

# **CLEARFIELD AND CLEARFIELD PLUS SUNFLOWER - BROADLEAF WEED SUPPRESSION**

## General Information

### Product Information

Beyond herbicide, a soluble liquid, is a postemergence herbicide to control and suppress many broadleaf and grass weeds and sedges, as listed in this label.

The mode of weed-killing activity involves uptake of Beyond by foliage and/or weed roots and rapid translocation to the growing points. After Beyond application, susceptible weeds may show yellowing, and weed growth will stop. Susceptible weeds stop growing and either die or are not competitive with the crop.

Adequate soil moisture is important for optimum Beyond activity. When adequate soil moisture is present, Beyond will provide residual activity on susceptible germinating weeds. Activity on established weeds depends on weed species and location of its root system in the soil. Timely cultivation after Beyond application may improve weed control.

Occasionally, internode shortening and/or temporary yellowing of crop plants may occur following Beyond application. These effects, which occur infrequently and are temporary, can be more pronounced if crops are growing in a stressful environmental or hot and humid conditions. Normal growth and appearance should resume within 1 to 2 weeks.

DO NOT tank mix organophosphate or carbamate insecticides with Beyond on Clearfield or Clearfield Plus crops unless otherwise specified in writing by BASF. When carbamate or organophosphate (such as Lorsban insecticide) insecticides are tank mixed with Beyond, temporary injury may result to the treated crop. Separate organophosphate and Beyond application by at least 7 days to reduce potential for injury.

Use of Beyond is expected to result in normal growth of rotational crops in most situations; however, various environmental and agronomic factors make it impossible to eliminate all risks associated with the use of this product and, therefore, rotational crop injury is always possible.

### Replanting

If replanting is necessary in a field previously treated with Beyond, the field may be replanted to beans (dry), Clearfield canola, Clearfield corn, Clearfield lentil, Clearfield and Clearfield Plus sunflower, Clearfield and Clearfield Plus wheat, edamame, peas (English), peas (dry), lima beans (succulent), snap beans, or soybeans. Rework the soil no deeper than 2 inches. DO NOT apply a second treatment of Beyond. DO NOT apply Extreme herbicide, Pursuit herbicide, Pursuit Plus EC herbicide, Raptor herbicide, or Scepter herbicide if edamame or soybeans are replanted.

### Resistance Management

Naturally occurring biotypes<sup>1</sup> of some of the weeds listed on this label may not be effectively controlled by this and/or other products with the ALS/AHAS enzyme-inhibiting mode of action. Other herbicides with the ALS/AHAS enzyme-inhibiting mode of action include sulfonylureas (e.g. Finesse herbicide), imidazolinones (e.g. Pursuit or Scepter), triazolopyrimidine sulfoanilides (e.g. FirstRate herbicide), sulfonylaminocarbonyl triazolinones (e.g. Olympus<sup>TM</sup> herbicide), and pyrimidyl benzoates (e.g. Staple herbicide). If naturally occurring ALS/AHAS-resistant biotypes are present in a field, Beyond and/or any other ALS/AHAS enzyme-inhibiting mode-of-action herbicide should be tank mixed or applied sequentially with an appropriate registered herbicide having a different mode of action to ensure control.

<sup>1</sup>A weed biotype is a naturally occurring plant within a given species that has a slightly different, but distinct, genetic makeup from other plants.

Beyond is very active against many broadleaf and grass weed species. For long-term weed management, use at least two herbicides with different modes of action to reduce potential for weed resistance. Crop (and herbicide) rotation is effective in managing weed resistance where herbicides of different modes of action are used. Tillage, where practical (such as in fallow production or before planting), is effective in controlling weeds to minimize resistance development. Additionally, a burndown herbicide during fallow or before planting is effective in reducing weed resistance

development.

Beyond has no preharvest interval (PHI) for any crop.

#### Mixing Instructions

Postemergence application of Beyond requires the addition of an adjuvant AND a nitrogen fertilizer solution unless otherwise directed in this label.

#### Adjuvants

When an adjuvant (or a specific adjuvant product, such as a drift control agent) is to be used with this product, the use of a Chemical Producers and Distributors Association (CPDA) certified adjuvant is recommended.

