

CORN - REDUCED OR NO-TILLAGE SYSTEMS - COARSE - LESS THAN 14 DAYS BEFORE PLANTING OR AFTER PLANTING BUT PRIOR TO CORN EMERGENCE - AFTER PLANTING AND/OR CORN EMERGENCE

General Information

Product Information

For use only on field corn, production seed corn, silage corn, sweet corn and popcorn. Corn in the label refers to: field corn, production seed corn, silage corn, sweet corn and popcorn.

Keystone LA herbicide is a unique combination of the herbicides acetochlor and atrazine plus the antidote or safener, dichlormid. While the acetochlor and atrazine provide weed control, the dichlormid safens corn against herbicide injury. Keystone LA may be applied to the surface or incorporated into the top 1-2 inch layer of soil. It may be used for control alone, or in tank mix combinations, for the weeds listed in the \"Target Weeds\" section of these use directions. Keystone LA controls weeds by interfering with normal germination and seedling development. Keystone LA does not control established or germinated weeds present at application.

Use Restrictions

- Not for Sale, Sale Into, Distribution and/or Use in Nassau and Suffolk Counties of New York State.
- On the following soil types, do not apply this product within 50 feet of any well where the depth to groundwater is 30 feet or less: sands with less than 3% organic matter; loamy sands with less than 2% organic matter; or sandy loams with less than 1 percent organic matter. See the figure for additional clarification.
- This product may not be mixed or loaded within 50 ft. of intermittent streams and rivers, natural or impounded lakes and reservoirs. This product may not be applied by ground within 66 feet of the points where field surface water runoff enters perennial or intermittent streams and rivers or within 200 feet around natural or impounded lakes and reservoirs. If this product is applied to highly erodible land,

the 66-foot buffer or setback from runoff entry points must be planted to crop, seeded with grass or other suitable crop.

- This product must not be mixed or loaded, or used within 50 feet of all wells, including abandoned wells, drainage wells, and sinks holes. Operations that involve mixing, loading, rinsing, or washing of this product into or from pesticide handling or application equipment or containers within 50 feet of any well are prohibited unless conducted on an impervious pad constructed to withstand the weight of the heaviest load that may be positioned on or moved across the pad. Such a pad shall be designed and maintained to contain any product spills or equipment leaks, container or equipment rinse or washwater, and rainwater that may fall on the pad. Surface water shall not be allowed to either flow over or from the pad, which means the pad must be self-contained. The pad shall be sloped to facilitate material removal. An unroofed pad shall be of sufficient capacity to contain at a minimum 110% of the capacity of the largest pesticide container or application equipment on the pad. A pad that is covered by a roof of sufficient size to completely exclude precipitation from contact with the pad shall have a minimum containment capacity of 100% of the capacity of the largest pesticide container or application equipment on the pad. Containment capacities as described above shall be maintained at all times. The above specified minimum containment capacities do not apply to vehicles when delivering pesticide shipments to the mixing/loading site. Additional State imposed requirements regarding well-head setbacks and operational area containment must be observed.

- Tile-Outletted Fields Containing Standpipes To ensure protection of surface water from runoff through standpipes with tile-outlets in fields, one of the following restrictions must be used in applying this product to tile-outletted fields containing standpipes:

1. Do not apply this product within 66 feet of standpipes in tile-outletted fields.
2. Apply this product to the entire tile-outletted field and immediately incorporate it to a depth of 2-3 inches in the entire field.

3. Apply this product to the entire tile-outletted field under a no-till practice only when high crop residue management practices are used. High crop residue management is described as a crop management practice where little or no crop residue is removed from the field during or after crop harvest.

