



The miracles of science™

Optimize the DuPont™ ExpressSun® trait system with Express® herbicide

DuPont™
Express®
herbicide
with
TotalSol®
soluble granules

Benefits of the DuPont™ ExpressSun® trait

Herbicide-tolerant sunflower hybrids can provide producers with technology to aid in the control of annual and perennial broadleaf weeds. High-yielding sunflower hybrids from DuPont Pioneer, Croplan Genetics and Seeds 2000 Inc. include the DuPont™ ExpressSun® trait with built-in tolerance to the active ingredient in DuPont™ Express® herbicide with TotalSol® soluble granules. Express® research trials have demonstrated in-season control of Canada thistle and control of many other annual broadleaf weeds in conventional, minimum-till or no-till sunflower production systems.

The ExpressSun® trait system is designed to maximize weed control in sunflower crops, thereby enhancing production and yield. ExpressSun® combines herbicide-tolerant sunflower seed with the Express® trait herbicide to provide improved weed control over conventional systems.

ExpressSun® trait development

Application of Express® herbicide, to conventional (non-Express®-tolerant) sunflowers will result in significant crop injury or plant death. In contrast, herbicide-tolerant sunflower hybrids with the ExpressSun® trait possess genetic tolerance to Express® herbicide.

DuPont Pioneer first introduced herbicide-tolerant sunflowers with the ExpressSun® trait for the 2007 season and continues to develop new herbicide-tolerant hybrids.

Unlike other herbicide-tolerant crops, such as Roundup Ready soybeans with the Roundup Ready gene, herbicide-tolerant sunflowers with the ExpressSun® trait were derived through traditional plant-breeding methods and are non-GMO products. Resistance to Express® herbicide has been bred into the select DuPont Pioneer, Croplan and Seeds 2000 Inc. elite sunflower germplasm.

DuPont™ Express® herbicide delivers:

- Control of broadleaf weeds and has proven effective in controlling Canada thistle for more than 20 years in wheat and barley.
- More consistent control over a wide variety of environmental conditions by dissolving completely into ions that are absorbed readily by weeds.
- A 50 percent active water-soluble granule formulation.
- Favorable toxicological profile for mammals, birds, fish and other nonplant wildlife when used in accordance with the label.

Rate Recommendation

Preemergence/Burndown

Express® 0.25-0.5 oz/A
0 day interval before planting

Postemergence

Express® 0.25-0.5 oz/A
(Do not exceed 1 oz/A postemergence per use season.)
+ MSO 1 gal/100 gal

Application information/timing

- Apply Express® using a minimum spray volume of 5 gallons (flat-fan nozzles) by ground (see label for GPA instructions for other nozzles) or 2 gallons by air (see label for specific state instructions) to provide good weed control. When tank mixing with a grass herbicide, such as DuPont™ Assure® II herbicide, use the higher spray volume recommended for those products, usually 10 gallons by ground.
- Apply Express® from the two-leaf stage up to (but not including) bud formation.
- Depending on environmental conditions, a second application may be needed 14 or more days after the first application.
- Do not apply within 70 days of sunflower harvest.



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herbicide

with TotalSol® soluble granules

Broadleaf weeds controlled or partially controlled by Express®

Buckwheat, wild*	Lettuce, miner's	Puncturevine
Chamomile, mayweed	Lettuce, prickly**†	Purslane, common
Chamomile, wild	Marshelder†	Shepherd's-purse
Chickweed, common†	Mustard: black, blue (purple mustard), wild†	Smartweed, Pennsylvania*
Dandelion	Nightshade, hairy*	Sowthistle, annual*
Falseflax, smallseed†	Pennycress, field	Tansymustard
Flixweed†	Pineapple-weed	Thistle: Canada**, Russian**†
Lambsquarters: common†, slimleaf	Pigweed: redroot†, tumble (0.5 oz)	Vetch: common**, hairy**
		Wallflower, bushy (treacle mustard)†

* Partial control. For better results, use 0.5 oz Express® per acre.

** See the Specific Weed Instructions section of this label for more information.

† Naturally occurring resistant biotypes are known to occur.

Stewardship

It is well-known that domestic sunflowers can outcross readily to wild sunflowers. To preserve the efficacy of the ExpressSun® trait, producers are required to follow specific management practices designed to prevent or delay herbicide resistance in wild species of sunflowers. These practices span crops to promote herbicide resistance management.

- Always grow sunflower hybrids with the ExpressSun® trait as part of a multiyear rotation with other crops.
- Use non-ALS/AHAS (non-group 2) mode of action herbicides in a tank mix with ALS/AHAS herbicides, or as sequential treatments in the rotational crop, to control wild and volunteer sunflowers.
- Control wild sunflowers in non-crop areas adjacent to ExpressSun® trait sunflower fields through the use of non-ALS/AHAS herbicides and/or mowing prior to seed set.
- Use tillage to control emerged wild sunflowers prior to planting hybrids with the DuPont™ ExpressSun® trait or by utilizing non-ALS/AHAS burndown herbicides or use ALS/AHAS burndown herbicides in a tank mix with non-ALS/AHAS herbicides to provide control of sunflowers.
- As practical, use ALS/AHAS herbicides in a tank mix with non-ALS/AHAS (non-group 2) mode of action herbicides or use ALS/AHAS herbicides in a sequential program that employs alternate modes of action to control wild and volunteer sunflowers.



Express® is eligible for the DuPont™ Crop Protection Plus® product cost replacement program.¹

¹ Some restrictions apply. Crop Protection Plus® is not an insurance program and is not available in all states. This reference guide is not intended as a substitute for the product label for the product(s) referenced herein. Product labels for the above product(s) contain important precautions, directions for use and product warranty and liability limitations that must be read before using the product. Applicators must be in possession of the product label(s) at the time of application. Always read and follow all label directions and precautions for use when using any pesticide alone or in tank mix combinations. The DuPont Oval Logo, DuPont™, The miracles of science™, Assure®, Crop Protection Plus®, Express®, ExpressSun® and TotalSol® are trademarks or registered trademarks of DuPont or its affiliates. Roundup Ready is a registered trademark of Monsanto Technology LLC. TruChoice® is a registered trademark of Pioneer Hi-Bred. Copyright © 2006-2013 E.I. du Pont de Nemours and Company. All Rights Reserved. 2/13 Reorder No.: K-26279 (Replaces K-23092)