflower emergence. Therefore, maintaining sunflower weed free for the first three to four weeks after planting will minimize yield losses from weeds.

Pre-Emergence Herbicides

Soil-applied herbicides available for use in sunflower are EPTC (Eptam®), ethalfluralin (Sonalan®), S-metolachlor (Dual Magnum®), pendimethalin (Prowl H2O® and others), sulfentrazone (Spartan®) and trifluralin (Treflan® and others). Eptam, Sonalan and Treflan require mechanical incorporation soon after application. Prowl requires incorporation with tillage or rainfall within seven days of application, or performance will suffer. Although there are many benefits to growing sunflower in no-till or reduced-tillage systems, cheap, effective, and consistent weed control is most easily achieved with pre-plant incorporated herbicide treatments.

With the exception of Spartan, soil-applied herbicide primarily control grassy weeds with foxtail. All these herbicides provide some control of small-seeded broadleaf weeds such as pigweed and lamb quarters. At high use rates, they also can control kochia and Russian thistle. Spartan provides control of pigweed species, kochia, Russian thistle and lambs quarters. Spartan should be tank mixed with a herbicide that will control grasses to obtain optimum weed control. Some crop injury has been reported from using Spartan. The injury is typically restricted to high pH, low organic matter soils and consists of leaf chlorosis, plant stunting and occasionally plant death. Injured plants generally grow out of the injury with a few weeks and yield differences are minimal at harvest.

Post-Emergence Herbicides

Imazamox (Beyond®) is labeled for use only in CLEARFIELD® sunflower hybrids. CLEARFIELD sunflower hybrids contain a gene that confers tolerance, not resistance, to Beyond herbicide. Some slight crop injury (leaf yellowing and plant stunting) may be observed following Beyond herbicide application to CLEARFIELD sunflower hybrids, especially where over-application occurs such as in spray overlaps of field ends. Injured plants often recover quickly. Non-CLEARFIELD hybrids are killed if treated with Beyond herbicide.

Beyond herbicide should be applied early post-emergence at a rate of 4 oz of product per acre to sunflower with two to eight leaves. Weeds should be actively growing at the time of application and broadleaf weeds should be less than 3 inches tall. Grass weed should have no more than four to five leaves. A nonionic surfactant and nitrogen-bases fertilizer must be added to the spray solution for optimum weed control. It is recommended that a soil applied grass herbicide, such as Prowl, be applied prior to the application of Beyond herbicide. Beyond herbicide will control many broadleaf weeds that are troublesome in sunflower fields including pigweed, kochia, Russian thistle cocklebur, and nightshade. Beyond inhibits ALS-AHAS synthesis in weeds and will not effectively control ALS-resistant kochia or Russian Thistle. There is also some concern about the risk of transferring the gene conferring tolerance to Beyond herbicide from commercial sunflower hybrids to wild sunflower. This technology should be avoided in fields where wild sunflower is present.

Tribenuron (Epress®) is labeled for use only in ExpressSun® sunflower hybrids. These hybrids contain a gene that confers tolerance to Express herbicide. Some slight yellowing or stunting may be observed after Express is applied to Express Sun hybrids, particularly if over application occurs. Injured plants often recover quickly. Express Sun hybrids are not cross resistant to ALS herbicides to ExpressSun hybrids will result in serious crop injury or death.

Apply Express herbicide to sunflower anytime from one-leaf stage but prior to bud formation when broadleaf weeds are less than three inches tall. Express does not control grass weeds or ALS-resistant weeds. Use a soil-applied or post-emergence grass herbicide if grass weeds are a concern. Apply Express with MSO-type oil adjuvants 1% v/v for best results. Express provides control or suppression of Canada thistle. As mentioned for Beyond, this technology should be avoided in field where wild sunflower is present.

Other Herbicides

The other post-emergence herbicides used in sunflower are sethoxydim (Poast®), quizalafop (Assurell ®, Targa®) and clethodim (Select®, SelectMax®). These herbicides control emerged grass weeds and volunteer small grains.