

SUNFLOWER

Herbicide	Product/A (ai/A)	Weeds	When to Apply	Remarks and Paragraphs
Refer to page 6 for Fall or Spring Early Preplant Herbicides.				
Refer to page 51 for additional herbicides to use in conventional or herbicide-resistant sunflower.				
Soil-Applied Herbicides				
Eptam (EPTC ⁸)	2.5 to 3.5 pt EC (2 to 3 lb)	Grass and some small seeded broadleaf weeds.	PPI.	No wild mustard control. PPI immediately after application. A1-2 B1 J1
Prowl Prowl H2O (pendimethalin ³)	2.4 to 3.6 pt 3.3EC 2.1 to 3 pt 3.8ACS (1 to 1.5 lb)		PPI.	Poor wild oat and no wild mustard control. Adjust rate for soil type. Refer to label for tank-mix options. A1-2 B1 B7 J1
	3 to 3.6 pt 3.3EC 2.7 to 3 pt 3.8ACS (1.25 to 1.5 lb)		PRE - 30 days before to 1 day after seeding.	Apply PRE for no-till sunflower only.
Treflan / generic trifluralin ³	1 to 2 pt EC 5 to 10 lb 10G (0.5 to 1 lb)		PPI.	PPI within 24 hours after application. Poor wild oat and no wild mustard control. Adjust rate for soil type.
Sonalan (ethalfluralin ³)	1.5 to 3 pt EC 5.5 to 11.5 lb 10G (0.55 to 1.15 lb)		PPI. Spring. Fall: From October 1 to December 31.	Use highest rate allowed for broadleaf weed control. A1-2 B1 B7 J1
	7.5 to 11.5 lb 10G (0.75 to 1.15 lb)			For reduced or conservation tillage: incorporate twice at 2 to 3 inches deep using a V-blade under-cutter or rotary hoe. For fall applications: incorporate once in the fall and once in the spring before seeding. A1-2 B1 B7 J1
Dual Magnum (S-metolachlor ¹⁵)	1 to 2 pt EC (0.95 to 1.9 lb)		Shallow PPI or PRE.	PPI improves consistency of control. PRE requires moisture for activation. A1-2 B1 J1
Spartan (sulfentrazone ¹⁴)	3 to 8 fl oz F (1.5 to 4 oz)	Small-seeded broadleaf weeds including kochia, lambsquarters, pigweed species, and b. wormwood.	EPP, shallow PPI, or PRE.	PRE requires precipitation for activation. EPP up to 30 days prior to planting improves likelihood of activation by moisture. Adjust rate for soil type, OM, and pH. Temporary sunflower injury may occur in coarse, low organic matter soils with pH greater than 7.8. May give 6 to 8 weeks residual weed control. BroadAxe may provide greater weed control as a premix product than activity from each herbicide. A1-2 B1 B4 J1-2
Spartan Charge (carfentrazone ¹⁴ & sulfentrazone ¹⁴)	3.75 to 7.75 floz SE (0.16 to 0.34 oz & 1.48 to 3.05 oz)			
BroadAxe XC Spartan Elite (metolachlor ¹⁵ & sulfentrazone ¹⁴)	20 to 32 fl oz EC (0.98 to 1.58 lb + 1.75 to 2.8 oz)	Annual grasses and small-seeded broadleaf weeds including kochia, lambsquarters, pigweed species, and b. wormwood.	EPP, PRE, or POST V1 to V8 sunflower.	Do not apply PPI. Do not apply at cracking or cotyledon stage. Do not tank mix with Beyond on CL sunflower.
Authority Edge (sulfentrazone ¹⁴ & pyroxasulfone ¹⁵)	4.4 to 11.7 fl oz SC (1.5 to 4 oz & 0.84 to 2.22 oz)			
Authority Supreme (sulfentrazone ¹⁴ & pyroxasulfone ¹⁵)	5.8 to 15.4 fl oz SC (1.51 to 4.0 oz & 1.51 to 4.0 oz)			
Zidua (pyroxasulfone ¹⁵)	1.75 to 6.5 fl oz SC (0.9 to 0.21 lb)			
POST-Applied Herbicides				
Assure II / Targa (quizalofop ¹)	7 to 12 fl oz EC (0.77 to 1.32 oz)	Annual grasses and quackgrass.	POST. Sunflower: Refer to PHI.	Add oil adjuvant at 1 gal/100 gal water but not less than 1.25 pt/A. Refer to label for tank-mix options.
Poast (sethoxydim ¹)	0.5 to 1.5 pt EC (0.1 to 0.3 lb)	Annual grasses.	Grass: Refer to soybean section on page 27.	Refer to Remarks in the POST grass herbicide section under Soybean for methods to avoid antagonism and reduced grass control from broadleaf herbicides. Allow a 70 day PHI. A3 A5-6 J1
Select Max 1EC Select 2EC Shadow 3EC (clethodim ¹)	9 to 16 fl oz EC 4 to 8 fl oz EC 2.66 to 5.33 EC (1 to 2 oz)	Annual grasses and quackgrass.		

