



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, DC 20460

OFFICE OF CHEMICAL SAFETY  
AND POLLUTION PREVENTION

December 14, 2018

Mr. Jacob S. Moore  
Regulatory Manager  
Makhteshim Agan of North America (d/b/a ADAMA)  
3120 Highwoods Blvd., Suite 100  
Raleigh, NC 27604

Subject: Notification per PRN 98-10 – Add packaging related labeling statements  
Product Name: Impose Herbicide  
EPA Registration Number: 66222-141  
Application Date: November 29, 2018  
Decision Number: 546950

Dear Mr. Moore:

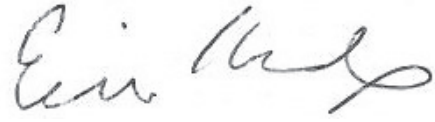
The Agency is in receipt of your Application for Pesticide Notification under Pesticide Registration Notice (PRN) 98-10 for the above referenced product. The Registration Division (RD) has conducted a review of this request for its applicability under PRN 98-10 and finds that the action requested falls within the scope of PRN 98-10.

The label submitted with the application has been stamped “Notification” and will be placed in our records.

Should you wish to add/retain a reference to the company’s website on your label, then please be aware that the website becomes labeling under the Federal Insecticide Fungicide and Rodenticide Act and is subject to review by the Agency. If the website is false or misleading, the product would be misbranded and unlawful to sell or distribute under FIFRA section 12(a)(1)(E). 40 CFR 156.10(a)(5) list examples of statements EPA may consider false or misleading. In addition, regardless of whether a website is referenced on your product’s label, claims made on the website may not substantially differ from those claims approved through the registration process. Therefore, should the Agency find or if it is brought to our attention that a website contains false or misleading statements or claims substantially differing from the EPA approved registration, the website will be referred to the EPA’s Office of Enforcement and Compliance.

If you have any questions, you may contact please contact BeWanda Alexander at (703)347-0313 or by email at [alexander.bewanda@epa.gov](mailto:alexander.bewanda@epa.gov).

Sincerely,

A handwritten signature in black ink, appearing to read "Erik Kraft". The signature is written in a cursive style with a large, sweeping initial "E".

Erik Kraft, Product Manager 24  
Fungicide and Herbicide Branch  
Registration Division (7505P)  
Office of Pesticide Programs

# NOTIFICATION

66222-141

The applicant has certified that no changes, other than those reported to the Agency have been made to the labeling. The Agency acknowledges this notification by letter dated:

12/14/2018

## IMPOSE®

### HERBICIDE

For use on Conservation Reserve Program (CRP) land, paved surfaces, pasture and rangeland, and peanuts

ACTIVE INGREDIENT:	% BY WT.
Ammonium salt of imazapic (+/-)-2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1 H imidazol-2-yl]-5-methyl-3-pyridinecarboxylic acid*.....	23.3%
OTHER INGREDIENTS: .....	76.7%
	<b>TOTAL</b> 100.0%

Equivalent to 21.9%(+/-)-2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1 H-imidazol-2-yl]-5-methyl-3-pyridinecarboxylic acid  
1 gallon contains 2.0 pounds of active ingredient as the free acid

## KEEP OUT OF REACH OF CHILDREN CAUTION

Manufactured for:  
Makhteshim Agan of North America, Inc. (d/b/a ADAMA)  
3120 Highwoods Blvd., Suite 100  
Raleigh, NC 27604

EPA Reg. No. 66222-141

EPA Est. No. \_\_\_\_\_

NET CONTENTS: \_\_\_\_ GAL (S)

FIRST AID	
<b>IF IN EYES:</b>	<ul style="list-style-type: none"><li>• Hold eye open and rinse slowly and gently with water for 15 to 20 minutes.</li><li>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li><li>• Call a poison control center or doctor for treatment advice.</li></ul>
<b>IF INHALED:</b>	<ul style="list-style-type: none"><li>• Move person to fresh air.</li><li>• If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible.</li><li>• Call a poison control center or doctor for further treatment advice.</li></ul>
<b>IF ON SKIN OR CLOTHING:</b>	<ul style="list-style-type: none"><li>• Take off contaminated clothing.</li><li>• Rinse skin immediately with plenty of water for 15 to 20 minutes.</li><li>• Call a poison control center or doctor for treatment advice.</li></ul>
<b>IF SWALLOWED:</b>	<ul style="list-style-type: none"><li>• Call a poison control center or doctor immediately for treatment advice.</li><li>• Have person sip a glass of water if able to swallow.</li><li>• Do not induce vomiting unless told to do so by a poison control center or doctor.</li><li>• Do not give anything by mouth to an unconscious person.</li></ul>
Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact Prosar at 1-877-250-9291 for emergency medical treatment information.	