- Do not apply Keystone LA to sweet corn as an early postemergence application
- Chemigation: Do not apply this product through any type of irrigation system.
- Do not use flood irrigation to apply or incorporate this product.
- Product must be used in a manner that will prevent back siphoning in wells, spills or improper disposal of excess pesticide, spray mixtures or rinsates.
- Do not apply under conditions that favor runoff or wind erosion of soil containing this product to non-target areas. To prevent off-site movement due to runoff or wind erosion:
 - Avoid treating powdery dry or light sandy soils when conditions are favorable for wind erosion. Under these conditions, the soil surface should first be settled by rainfall or irrigation.
- Do not apply to impervious substrates such as paved or highly compacted surfaces or frozen or snow covered soils.
- Do not use tailwater from the first flood or furrow irrigation of treated fields to treat non-target crops unless at least 1/2 inch of rainfall has occurred between application and the first irrigation.
- Aerial Application: Do not apply this product using aerial application equipment.
- Do not apply when wind conditions favor drift to non-target sites. To minimize spray drift to non-target areas:
 - Use low-pressure application equipment capable of producing a large droplet spray.
 - Do not use nozzles that produce a fine droplet spray.

- Minimize drift by using sufficient spray volume to ensure adequate coverage with large droplet size sprays.
- Keep ground-driven spray boom as low as possible above the target surface.
- Make application when the wind velocity favors on-target product deposition (approximately 3 to 10 mph). Do not apply when wind velocity exceeds 15 mph. Avoid application when gusts approach 15 mph.
- Low humidity and high temperatures increase the likelihood of spray drift to sensitive areas. Avoid spraying during conditions of low humidity and/or high temperatures. Do not apply during inversion conditions.

Maximum Atrazine Application Rates Per Calendar Year:

Maximum annual atrazine broadcast application rates for corn must be as follows:

- If no atrazine was applied prior to corn emergence, apply a maximum of 2.0 pounds active ingredient (contained in 5.3 quarts Keystone LA; however do not apply more than 3.0 quarts Keystone LA, per maximum acetochlor rate restrictions below) per acre. If postemergence treatment is required following an earlier herbicide application, the total atrazine applied may not exceed 2.5 pounds active ingredient per acre per calendar year. Note: One quart per acre Keystone LA delivers 0.375 pound active ingredient atrazine per acre.
- Apply a maximum of 2.0 pounds active ingredient (contained in 5.3 quarts Keystone LA; however do not apply more than 3.0 quarts Keystone LA, per maximum acetochlor rate restrictions below) per acre if a single preemergence application is made on soils that are not highly erodible or on highly erodible soil if at least 30% of the soil is covered with plant residues, or
- Apply a maximum of 1.6 pounds active ingredient (contained in 4.2 quarts Keystone LA; however do not apply more than 3.0 quarts Keystone LA, per maximum acetochlor rate restrictions below) per acre as a single preemergence application on highly erodible soils if less than 30% of the soil is covered with plant residues; or 2.0 pounds active ingredient (contained in 5.3 quarts Keystone LA; however do not apply more than 3.0 quarts Keystone LA, per maximum acetochlor rate restrictions below) per acre if only applied post emergence.

- Maximum Acetochlor Application Rates Per Calendar Year:

Maximum annual acetochlor broadcast application rates for corn must not exceed 3.0 pounds active ingredient (3.0 quarts Keystone LA) per acre. Note: One quart per acre Keystone LA delivers 1.0 pound active ingredient acetochlor per acre.

- Preharvest Interval: Do not apply Keystone LA within 60 days of harvest for field corn forage uses or 45 days for sweet corn forage uses.

- Postemergence applications of atrazine to corn must be made before the crop reaches 12 inches in height.

Use Precautions

- Failure to strictly follow label directions may result in exceeding the maximum annual atrazine use rates as stipulated by the Environmental Protection Agency.

- Note: This product contains atrazine and thus may not control weeds that are known or suspected to be triazine resistant. Following many years of continuous use of atrazine and chemically related products, biotypes of some of the weeds listed on the label have been reported which cannot be effectively controlled by atrazine and related herbicides. Where this is known or suspected and weeds controlled by atrazine are expected to be present along with resistant biotypes, it is recommended that atrazine be used in combinations or in sequence with other registered herbicides which are not triazines. If only resistant biotypes are expected to be present, use a registered non-triazine herbicide.

- Do not use Keystone LA on any crop other than field corn, production seed corn, silage corn and popcorn.

- Keystone LA should not be used on corn seed stock such as Breeders, Foundation, or Increase.

- Do not contaminate irrigation water used for crops other than corn or water used for domestic purposes.

- Do not apply Keystone LA before pre-irrigation in irrigated areas.