#### Crop Oil Concentrate (COC), Methylated Seed Oil (MSO), or High Surfactant Oil Concentrate (HSOC)

Petroleum-based or vegetable seed-based crop oil concentrate may be used. Methylated seed oil is recommended when weeds are under moisture or temperature stress. DO NOT use crop oil concentrate or methylated seed oil with Beyond herbicide on Clearfield lentil, Clearfield sunflower, or Clearfield wheat. Crop oil concentrate or methylated seed oil may be used with Beyond on Clearfield Plus varieties of sunflower or wheat. Use methylated seed oil or crop oil concentrate at 1 to 2 gallons/100 gallons of spray solution (1 to 2% volume/volume [v/v]).

Use HSOC at 0.5 gallon/100 gallons of spray solution (0.5% v/v).

OR

#### Surfactant

Use nonionic surfactant (NIS) containing at least 80% active ingredient. Apply surfactant at 1 quart/100 gallons of spray solution (0.25% v/v). Organosilicone surfactant may be used in place of NIS.

AND

#### Nitrogen Fertilizer

Recommended nitrogen-based fertilizers include liquid fertilizers [such as liquid ammonium sulfate (AMS), 28% N, 32% N, or 10-34-0] at 2.5 gallons/100 gallons of spray solution. Instead of liquid fertilizer, spray-grade ammonium sulfate may be used at 12 to 15 pounds/100 gallons of spray solution.

For Clearfield spring wheat and Clearfield winter wheat, AMS/nitrogen substitutes are not recommended in place of ammonium sulfate, 28% N, 32% N, or 10-34-0 unless recommended by BASF. When targeting feral rye or other weeds under moisture or temperature stress, using higher nitrogen fertilizer rates [urea ammonium nitrate (UAN) at 5% v/v or 20 lbs AMS/100 gallons] may improve weed control. Additional crop response may be observed when higher fertilizer rates are used.

Nitrogen fertilizer is not required when applied in use areas south of Interstate Highway 40, except in the states of Arizona, California, New Mexico, Oklahoma, and Texas.

#### Liquid Fertilizer as a Carrier

DO NOT apply Beyond in liquid fertilizer as a carrier except to Clearfield or Clearfield Plus spring wheat and Clearfield or Clearfield Plus winter wheat.

#### Spraying Instructions

DO NOT apply when wind conditions may result in drift, when temperature inversion conditions exist, or when spray may be carried to sensitive crops. Sensitive crops include, but are not limited to, leafy vegetables and sugar beets.

#### Ground Application

Uniformly apply with properly calibrated ground equipment in 10 or more gallons of water per acre. A spray pressure of 20 to 40 PSI is recommended. To ensure thorough coverage, use a minimum of 20 gallons of water per acre when applying Beyond to minimum-till or no-till crops. Use higher gallonage for fields with dense vegetation or heavy crop residue.

Adjust the boom height to ensure proper coverage of weed foliage (according to manufacturer's instructions). Use flatfan nozzle tips or similar appropriate nozzle tips to ensure thorough coverage. Avoid overlaps when spraying.

### Ground Application with a Low-volume Sprayer

Beyond may be applied with a low-volume sprayer. When applying Beyond with a low-volume sprayer, spray weeds before they reach the maximum size listed in this label. Weed control depends on thorough spray coverage. The sprayer must be calibrated to deliver the recommended spray volume and pressure to ensure thorough spray coverage of weeds.

For optimum coverage when applying Beyond herbicide with a low-volume sprayer, apply a minimum of 10 gallons per acre of spray solution with a nozzle pressure between 40 to 60 PSI.

### Aerial Application

Beyond may be applied by air to all crops listed on this label.

Uniformly apply with properly calibrated equipment in 5 or more gallons of water per acre. The addition of an adjuvant AND a nitrogen fertilizer solution are required for optimum weed control, unless otherwise directed in this label.

Nonuniform application of Beyond through aerial equipment may increase Clearfield crop response, especially when applied to large slopes and hills. All risks associated with nonuniform application shall be assumed by the user. Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment-related and weather-related factors determines the potential for spray drift. The applicator and the grower are responsible for considering all these factors when making decisions. The following drift-management requirements must be followed to avoid off-target drift movement from aerial application to agricultural field crops.