**Optional Text for Label Booklet: [For additional Precautionary Statements, Directions for Use and Storage and Disposal, see inside of this booklet.] [For First Aid, Precautionary Statements, and Directions for Use, see inside of this booklet.]**

### PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS CAUTION

Causes moderate eye irritation. Avoid breathing spray mist. Avoid contact with skin, eyes, or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco.

### PERSONAL PROTECTIVE EQUIPMENT (PPE)

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves made of any waterproof material
- Shoes plus socks

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

#### USER SAFETY RECOMMENDATIONS

##### Users should:

- Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Wash outside of gloves then remove after handling this product. As soon as possible, wash thoroughly and change into clean clothing.

#### ENVIRONMENTAL HAZARDS

Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark.

Do not contaminate water when cleaning equipment or disposing of equipment washwaters or rinsate.

This chemical demonstrates the properties and characteristics associated with chemicals detected in ground water. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, can result in ground water contamination.

#### DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers can be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

#### AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE), and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 12 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

- Coveralls
- Chemical-resistant gloves made of any waterproof material
- Shoes plus socks

#### NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are not within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

Noncrop weed control is not within the scope of the Worker Protection Standard. See the definition on this label of noncrop sites.

Do not enter treated areas without protective clothing until sprays have dried.

#### SPRAY DRIFT MANAGEMENT

**Spray Drift:** Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment- and weather-related factors determine the potential for spray drift. The applicator and the grower are responsible for considering all these factors when making decisions.

Spray drift from applying this product can result in damage to sensitive plants adjacent to the treatment area. Only apply this product when the potential for drift to these and other adjacent sensitive areas (e.g. residential areas, bodies of water, known habitat for the threatened or endangered species, non-target crops) is minimal. Do not apply when the following conditions exist that increase the likelihood of spray drift from intended targets; high or gusty winds, high temperatures, low humidity, temperature inversions.

To minimize spray drift, the applicator should be familiar with and take into account the following drift reduction advisory information. Additional information may be available from state enforcement agencies or the Cooperative Extension on the application of this product.

The following drift management requirements must be followed to avoid off-target drift movement from aerial applications:

1. The distance of the outer most 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 air stream and never be pointed downwards more than 45 degrees.

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

#### **Importance of Droplet Size**

The best drift management strategy and most effective to reduce drift potential are to apply large droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential, but will not prevent drift if applications made improperly, or under unfavorable environmental conditions (see **Wind, Temperature and Humidity**, and **Temperature Inversions** section of this label).

#### **Controlling Droplet Size**

- Volume-Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.
- Pressure- Use the lower spray pressures recommended for the nozzle. Higher pressure reduces droplet size and does not improve canopy penetration. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.
- Number of Nozzles-Use the minimum number of nozzles that provide uniform coverage.
- Nozzle Orientation-Orienting nozzles so that the spray is released parallel to the airstream produces larger droplets than other orientation and is the recommended practice. Significant deflection from horizontal will reduce droplet size and increase drift potential.
- Nozzle Type-Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. Solid stream nozzles oriented straight back produce the largest droplets and the lowest drift. Do not use nozzles producing a mist droplet spray.
- Boom Length-For some use patterns, reducing the effective boom length to less than 3/4 of the wingspan or rotor length can further reduce drift without reducing swath width.

#### **Application Height**

Making applications at the lowest possible height that is safe and practical reduces exposure of droplets to evaporation and wind.

#### **Swath Adjustment**

When applications are made with a crosswind, the swath will be displaced downwind. Therefore, on the up and down wind edges of the field, the applicator must compensate for this displacement by adjusting the path of the application equipment upwind. Swath adjustment distances should increase with increasing drift potential (higher wind, smaller droplets, etc.).

