

# **CORN - COARSE - CONVENTIONAL TILLAGE SYSTEMS**

## General Information

## Product Information

For use only on field corn, production seed corn, silage corn, sweet corn, popcorn, Miscanthus or other non-food perennial bioenergy crops. Corn in this label refers to: field corn, production seed corn, silage corn, sweet corn and popcorn.

Keystone LA NXT herbicide 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 NXT controls weeds by interfering with normal germination and seedling development. Keystone LA NXT does not control emerged weeds present at application.

## Use Restrictions

- Not for Sale, Sale Into, Distribution and/or Use in Nassau and Suffolk Counties of New York State.
- Do not use Keystone LA NXT on any crop other than field corn, production seed corn, silage corn, popcorn, and Miscanthus or other non-food perennial bioenergy crops.
- Do not apply Keystone LA NXT before pre-irrigation in irrigated areas.
- Do not allow Keystone LA NXT to contaminate feed or food.
- 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 must not be mixed or loaded within 50 ft. of intermittent streams and rivers, natural or impounded lakes and reservoirs. This product must 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 NXT postemergence to sweet corn.

Chemigation: Do not apply this product through any type of irrigation system unless otherwise directed by approved supplemental labeling in possession of the user at the time of application.

- 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 unless otherwise directed by approved supplemental labeling in possession of the user at the time of application,

- 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.
  - Flush sprayer with clean water after use.

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 4.7 quarts Keystone LA NXT; however do not

apply more than 2.7 quarts Keystone LA NXT, 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 NXT delivers 0.425 pound active ingredient atrazine per acre.

- Apply a maximum of 2.0 pounds active ingredient (contained in 4.7 quarts Keystone LA NXT; however do not apply more than 2.7 quarts Keystone LA NXT, 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 3.7 quarts Keystone LA NXT; however do not apply more than 2.7 quarts Keystone LA NXT, 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 4.7 quarts Keystone LA NXT; however do not apply more than 2.7 quarts Keystone LA NXT, per maximum acetochlor rate restrictions below) per acre if only applied postemergence.

- Maximum Acetochlor Application Rates Per Calendar Year: Maximum annual acetochlor broadcast application rates for corn must not exceed 3.0 pounds active ingredient (2.7 quarts Keystone LA NXT) per acre. Note: One quart per acre Keystone LA NXT delivers 1.075 pound active ingredient acetochlor per acre.

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

- Postemergence applications of Keystone LA NXT to corn must be made before the crop reaches 11 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 this 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.

- Keystone LA NXT 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.
- Keystone LA NXT should not be stored near seeds, fertilizers, or foodstuffs.
- All containers of Keystone LA NXT should be kept tightly closed when not in use.
- Applied according to directions and under normal growing conditions, Keystone LA NXT 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 NXT used under these abnormal conditions could result in crop injury.

#### Rotational Crop Restrictions:

When tank mixing Keystone LA NXT with other herbicides, follow the most restrictive crop rotation guidelines on the label of each product used.

1. If a crop treated with this product is lost, field corn, seed corn, silage corn, popcorn or sweet corn may be replanted immediately. Do not exceed a total of 3.0 pounds per acre of acetochlor if additional product is applied.
2. If applied after June 10, do not rotate to crops other than corn or sorghum the next year, or crop injury may occur.
3. Rotate the next season to the following crops: corn (all types), cotton, sorghum or soybeans. Injury from atrazine may occur to soybeans planted the year following application on soils having a calcareous subsurface layer.
4. In the High Plains and Intermountain regions of the West where rainfall is sparse and erratic or irrigation is required, use only when corn or sorghum is to follow corn.
5. In Eastern parts of the Dakotas, Kansas, western Minnesota and Nebraska, do not rotate to soybeans if the rate applied to corn was more than 2.0 pounds active ingredient equivalent of atrazine or soybean injury may occur.
6. Do not plant sugar beets, sunflower, potatoes, tobacco, dry beans or peas, spring-seeded small grains or small-seeded legumes the year following application, or injury from atrazine may occur.

#### Rotation to Non-food Winter Cover Crops

Following harvest of food crops treated with Keystone LA NXT, only non-food or non-feed winter cover crops (with the exception of wheat) may be planted. Do not graze or harvest rotational cover crops for food or animal feed for 18 months following the last application of Keystone LA NXT. This prohibition does not apply to wheat, which may be planted 4 months following the last application of Keystone LA NXT, or to nongrass animal feeds, which may be planted 9 months after the last application of Keystone LA NXT.

#### 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.

#### Limitations, Restrictions, and Exceptions

#### Application Directions – Corn

##### Carriers

Liquids: Either water or liquid fertilizers such as solutions, slurries or suspensions may be used as liquid carriers. If fluid fertilizers are used, a physical compatibility test with these must be done before combining in the spray tank. See Appendix I for details of the compatibility testing procedure. Even if Keystone LA NXT is physically compatible with a fluid fertilizer, constant agitation is necessary to maintain a uniform mixture during application.

Dry Bulk Fertilizer: Keystone LA NXT may be impregnated on dry bulk fertilizer and applied as the fertilizer is spread. See Appendix II for directions and restrictions including which fertilizers are compatible.

##### 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 LA NXT should occur as close as possible to planting. Preemergence applications should occur as close as possible to planting, but prior to weed emergence; this product will not control emerged weeds present at application.