1. The distance of the outermost nozzles on the boom must not exceed 3/4 the length of the wingspan or rotor.
2. Nozzles must always point backward parallel with the airstream and never be pointed downward more than 45 degrees.

Where states have more stringent regulations, they must be observed.

The applicator must be familiar with and take into account the information covered in the aerial drift reduction advisory information following.

## PROVISIONS FOR REGISTERED Clearfield AND Clearfield Plus CROPS

Subject to the terms and conditions set forth on this label, BASF hereby grants to the purchaser, a limited, nonexclusive, revocable, nontransferable license under claims in Licensed Patents relating to applying imazamox herbicide to fields planted with any Registered Clearfield or Clearfield Plus Crop, in full accordance with the directions printed on this label, for the sole purposes of spraying or otherwise applying only Beyond® herbicide to fields planted with such Registered Clearfield or Clearfield Plus Crop to produce grain for use or sale only as food or feed. Except as set forth above, no other license or right, whether express or implied, is granted to the purchaser under any Licensed Patents, including, without limitation, any right or license: (i) to spray or otherwise apply any herbicide other than Beyond to any Registered Clearfield or Clearfield Plus Crop or to the area where any Registered Clearfield or Clearfield Plus Crop is grown; (ii) to spray or otherwise apply Beyond on any seed or plant that is not a Registered Clearfield or Clearfield Plus Crop or to the area where such seeds or plants are grown; (iii) to conduct mutagenesis, crop breeding or research, or to generate herbicide registration data using Beyond or any Registered Clearfield or Clearfield Plus Crop; or (iv) under any claims in Licensed Patents to plant or grow Registered Clearfield or Clearfield Plus Crops.

“Licensed Patents” is defined as US Patent Nos. 6,121,203; 6,222,100; 7,232,942; and 7,807,882.

“Registered Clearfield or Clearfield Plus Crop” is defined as any seed or plant that contains a gene encoding an acetohydroxyacid synthase (AHAS) protein that confers tolerance upon such seed or plant to imidazolinone and/or sulfonylurea herbicides sold by or authorized for sale by BASF, and on which Beyond is approved for use or application by all applicable regulatory agencies.

### Rotational Crop Restrictions

Rotational crops may be planted after applying the specified rate of Beyond® herbicide in Region 1 and Region 2, as indicated on the map.

- Region 1 - States and parts of states WEST of US Highway 83 (Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming, and western parts of Kansas, Nebraska, North Dakota, Oklahoma, South Dakota, and Texas)

- Region 2 - States and parts of states EAST of US Highway 83 (includes the eastern parts of Kansas, Nebraska, North Dakota, Oklahoma, South Dakota, and Texas, and the states east of these states) 17

#### Furrow-irrigated and Flood-irrigated Crops

Following harvest of furrow-irrigated or flood-irrigated crops, thoroughly mix soil by plowing or deep disking to minimize the potential for herbicide carryover to the following crop. Use of Beyond in accordance with label directions is expected to result in normal growth of rotational crops in most situations; however, various environmental and agronomic factors, such as arid conditions, make it impossible to eliminate all risks associated with use of this product and, therefore, rotational crop injury is always possible.

#### Use Restrictions and Precautions

In the event of a crop loss due to weather, dry beans, dry peas, Clearfield canola, Clearfield corn, Clearfield lentil, Clearfield and Clearfield Plus sunflower, Clearfield and Clearfield Plus wheat, edamame, peas (English), lima beans (succulent), snap beans, or soybeans can be replanted. DO NOT make an additional application of Beyond herbicide. Application of products containing chlorimuron ethyl (Canopy herbicide), metsulfuron-methyl (Harmony Extra herbicide), imazaquin (Scepter 70 DG herbicide), or imazethapyr (Pursuit herbicide, Pursuit Plus EC herbicide) the same year as Beyond may increase the risk of injury to sensitive rotational crops. Consult all pertinent labels for use of these products in combinations.

If arid conditions occur during the year of application, rotational crop injury may occur.

#### Limitations, Restrictions, and Exceptions

##### Clearfield and Clearfield Plus Sunflower

Beyond is effective in controlling weeds in conservation tillage and conventional tillage production systems.