#### **Wind**

Drift potential is lowest between wind speeds of 3-10 mph. However, many factors including droplet size and equipment type, determine drift potential at any given speed. Applications should be avoided below 3 mph due to variable wind direction and high inversion potential. NOTE: Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

#### **Temperature and Humidity**

When making applications in low relative humidity, set up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

#### **Temperature Inversions**

Applications should not occur during a temperature inversion because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small, suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a connected cloud (under low wind conditions) indicates an inversion, while smoke that moves upwards and rapidly dissipates indicates good vertical air mixing.

**Sensitive Areas**

The pesticide should only be applied when the potential for drift to adjacent sensitive areas (e.g. residential areas, bodies of water, known habitat for threatened or endangered species, nontarget crops) is minimal (e.g. when wind is blowing away from the sensitive areas). Leafy vegetables and cotton, among other crops, are sensitive to Impose® herbicide.

**Wind Erosion**

Avoid treating powdery dry or light sandy soils when conditions are favorable for wind erosion. Under these conditions, the soil surfaces should first be settled by rainfall or irrigation.

**Aerial Applications**

When aerial applications are permitted, do not make aerial applications at a height greater than 10 feet above the top of the largest plants unless a greater height is required for aircraft safety.

**PEANUTS****PRODUCT INFORMATION**

Impose herbicide is an early postemergent herbicide for use in peanuts grown only in the states of Alabama, Arizona, Arkansas, Florida, Georgia, Mississippi, New Mexico, North Carolina, Oklahoma, South Carolina, Texas, and Virginia.

**MODE OF ACTION**

Impose herbicide is readily absorbed through leaves, stems, and roots, and is then translocated rapidly throughout the plant, and accumulates in the meristematic regions. Treated plants stop growing soon afterwards. Chlorosis appears first in the newest leaves, and tissue death spreads from these points. It may require several days for susceptible weeds to die. Treated plants are killed because the herbicide inhibits the activity of the enzyme acetohydroxy acid synthase (AHAS or ALS). This is important because some naturally occurring weed biotypes of labeled weeds may not be controlled by Impose herbicide or other herbicides with the same AHAS or ALS inhibiting mode of action. Herbicides with this mode of action include the sulfonylureas (e.g. Accent®, Basis®, Classic®, Concert®, Exceed®, Permit®, Pinnacle®, herbicides, etc.), the sulfonamides (e.g. Broadstrike® herbicide, etc.) and the pyrimidyl benzoates (e.g. Staple® herbicide, etc.). If resistant weed biotypes are present in the field, tank-mix Impose herbicide and other herbicides with the same mode of action or apply sequentially with a registered herbicide with a different mode of action.

**CULTURAL CONSIDERATIONS**

**Soil moisture:** Soil moisture is critical for optimum Impose herbicide weed control. With adequate soil moisture, Impose herbicide will provide residual control of susceptible germinating weeds. Control of established weeds is dependent on the weed species and depth of the root system. Apply a minimum of 0.75 inches/acre of irrigation to activate Impose herbicide if sufficient rainfall does not fall within 5 days of application.

**Cultivation:** Cultivation at a minimum of 14 days after application of Impose herbicide can improve weed control if adequate soil moisture was not provided by rainfall or irrigation. Cultivation before 14 days after application of Impose herbicide is too early to receive the full benefit of the Impose herbicide application. Use shallow cultivation so that there is not too much movement of treated soil and weed seeds buried deep are not brought to the surface.

**REPLANTING**

If a field treated with Impose herbicide needs to be replanted, only peanuts can be replanted in the field. Do not make an additional application of Impose herbicide or Pursuit® herbicide to the soil where replanting will occur. Till the soil to a depth of 2 inches.

**APPLICATION INSTRUCTIONS**

**Ground Application:** Make a broadcast application of Impose herbicide in a minimum of 5 gallons of water per acre using ground application equipment. The actual minimum spray volume per acre is determined by the spray equipment used. Adequate spray coverage is important for maximum weed control. A complete and even distribution of spray is important. Avoid overlaps when spraying. Use a spray pressure of 20 to 40 psi. Reduced weed control can result if boomless or flood type nozzles are used.

**Chemigation Application:** Do not apply Impose herbicide through any type of irrigation system.

DO NOT apply Impose herbicide by helicopter, airplane, or any other aerial application equipment.