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Preharvest Herbicides				
Glyphosate ⁹	Up to 0.75 lb ae See Remarks.	Preharvest weed control.	Prior to harvest. Backside of sunflower heads yellow and bracts turning brown at the shoulder. Seed moisture content under 35%.	Do not apply to sunflower grown for seed because reduced germination / vigor may occur. Use only registered formulations. Add AMS at 8.5 lb/100 gal. A4-8 B8
Paraquat ²² + NIS RUP	1.2 to 2 pt 2SL 0.8 to 1.3 pt 3SL (0.3 to 0.5 lb)	Desiccant.	PHI: glyphosate= 7 days paraquat = 7 days. Sharpen = 7 days. Valor = 5 days.	Contact herbicides require >15 gpa and full sunlight. Use paraquat on confectionery and oilseed sunflower varieties. Apply at >10 gpa for ground and >5 gpa for aerial application. Apply Sharpen and Valor with AMS at 8.5 to 17 lb/100 gal water or UAN at 2.5 gal/100 gal water and with glyphosate or paraquat for weed desiccation. Glyphosate improves weed control from Sharpen and Valor but antagonism may occur on biennial and perennial weeds. Do not graze or hay treated plants. Do not apply after multiple minor frosts or a single major frost. Do not apply Sharpen to sunflower grown for seed because reduced germination/vigor may occur. B11-12
Sharpen + MSO adjuvant, (saflufenacil ¹⁴)	2 fl oz SC + 1 to 1.5 pt/A (0.71 oz)			
Valor SX Valor EZ + MSO adjuvant (flumioxazin ¹⁴)	2 to 3 oz WDG 2 to 3 fl oz EZ + 2 p/A (1.02 to 1.53 oz)			

HERBICIDE RESISTANT SUNFLOWER

Refer to page 50 for additional herbicides to use in conventional or herbicide-resistant sunflower.

Clearfield Sunflower

Herbicide	Product/A (ai/A)	Weeds	When to Apply	Remarks and Paragraphs
Beyond (imazamox ²)	4 fl oz SL (0.5 oz)	Small annual broadleaf weeds including wild mustard and black nightshade. No ALS-resistant weed control.	EPOST. Sunflower: 2 to 8-leaf stage. Broadleaf weeds: Less than 3 inches tall. Grass weeds: Less than 4 to 5 leaves.	Apply only to Clearfield sunflower varieties. Add NIS at 1 qt/100 gal water + UAN at 2.5 gal/100 gal water or AMS at 8.5 lbs/100 gal. Do not add PO or MSO adjuvants or tankmix with Zidua. Refer to label for weeds controlled, adjuvant use, and tank-mix options. A3 A5-8 J3
	4 to 6 fl oz SL (0.5 to 0.75 oz)			Apply only to Clearfield Plus sunflower varieties. Clearfield Plus sunflower has increased tolerance to imazamox that allows higher herbicide rates and use of more effective MSO adjuvants. Add MSO at 1 to 1.5 pt/A + UAN at 2.5 gal/100 gal water or AMS at 12 to 15 lbs/100 gal.

Express Sun Sunflower

Herbicide	Product/A (ai/A)	Weeds	When to Apply	Remarks and Paragraphs
Express SG (tribenuron ²)	0.25 to 0.5 oz SG (0.125 to 0.25 oz)	Small annual broadleaf weeds including wild mustard. Suppression of Canada thistle. No grass or ALS-resistant weed control.	EPOST. Sunflower: 1-leaf stage but prior to bud formation. Broadleaf weeds: Less than 3 inches tall.	Apply only to Express Sun sunflower varieties. Apply with MSO adjuvant at 1 to 1.5 pt/A and with a registered POST grass herbicide. Observe a 14 day interval between sequential applications but do not exceed a total rate of 1 oz/A. Allow a 70 day PHI. A3 A5-8 J1 J4