**Early Preplant Surface:** On medium and fine textured soils (see Table 1), Keystone LA NXT may be applied up to 45 days prior to planting field corn or silage corn. Split applications can be made 30 to 45 days prior to planting with 60 percent of the specified broadcast rate applied initially and the remaining 40 percent applied at planting. Applications made less than 30 days prior to planting can be made either as a split or as a single application. If weeds are present at the time of application, apply this product in a tank mixture with an appropriate contact herbicide. Observe directions for use, precautions, and restrictions on the label of the contact herbicide. During the planting operation, be careful not to move untreated soil to the surface or move treated soil out of the row, as weed control may be reduced.

**Preplant Incorporation:** Keystone LA NXT 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 tillage may result in erratic, streaked or otherwise unsatisfactory weed control. Do not mix Keystone LA NXT deeper than 2 inches into the soil and avoid moving or shaping soil after incorporation, as weed control may be reduced.

**Preemergence Surface:** Keystone LA NXT 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 NXT 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 NXT from the weed control zone or dilute it with untreated soil. Erratic weed control resulting from exposure of untreated soil may occur if surface soil is moved or reshaped during incorporation.

Postplant-Preemergence: Keystone LA NXT 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. The device used should be run at a shallow depth to prevent disturbing the corn seed. Do not remove Keystone LA NXT from the weed control zone or dilute it with untreated soil. Erratic weed control resulting from exposure of untreated soil may occur if surface soil is moved or reshaped during incorporation.

Banding-Preemergence: Keystone LA NXT 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. The device used should be run at a shallow depth to prevent disturbing the corn seed. Do not remove Keystone LA NXT from the weed control zone or dilute it with untreated soil. Erratic weed control resulting from exposure of untreated soil may occur if surface soil is moved or reshaped during incorporation.

Early Postemergence: Keystone LA NXT 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 with a herbicide that controls the emerged weeds. Read and follow restrictions and directions on tank mix product labels.

Note: Do not make postemergence applications using sprayable liquid fertilizer as the carrier because severe crop injury may occur.

Note: Do not apply Keystone LA NXT postemergence to sweet corn.

Sprinkler Irrigation: Do not apply Keystone LA NXT through sprinkler irrigation systems unless otherwise directed by approved supplemental labeling in possession of the user at the time of application. A sprinkler system may be used to incorporate Keystone LA NXT after application. After Keystone LA NXT 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 NXT.

### Planting

Planting should be done as close to the time of application of Keystone LA NXT as possible. This allows Keystone LA NXT 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. If weeds emerge, a shallow cultivation or rotary hoeing will generally result in improved weed control. If Keystone LA NXT 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.

### Soil Texture

The use rate of Keystone LA NXT is determined by soil texture which must be determined prior to application.

### Use Rates for Conventional Tillage Systems

The following use rates are for preplant incorporated, preemergence, and early postemergence applications (see Application Timing and Methods). Apply this product before weeds reach the 2-leaf stage and the corn is no more than 11 inches in height. Consult Table 3 if reduced- or no-till applications are made or the product is applied more than 14 days prior to planting under conventional tillage.

Use the higher rate in the rate range in areas of heavy weed infestation.

NOTE: In areas of heavy weed infestations, use up to 2.7 quarts per acre on medium- and fine-textured soils.

### Weeds Controlled

Keystone LA NXT applied as directed in the label will provide control or partial control the weeds listed in Table 4. Additional weeds may be controlled with tank mixes. See the Tank Mix Combinations" section of the label for tank mix directions. Always consult the tank mix product labels for specific use rates and directions. Always follow the most restrictive label when tank mixing Keystone LA NXT with another product. Keystone LA NXT may be tank mixed with any other registered corn product as long as compatibility is verified and it is not prohibited by the label of the tank mix product.

Note: This product contains atrazine and thus may not control weeds that are known or suspected to be triazine resistant.

#### Weeds Controlled or Partially Controlled:

- Cupgrass Woolly: Apply 2.7 quarts of Keystone LA NXT per acre to control this weed; control can be erratic, especially under dry conditions. Control escaped weeds with cultivation or application of an appropriate registered postemergence herbicide.

- Nutsedge , yellow: Preplant incorporate for improved control. Use the higher rate in the recommended application rate range. Activity may be reduced under dry conditions or following early (more than 14 days) preplant applications. Additional atrazine and/or sequential herbicides may be needed for complete control.

Panicum, Texas, signalgrass, broadleaf: Best control is achieved when Keystone LA NXT is applied within 5 days of planting and rainfall occurs shortly after application or mechanical incorporation is used to activate the herbicide. If rainfall does not occur within 7 days after application, shallow cultivation will enhance activity. Excessive rainfall after application may reduce control. Under adverse weather conditions and/or heavy infestations, a cultivation or follow-up herbicide application may be needed.

Cocklebur, morningglory spp., velvetleaf: Use the higher rate in the recommended application rate range. Activity may be reduced under dry conditions or following early (more than 14 days) preplant applications. Additional atrazine and/or sequential herbicides may be needed for complete control.

#### Method

[Broadcast/Foliar Ground](#)

[Surface](#)

[Band application](#)

[Soil incorporation](#)

[Broadcast/Foliar Ground](#)

[Surface](#)

[Band application](#)

[Soil incorporation](#)

[Broadcast/Foliar Ground](#)

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Rates

[field\\_rates 0](#)

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Restricted Entry Interval

12 hours

Exception: If the product is soil-injected or soil-incorporated, the Worker Protection Standard, under certain circumstances, allows workers to enter the treated area if there will be no contact with anything that has been treated.

Soils

[Coarse](#)

[Loamy Sand](#)

[Sandy Loam](#)

[Sand](#)

Tillages

[Conventional](#)

Timings

[At-Plant](#)

[Preemergence \(Crop\)](#)

[Preplant](#)

[Preplant Incorporated](#)

[Early Postemergence](#)

[At cultivation](#)

[Postplant-Preemergence](#)