### MIXING INSTRUCTIONS

**Mixing with Water:** Fill the spray tank at least one-half full of clean water. With the pump and agitator running, add the specified amount of Impose herbicide using a calibrated measuring device. Fill the tank with the remaining water adding the nonionic surfactant, silicone-based adjuvant, or crop oil concentrate near the end of the filling process. Add an antifoaming product if it is needed. Maintain agitation while spraying.

**Mixing with Other Herbicide(s):** Impose herbicide can be tank-mixed with other herbicide(s) if the use is not prohibited by the label of the other herbicide(s). Read each label carefully and follow all label instructions regarding use rates, application methods, timing, restrictions, precautions, and weeds controlled. The most restrictive label precautions must be followed. Do not tank-mix Impose herbicide with any product that does not permit tank-mixing. Do not exceed label rates. Fill the spray tank at least one-half full of clean water. With the pump and agitator running, add the specified amount of Impose herbicide using a calibrated measuring device. Add the tank-mix herbicide, fill the tank with the remaining water adding the nonionic surfactant, silicone-based adjuvant or crop oil concentrate near the end of the filling process. Add an antifoaming product if it is needed. Maintain agitation while spraying. When mixing Impose herbicide with other tank-mix partners, always follow the following mixing sequence: add wettable powders, dispersible granules, or other dry formulations first, emulsifiable concentrates next, then Impose herbicides next, and spray adjuvants next.

Ensure mixing equipment is thoroughly cleaned before applying other products or spraying crops sensitive to Impose herbicide.

### SPRAYING CONSIDERATIONS

Do not apply Impose herbicide if wind, temperature inversion, or other weather conditions exist that could result in off target movement to adjacent areas and/or sensitive crops. Leafy vegetables and cotton, among other crops, are sensitive to Impose herbicide.

Do not apply if rainfall is threatening; rainfall within three hours after application of Impose herbicide can reduce weed control.

### LIST OF WEEDS CONTROLLED OR SUPPRESSED

An early postemergence application of Impose herbicide at a use rate of 4.0 ounces per acre plus an approved spray adjuvant will control or suppress the broadleaf weeds, grasses, and sedges listed below.

BROADLEAF WEEDS CONTROLLED	SCIENTIFIC NAME	MAXIMUM HEIGHT AT APPLICATION (inches)
Anoda, Spurred	<i>Anoda cristata</i>	2
Burgherkin	<i>Cucumis anguria</i>	2
Carpetweed	<i>Mollugo verticillata</i>	2
Citronmelon	<i>Citrullus lanatus var. citroides</i>	2
Cocklebur, Common	<i>Xanthium strumarium</i>	6
Crownbeard, Golden	<i>Verbesina encelioides</i>	2
Indigo, Hairy	<i>Indigofera hirsuta</i>	2
Morningglory, Cypressvine	<i>Ipomoea quamoclit</i>	3
Entireleaf	<i>Ipomoea hederacea var. integruscula</i>	3
Ivyleaf	<i>Ipomoea hederacea</i>	3
Pitted	<i>Ipomoea lacunosa</i>	3
Smallflower	<i>Jacquemontia tamnifolia</i>	3
Tall	<i>Ipomoea purpurea</i>	3
Pigweed, Amaranth, Palmer	<i>Amaranthus palmeri</i>	2
Redroot	<i>Amaranthus retroflexus</i>	4
Smooth	<i>Amaranthus hybridus</i>	4
Spiny	<i>Amaranthus spinosus</i>	4
Poinsettia, Wild	<i>Euphorbia heterophylla</i>	2
Pusley, Florida	<i>Richardia scabra</i>	2
Radish, Wild	<i>Raphanus raphanistrum</i>	4
Redweed	<i>Melochia corchorifolia</i>	4
Senna, Coffee	<i>Cassia occidentalis</i>	3
Sicklepod	<i>Cassia obtusifolia</i>	3
Sida, Prickly	<i>Sida spinosa</i>	2

<b>BROADLEAF WEEDS CONTROLLED (continued)</b>	<b>SCIENTIFIC NAME</b>	<b>MAXIMUM HEIGHT AT APPLICATION (inches)</b>
Spurge spp.	<i>Euphorbia</i> spp.	2
Starbur, Bristly	<i>Acanthospermum hispidum</i>	2
Velvetleaf	<i>Abutilon theophrasti</i>	2

