



Corn Hybrid-Herbicide Management Guide**

Pioneer developed the Corn Hybrid-Herbicide Management Guide to help our customers manage our products to the best of their abilities. One of four possible ratings is assigned: adequate tolerance, requires careful management, crop response warning, or insufficient data. Ratings are based on replicated research trials and field observations. Any **herbicide family NOT listed in the chart below indicates Pioneer has NO evidence of a hybrid by herbicide interaction concern.**

Herbicide Families Evaluated	Trade Name Tested	Example Products In Herbicide Family
Amide (Chloroacetamide and Others)	Harness	Surpass, Dual II Magnum, Outlook, Lasso, Topnotch, Zidua, Degree, Define, Ramrod, Cinch®, Breakfree®, and Fulltime
Benzoic Acid, Phenoxy (Synthetic Auxins)	Clarity	Clarity, 2,4-D, Banvel, Distinct, and Status
Isoxazole (4-HPPD Inhibitors)	Balance Flexx, Balance Pro or Callisto	Balance Pro, Balance Flexx, Callisto, Impact, and Laudis
Sulfonylureas (ALS Inhibitors)	Resolve® Q, Option, or Unsafened Resolve®.	Accent®, Basis®, Beacon, Permit, Elim, Steadfast®, Resolve®, and sulfonanilides (Python)

ADEQUATE TOLERANCE: With the particular product, available research and/or field observations suggest this herbicide is unlikely to result in material crop injury under normal circumstances.

REQUIRES CAREFUL MANAGEMENT: With this particular product, available research and or field observations suggest this herbicide may exhibit crop injury in challenging environments such as, heavy rainfall during seed germination or seedling emergence, sandy soils, soils low in organic matter, high pH soils, or during periods of excessively cold, hot, dry or wet weather. *University research indicates products within a herbicide class may vary in their degree of crop selectivity. The potential for herbicide interaction may also be impacted by the labeled herbicide rate used and the method or timing of application.

Amide (Chloroacetamide and Others)

Injury from chloroacetamide herbicides is more prevalent on sandy soils with low organic matter. Additional conditions that may increase the potential for injury include deep planting, cool wet conditions, and/or soil crusting. Management comments for reducing injury potential include:

1. Monitor planting depth.
2. Avoid sandy soils with low organic matter.
3. Use a chloroacetamide herbicide with a safener.
4. Use rotary hoe if crusting occurs, to aid in emergence.
5. Avoid ultra early planting dates.

Phenoxy and Benzoic Acid (Synthetic Auxins)

Potential for crop injury from growth regulator herbicides increases when product is under stress, herbicide is applied at a late stage of growth, or high winds occur after application. Management comments for reducing injury potential include:

1. Apply herbicide early within label recommendations (up to 5-6" or V3 for dicamba).
2. Avoid spraying when daytime temperatures are high and corn plants are growing rapidly.
3. Follow labeled rates for specific stages of growth.
4. Avoid spraying when environmental conditions such as drought, cold soils, or wind damage cause abnormal stress.
5. Please read labels carefully. Many herbicides include growth regulator herbicides as part of their pre-mix. Many tank mixes require use of NIS or other additives that may increase injury potential.

Isoxazole (4-HPPD Inhibitors)

Crop injury from a pigment inhibitor is more probable on sandy soils with low organic matter. Cool, wet growing conditions may also increase potential for damage. Management comments to reduce the potential for injury include:

1. Follow labeled rates for specific soil types.
2. Avoid sandy soils with low organic matter.
3. Avoid ultra early planting dates to prevent extended slow emergence under cold conditions.
4. Plant seed at least 1.5 inches deep with good seed furrow closure.
5. Aid emergence with a rotary hoe if crusting occurs.

Sulfonylureas (ALS Inhibitors)

Injury from sulfonylureas is more likely when corn is sprayed after the plant is 10-12 inches tall and/or is under stress extremes such as hot humid or cool dry conditions. Management comments to reduce the potential for injury include:

1. Apply herbicide early within label recommendations (before product is 10-12 inches tall).
2. Avoid spraying when corn is under stress extremes such as hot humid or cool dry conditions.
3. Some sulfonylurea products are restricted on products with maturity shorter than 88 CRM. Review the label carefully before applying any sulfonylurea product to products less than 88 CRM.
4. Use a sulfonylurea herbicides with a safener.

CROP RESPONSE WARNING: With this product in field observations and/or research, crop injury has occurred with this herbicide.

INSUFFICIENT DATA: Additional testing is needed to evaluate this product.

The purpose of this guide is to assist you in managing herbicide programs with Pioneer® brand corn products. However, under certain environmental conditions, higher herbicide activity or reduced crop tolerance may occur. In such cases, crop injury may occur on products rated as having acceptable tolerance to the herbicide. Environmental conditions are the key factor in hybrid-herbicide interactions. **Always read and follow all label instructions and precautions.** Pioneer makes no warranty regarding the herbicide crop response information in this guide.

** All scores of integrated refuge products are based upon the major component.

References: (1) 2019 Herbicide Guide for Iowa Corn and Soybean Production, Extension Publication WC-94, B. Hartzler & M. Owen; (2) Weed Control Guide for Ohio, Indiana, and Illinois 2019 Edition, Bulletin 789, The Ohio State University Extension, M. M. Loux, D. Doohan, A. Dobbels and B. Reeb The Purdue Extension; W.G. Johnson, B. Young and J. Ikley University of Illinois Crop Sciences: A. Hager. (3) 2019 Chemical Weed Control for Field Crops, Pastures, Rangeland, and Noncropland, Bulletin SRP 1148, Kansas State University, Agricultural Experiment Station & Cooperative Extension Service, D. E. Peterson, W. H. Fick, R.S. Currie, V. Kumar, and J.W. Slocombe.

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