Beyond can be applied early postemergence in Clearfield or Clearfield Plus sunflower (imidazolinone- tolerant sunflower) varieties. Apply only on selected sunflower varieties labeled "Clearfield or Clearfield Plus" and warranted by the seed supplier to possess tolerance to direct application of Beyond. DO NOT apply Beyond

to sunflower varieties that lack resistance/tolerance to imidazolinone herbicides. Contact your seed supplier, chemical dealer, or BASF to obtain information regarding Clearfield or Clearfield Plus sunflower varieties.

Apply Beyond early postemergence when weeds are actively growing and before broadleaf weeds exceed a height of 3 inches and grass weeds exceed 4 to 5 leaves (unless otherwise indicated, refer to Weeds Controlled section for specific weed sizes). Under cold temperature conditions (less than 50° F maximum daytime temperature), weed control may be less than optimal. Apply when the majority of weeds are at the specified growth stage.

When adequate soil moisture is present, Beyond herbicide will provide residual activity of susceptible germinating weeds. Activity on established weeds depends on weed species and location of its root system in the soil.

Occasionally, reduction in plant height or temporary yellowing of crop plants may occur following Beyond application. These effects can be more pronounced if crops are growing under stressful environmental conditions. These effects are temporary. Normal growth and appearance should resume within 1 to 2 weeks.

#### Application Timing

For best weed control and to provide the highest crop competitive advantage, apply Beyond to actively growing Clearfield or Clearfield Plus sunflower. Plant a locally adapted Clearfield or Clearfield Plus sunflower variety at the normal seeding rate for your geography. Apply Beyond to Clearfield or Clearfield Plus sunflower after the first pair of true leaves has unfolded and up to, and including, when the fourth pair of leaves is unfolded (2-leaf to 8-leaf stage); refer to Weeds Controlled section for specific weed sizes.

#### Use Rate

DO NOT apply more than 4 fl ozs Beyond/acre in Clearfield Plus sunflower in California.

For use in Clearfield sunflower, apply Beyond postemergence at 4 fl ozs/acre (0.031 lb ae imazamox/acre). At this rate, 1 gallon of Beyond will treat 32 acres of Clearfield sunflower.

For use in Clearfield Plus sunflower, apply Beyond postemergence at 4 to 6 fl



ozs/acre (0.031 to 0.047 lb ae imazamox/acre). At this rate, 1 gallon of Beyond will treat 21.3 to 32 acres of Clearfield Plus sunflower.

Use of a soil-applied grass herbicide like Prowl 3.3 EC herbicide or Prowl H2O herbicide is recommended before Beyond application.

Nonionic surfactant AND nitrogen-based fertilizer MUST be added to the spray solution for optimum weed control.

See Adjuvants section under Mixing Instructions for specific instructions.

Clearfield Plus Sunflower. For improved weed control, crop oil concentrate or methylated seed oil may be substituted for nonionic surfactant. Use of COC or MSO in place of NIS in Clearfield Plus sunflower may increase crop response. When Beyond is tank mixed with another herbicide, using COC or MSO in Clearfield Plus sunflower is only recommended when a Beyond tank mix partner allows use of COC or MSO.

DO NOT use COC or MSO with Beyond on Clearfield sunflower.

#### Clearfield and Clearfield Plus Sunflower Restrictions

- DO NOT apply more than 4 fl ozs Beyond/acre (0.031 lb ae imazamox/acre) in Clearfield Plus sunflower in California per year.
- DO NOT apply more than 4 fl ozs Beyond/acre (0.031 lb ae imazamox/acre) in Clearfield sunflower per year.
- DO NOT apply more than 6 fl ozs Beyond/acre (0.047 lb ae imazamox/acre) in Clearfield Plus sunflower per year.

#### Method

[Broadcast/Foliar Air](#)

[Broadcast/Foliar Ground](#)

[Directed](#)

[Broadcast/Foliar Air](#)

[Broadcast/Foliar Ground](#)

[Directed](#)

Restricted Entry Interval

4 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.

Tillages

[Conventional](#)

[Conservation](#)

Timings

[Postemergence \(Crop\)](#)

[Postemergence \(Weed\)](#)