<b>BROADLEAF WEEDS SUPPRESSED</b>	<b>SCIENTIFIC NAME</b>	<b>MAXIMUM HEIGHT AT APPLICATION (inches)</b>
Beggarweed, Florida*	<i>Desmodium tortosum</i>	2
Lambsquarter, Common	<i>Chenopodium album</i>	2
Ragweed, Common	<i>Ambrosia artemisiifolia</i>	2

\*Control of difficult-to-control weeds (e.g. Florida beggarweed), or weeds treated under dry conditions can be improved by cultivation at least 14 days after application of Impose herbicide.

<b>GRASS WEEDS CONTROLLED *</b>	<b>SCIENTIFIC NAME</b>	<b>MAXIMUM HEIGHT AT APPLICATION (inches)</b>
Crabgrass, Large	<i>Digitaria sanguinalis</i>	4
Crabgrass, Smooth	<i>Digitaria ischaemum</i>	4
Crowfootgrass	<i>Dactyloctenium aegyptium</i>	2
Johnsongrass, Rhizome**	<i>Sorghum halepense</i>	8-10
Johnsongrass, Seedling	<i>Sorghum halepense</i>	4
Panicum, Fall	<i>Panicum dichotomiflorum</i>	4
Panicum, Texas	<i>Panicum texanum</i>	2
Sandbur spp.	<i>Cenchrus</i> spp.	4
Signalgrass, Broadleaf	<i>Brachiaria platyphylla</i>	4

<b>GRASS WEEDS SUPPRESSED *</b>	<b>SCIENTIFIC NAME</b>	<b>MAXIMUM HEIGHT AT APPLICATION (inches)</b>
Goosegrass	<i>Eleusine indica</i>	2

\*Impose herbicide is active on many grass weeds, but a soil-active grass herbicide such as Prowl® or Sonolan™ must be applied according to label directions before Impose herbicide use. In order for Impose herbicide to control grass weeds that have escaped from the application of a soil applied grass herbicide, the grass weeds must be present at the time of application of Impose herbicide.

\*\*For control of rhizome johnsongrass, weeds must be at least 8 to 10 inches tall at application. Smaller weeds do not generally have enough leaf surface area to take up enough Impose herbicide for complete control.

<b>SEDGES CONTROLLED</b>	<b>SCIENTIFIC NAME</b>	<b>MAXIMUM HEIGHT AT APPLICATION (inches)</b>
Nutsedge, Purple	<i>Cyperus rotundus</i>	4
Nutsedge, Yellow	<i>Cyperus esulentus</i>	4

#### SPRAY ADJUVANTS

**In West Texas, New Mexico, and Oklahoma,** use only a crop oil concentrate or methylated seed oil concentrate or blends of these with a silicone-based based surfactant at 1 quart per acre. Do not use a nonionic surfactant. To insure uniform spray coverage, continuously agitate the sprayer during the spraying process.

**In areas outside West Texas, New Mexico and Oklahoma,** a nonionic surfactant containing at least 80% active ingredient can be used at a rate of 1 quart surfactant for each 100 gallons of spray solution. If a crop oil concentrate is used, apply at 1 quart per acre. To insure uniform spray coverage, continuously agitate the sprayer during the spraying process.

#### TANK MIXING

Impose herbicide can be tank mixed with other herbicides if the practice is not prohibited by the label of the tank mix partner.

When an adjuvant is to be used with this product, Makhteshim Agan of North America, Inc. suggests the use of a Chemical Producers and Distributors Association certified adjuvant.

#### Tank Mixing Precautions



- Read and carefully follow all applicable use directions, precautions, and limitations on the respective product labels. In interpreting the labels of tank mixed products, the most restrictive label limitations must apply.
- Do not exceed specified application rates.
- Gramoxone Max™ or Classic® herbicides in tank-mixes with Impose herbicide could result in increased injury to peanuts.
- Basagran® herbicide in tank-mixes with Impose herbicide could result in reduced control of broadleaf weeds.
- Reduced weed control may result if Impose herbicide is tank-mixed with fungicides or postemergence grass control herbicides.
- To avoid development of herbicide resistance, or unknown peanut response, do not apply Impose herbicide in combination with or following Pursuit® or Strongarm® herbicides.