- Do not allow Keystone LA to contaminate feed or food.

- Keystone LA should not be stored near seeds, fertilizers, or foodstuffs.
- All containers of Keystone LA should be kept tightly closed when not in use.
- Applied according to directions and under normal growing conditions, Keystone LA will not harm the treated crop. During germination and early stages of growth, extended periods of unusually cold and wet or hot and dry weather, insect or plant disease attack, carryover pesticide residues, the use of certain soil applied systemic insecticides, improperly placed fertilizers or soil insecticides may create abnormal conditions that weaken crop seedlings. Keystone LA used under these abnormal conditions could result in crop injury.

Weed Resistance Management Guidelines

Acetochlor and atrazine, the active ingredients in this product, are Group 15 and Group 5 herbicides, respectively, based on the mode of action classification system of the Weed Science Society of America. Any weed population may contain plants naturally resistant to Group 15 or Group 5 herbicides. Such resistant weed plants may not be effectively managed using Group 15 or Group 5 herbicides but may be effectively managed utilizing another herbicide alone or in mixtures from a different Group and/or by using cultural or mechanical practices. However, any herbicide mode of action classification by itself may not adequately address specific weeds that are resistant to specific herbicides. Consult your Dow AgroSciences representative, state cooperative extension service, professional consultants, or other qualified authorities to determine appropriate actions for treating specific resistant weeds.

Best Management Practices

Proactively implementing diversified weed control strategies to minimize selection for weed populations resistant to one or more herbicides is recommended. A diversified weed management program may include the use of multiple herbicides with different modes of action and overlapping weed spectrum with or without tillage operations and/or other cultural practices. Research has demonstrated that using full labeled rates and following directions for use is important to delay the selection for resistance. Scouting after a herbicide application is important because it can facilitate the early identification of weed shifts and/or weed resistance and thus provide direction on future weed management practices.

One of the best ways to contain resistant populations is to implement measures to avoid allowing weeds to reproduce by seed or to proliferate vegetatively. Cleaning equipment between sites and avoiding movement of plant material between sites will greatly aid in retarding the spread of resistant weed seed.

General principles of herbicide resistance management:

1. Apply integrated weed management practices. Use multiple herbicide modes-of-action with overlapping weed spectrums in rotation, sequences, or mixtures.
2. Use the full recommended herbicide rate and proper application timing for the hardest to control weed species present in the field.
3. Scout fields after herbicide application to ensure control has been achieved. Avoid allowing weeds to reproduce by seed or to proliferate vegetatively.
4. Monitor site and clean equipment between sites.

For annual cropping situations also consider the following:

- Start with a clean field and control weeds early by using a burndown herbicide treatment or tillage in combination with a soil applied residual herbicide as appropriate.
- Use cultural practices such as cultivation and crop rotation, where appropriate.
- Use good agronomic principles that enhance crop competitiveness.
- Use new commercial seed that is as free of weed seed as possible. Report any incidence of repeated non-performance of this product on a particular weed to your

Dow AgroSciences representative, local retailer, or county extension agent.

Application Directions – Corn

Volume

Liquid: Use a minimum of 10 gallons per acre in broadcast boom equipment for ground applications.

Dry Bulk Fertilizer: Use a minimum of 200 pounds of dry bulk fertilizer per acre. See Appendix II for directions and restrictions.

Pressure

If liquid carriers are used, the pressure at the nozzle should be 15 to 40 psi to ensure good distribution in the spray pattern. Use appropriate nozzles and 50-mesh or coarser screens, if needed. Maintain sufficient agitation to ensure the mixture is suspended in the spray tank.

Application Timing and Methods

For the optimum period of effective weed control during the time most critical to corn production, preplant applications of Keystone should occur as close as possible to planting. Preemergence applications should occur as close as possible to planting, but prior to weed emergence.

Note: Do not apply Keystone LA to sweet corn as an early postemergence application.

Early Preplant: On medium and fine textured soils (Table 1), Keystone LA may be applied up to 30 days prior to planting.