#### ROTATIONAL CROPS

The following rotational crops can be planted after application of Impose herbicide in peanuts:

Time interval after Impose Application	Crop
Any interval	Peanuts
Four months	Bahiagrass, Rye, Wheat
Nine months	Field Corn, Snapbeans, Southern Peas, Soybeans, Tobacco
Eighteen months	Barley, Cotton <sup>1</sup> , Grain Sorghum, Oats, Onions <sup>2</sup> , Sweet Corn
Twenty-six months	All crops not otherwise listed
Forty months	Canola, Potatoes, Red Table Beets, Sugar Beets

Rotation crops following peanuts treated with Impose herbicide according to label directions should grow normally and not be injured. However, injury to rotational crops can occur since all risk cannot be eliminated due to environmental factors, soil types, moisture conditions and other factors. There is increased risk of rotational crop injury if products containing chlorimuron-ethyl (such as Classic® herbicide) or imazethapyr (such as Pursuit® herbicide) are applied in the same year as labeled rates of Impose herbicide. Follow the label directions for these products.

<sup>1</sup>For Arizona, Arkansas, New Mexico, Oklahoma, and Texas only: Cotton can be planted 18 months after Impose herbicide application in the states of Arizona, Arkansas, New Mexico, Oklahoma, and Texas unless drought conditions develop the year of Impose herbicide applications. Do not rotate to cotton at 18 months after Impose herbicide application if less than 15 inches of rainfall or irrigation is received from the time of Impose herbicide application through November 1 of the same year. If drought conditions develop the year of Impose herbicide application, cotton can be planted 26 months after Impose herbicide application.

<sup>2</sup>For Florida and Georgia only.

#### Precautions and Restrictions to follow when applications of Impose herbicide are made on peanuts:

- Some vine yellowing or reduction in vine growth may occur after application of Impose herbicide.
- Under adverse conditions (including but not limited to high pH > 7.5, low nutrient availability, saline conditions, and /or hardpans), Impose application may induce an adverse crop response.
- When adverse application conditions exist such as dry weather or larger weeds, use a crop oil concentrate at one quart per acre and fertilizer (spray grade ammonium sulfate at 2.5 lbs. per acre or liquid fertilizer at a rate of 1-2 quarts per acre).
- In order to prevent injury to sensitive crops, drain spray equipment used for Impose applications and thoroughly clean with water before applying other products or spraying other crops.
- Keep containers closed to avoid spills and contamination.
- Do not graze or feed treated peanut hay to livestock.
- Do not apply more than 0.063 lb. a.i./A imazapic (4.0 fluid oz/A of Impose herbicide) per application or per use season.
- Preharvest Interval: Do not harvest prior to 90 days after application.

#### PRODUCT INFORMATION

##### NONCROP AND CONSERVATION RESERVE PROGRAM (CRP) USES

For weed control and/or turf height suppression, mix Impose herbicide with water and an adjuvant and spray it on specified noncropland areas including those that may be grazed or cut for hay, on Federal Conservation Reserve Program (CRP) land, rangeland (see **Instructions for Rangeland Use** elsewhere in the label), and pastures.

**Impose can be applied to the following noncropland use sites:**

- rights-of-way (railroad, utility, pipeline and highway)
- railroad crossings
- utility plant sites
- petroleum tank farms
- pumping installations
- non-agricultural fence rows
- storage areas
- non-irrigation ditch banks
- prairie sites
- airports
- turf areas (on industrial, golf courses, recreation and non-residential sites)

Impose herbicide can be used for weed control in order to release certain legumes, wildflowers, crown vetch, native prairiegrass, wheatgrass, "wildtype" common Kentucky bluegrass, smooth brome grass, bahiagrass, bermudagrass and other grasses.

For weed control during the establishment of native prairiegrass and other grasses, use Impose herbicide as described in the **Revegetation with Prairiegrasses and other Forage Grasses** part of the label.

Impose herbicide kills plants because the herbicide inhibits the activity of the enzyme acetohydroxy acid synthase (AHAS or ALS). Plant leaves, stems and roots readily absorb Impose herbicide and translocate it throughout the plant where it accumulates in the meristematic tissue. Treated plants stop growing soon afterwards. Chlorosis appears first in the newest leaves, and tissue death spreads from these points. It may require several days to several weeks for susceptible weeds to die. Knowing about the activity on the AHAS or ALS enzyme is important because some naturally occurring weed biotypes of labeled weeds may not be controlled by Impose herbicide or other herbicides with the same inhibiting mode of action. If resistant weed biotypes are present in the field, tank-mix Impose herbicide and other herbicides with the same mode of action or apply sequentially with a registered herbicide with a different mode of action.

Soil moisture is critical for optimum Impose herbicide weed control. With adequate soil moisture, Impose herbicide will provide residual control of susceptible germinating weeds. Control of established weeds is dependent on the weed species and depth of the root system. Impose herbicide is rainfast within one hour after application.

Impose herbicide can be applied preemergence or postemergence to control annual and perennial grasses, broadleaf weeds and vine species and provide control of labeled weeds which germinate in the treated area. Direct application of Impose herbicide to the foliage of certain brush species and ornamentals could lead to injury. The best weed control is achieved when Impose herbicide is applied as a postemergence application, especially on perennial species. Since Impose herbicide must be taken up by the plant and translocated to the meristematic tissue before it becomes effective, weeds must be actively growing at the time of postemergence applications. Include an adjuvant in all spray solutions (see **Spray Adjuvants for Postemergence Applications** section of this label). Applications can be made as broadcast treatments with ground spray equipment or as spot treatments with backpack sprayers.

Even though Impose herbicide can be applied in the dormant or growing season, the weeds need to be actively growing for maximum control.

Impose herbicide can cause injury to desirable grass species if the application is made to grasses that are under stress due to disease, insect damage and/or other causes. Some yellowing of desirable grasses may occur after an application of Impose herbicide made during the growing season. This is dependent upon weather conditions and is usually short lived (2 to 4 weeks). Do not treat newly seeded or sprigged grass stands with Impose herbicide unless approved on this label (see **Revegetation with Prairiegrass and other Forage Grasses** section of this label) or authorized by Makhteshim Agan of North America, Inc. in a supplemental label.

**Important Precautions:**

1. Do not apply Impose herbicide to residential lawns.
2. Desirable trees and ornamental plants can be injured if rinsate from spray equipment used to apply Impose herbicide is allowed to wash or move into contact with plant roots.
3. Do not apply Impose herbicide to the inside of irrigation ditches.
4. Impose herbicide can be applied to non-irrigation ditches and low lying areas as long as the water has drained.

**Precautions and Restrictions to follow when making applications of Impose herbicide for weed control, native grass establishment, and turf growth, suppression on pastures, rangeland, and noncrop areas:**

- Do not use Impose herbicide on food or feed crops except as specified on this or supplemental labeling provided by Makhteshim Agan of North America, Inc.

- Do not cut treated area for hay within seven days after application.
- Do not use organophosphate insecticides on newly seeded areas treated with Impose herbicide unless severe injury or loss of stand can be tolerated.
- Do not apply this product through any type of irrigation system.
- Do not exceed 12 ounces of Impose herbicide per acre in one year.
- When tank mixing with other products, read and carefully follow all applicable use directions, precautions, restrictions, and limitations on the respective product labels. In interpreting the labels of tank mixed products, the most restrictive label limitations must apply.
- When making new plantings of prairiegrass or wildflowers, carryover from persistent herbicides such as sulfonyl-urea, imidazolinone, triazine, substituted urea, dinitroaniline, and other herbicides applied the previous year may result in compounded injury or death of desirable vegetation when treated with Impose herbicide.
- When making applications around desirable trees or ornamental plants, test small areas to determine the tolerance of a particular species to soil and/or foliar applications of Impose herbicide. See section entitled **Tolerance of Trees and Brush to Impose Herbicide**.
- DO NOT apply Impose herbicide through any type of irrigation system.