Preplant Incorporation: Keystone LA and certain tank mixes may be mechanically incorporated in the top 2 inches of the soil with field cultivators, discs, or spring tooth harrows at any time within 14 days prior to planting. Improper incorporation, excessive crop residues, or poor soil tilth may result in erratic, streaked or otherwise unsatisfactory weed control. Avoid moving or shaping soil after incorporation.

Preemergence Surface: Keystone LA and certain tank mixes may be applied to the soil surface as a broadcast or banded application.

Precipitation or sprinkler irrigation of at least 0.25 inch is required to bring Keystone LA into contact with germinating seeds. If rain or sprinkler irrigation does not occur within 7 days after application, weed control may be improved by using a rotary hoe, or similar device, to incorporate the herbicide. The device used should be run at a shallow depth to prevent disturbing the corn seed. Do not remove Keystone LA from the weed control zone or dilute it with untreated soil.

Postplant-Preemergence: Keystone LA may be applied immediately after planting but prior to corn emergence. If rain or sprinkler irrigation does not occur within 7 days after application, weed control may be improved by using a rotary hoe, or similar device, to shallowly incorporate the herbicide. Do not disturb the germinating corn. Do not remove Keystone LA from the weed control zone or dilute it with untreated soil.

Banding-Preemergence: Keystone LA may be applied in a 10 to 14 inch band after corn planting but prior to corn emergence. If rain or sprinkler irrigation does not occur within 7 days after application, weed control may be improved by using a rotary hoe or similar device to incorporate the herbicide. Do not disturb the germinating corn. Do not remove Keystone LA from the weed control zone or dilute it with untreated soil.

Early Postemergence: Keystone LA may be applied early postemergence to corn up to 11" tall. Applications must be made prior to weed seedling emergence or in a tank mixture that controls the emerged weeds. Read and follow restrictions and directions on tank mix product labels.

Sprinkler Irrigation: Do not apply Keystone LA through sprinkler irrigation systems. Use a sprinkler system only to incorporate Keystone LA after application. After Keystone LA has been applied, a sprinkler irrigation system set to deliver 0.25 to 0.75 inch of water per acre may be used to incorporate the product. Using more than 0.75 inch of water could result in reduced performance. On sandy soils low in organic matter, use no more than 0.5 inch of water. Do not use flood irrigation to apply or incorporate Keystone LA.

Planting

Planting should be done as close to the time of application of Keystone LA as possible. This allows Keystone LA to provide effective weed control during the time it is most critical in the production of corn.

Cultivation

Cultivation should be delayed as long as possible. Should weeds develop, a shallow cultivation or rotary hoeing will generally result in improved weed control. If Keystone LA was incorporated, cultivate to a depth of less than half the depth of incorporation.

If cultivation is necessary due to soil crusting, compaction, or escaped weeds, adjust equipment to run shallow and minimize soil movement.

This will decrease the possibility of diluting or moving the herbicide from the weed control zone.

Refer in the label for tank mix information.

Limitations, Restrictions, and Exceptions

Reduced Tillage Systems

Keystone LA may be used in reduced or no-tillage systems. Applications may be made from up to 30 days prior to planting or after planting but before the corn emerges. Optimal weed control will be obtained when applications are made as close to planting as possible but before the corn emerges. It is recommended that a burndown herbicide such as Durango/DMA or 2,4-D be tank mixed with Keystone LA in reduced or no-tillage systems to control emerged weeds.

- Rates are for single applications. Split applications of Keystone LA may be used. Apply at least 60% of the specified rate up to 30 days before planting and the remaining balance, up to 40%, at planting

Method

[Broadcast/Foliar Ground](#)

[Band application](#)

[Broadcast/Foliar Ground](#)

[Band application](#)

[Broadcast/Foliar Ground](#)

[Band application](#)

[Broadcast/Foliar Ground](#)

[Band application](#)

Pre-Harvest Interval

60 days

Rates

[field_rates 0](#)

•

Restricted Entry Interval

12 hours

Soils

[Coarse](#)

[Loamy Sand](#)

[Sandy Loam](#)

[Sand](#)

Tillages

[Fallow/Reduced](#)

[No-Tillage](#)

Timings

[Postemergence \(Crop\)](#)

[Preemergence \(Crop\)](#)

[Preplant](#)

[Postplant](#)