#### APPLICATION INSTRUCTIONS

**Ground Application:** Make a broadcast application of Impose herbicide in a minimum of 2 gallons of spray per acre using ground application equipment. Calibrate the sprayer to deliver the specified spray volume and pressure at the spray boom height to ensure proper coverage of foliage and/or soil surface. The actual minimum spray volume per acre is determined by the spray equipment used. Adequate spray coverage of weed foliage postemergence or soil surface preemergence is important for maximum weed control. A complete and even distribution of spray is necessary. Avoid overlaps when spraying. When applications are made using less than 10 gallons of spray mixture per acre, use special application equipment designed to make low volume applications. Use a spray pressure of 20 to 40 psi.

**Aerial Application:** Use 2 or more gallons of spray mix per acre. The actual minimum spray volume per acre is determined by the spray equipment used. Use adequate spray volume to provide accurate and uniform distribution of spray particles over the treated area and to avoid spray drift. Refer to the section entitled **Spray Drift Management** for additional precautions and restrictions. When making aerial applications, be especially careful to eliminate spray drift. Fixed wing aircraft and helicopters can be used to apply Impose herbicide. Ensure appropriate buffer zones are maintained when using fixed wing aircraft.

**Spot Treatment Application:** In preparing the spray solution, mix thoroughly in water 0.25 to 1.5% (0.3 to 1.9 oz./gal. water) Impose herbicide plus an adjuvant (see **Spray Adjuvants for Postemergence Applications** section of this label). Use a methylated seed oil at 1% v/v as the spray adjuvant except when treating seedling prairiegrasses and wildflowers. When making spot applications, spray coverage must be sufficient to moisten the leaves but not to the point of runoff. Make sure the mixing container is opaque to sunlight or otherwise treated to shield for UV light. Impose herbicide breaks down when mixed with water and exposed to sunlight. Mixtures of Impose herbicide must be used within two days of being prepared to prevent breakdown of the active ingredient and maintain maximum effectiveness. See section on desired species and do not exceed the specified application rate per acre. Also see the sections entitled **Weeds Controlled** and **Special Weed Control**.

**All Applications:** Do not apply during windy or dusty conditions unless applications are being made with a drift control agent and/or an enclosed shielded spray system. Do not apply if rainfall is threatening. Rainfall within 1 hour of an Impose herbicide application may reduce weed control. Uniformly apply specified rate and include a spray adjuvant (see **Spray Adjuvants for Postemergence Applications** section of this label). A foam reducing agent can be added at the specified rate if needed. Aerial applications to target species growing under the canopy of trees and brush may not receive sufficient coverage for effective control. For fall applications, delaying aerial application until trees and brush have dropped their leaves can improve coverage. See **Special Weed Control** and **Tolerance of Trees and Brush to Impose Herbicide** sections of this label for additional details. Avoid overlapping sprays.

Immediately and thoroughly clean all spray equipment, as prolonged exposure of this product to uncoated steel (except stainless steel) surfaces can cause corrosion and failure of the exposed part.

#### MIXING INSTRUCTIONS

**Mixing with Water:** Fill the spray tank at least one-half full of clean water. With the pump and agitator running, add the specified amount of Impose herbicide using a calibrated measuring device. Fill the tank with the remaining water adding the surfactant near the end of the filling process. Add an antifoaming product if it is needed. Maintain agitation while spraying.

**Mixing with Other Herbicide(s):** Impose herbicide can be tank-mixed with other herbicide(s) if the use is not prohibited by the label of the other herbicide(s). Read each label carefully and follow all label instructions regarding use rates, application methods, timing, restrictions, precautions, and weeds controlled. The most restrictive label is the one that must be followed. Do not tank-mix Impose herbicide with any product that does not permit tank-mixing. Do not exceed label rates. Fill the spray tank at least one-half full of clean water. With the pump and agitator running, add the specified amount of Impose herbicide using a calibrated measuring device. Add the tank-mix herbicide, fill the tank with the remaining water adding the nonionic surfactant, organosilicate adjuvant or crop oil concentrate near the end of the filling process. Add an antifoaming product if it is needed. Maintain agitation while spraying. When mixing Impose herbicide with other tank-mix partners, always follow the following mixing sequence: add wettable powders, dispersible granules, or other dry formulations first, emulsifiable concentrates next, then Impose herbicide next, and spray adjuvants next.

#### SPRAY ADJUVANTS FOR POSTEMERGENCE APPLICATIONS

To achieve control of weeds when Impose herbicide is applied postemergence, a spray adjuvant must be added. Adjuvants vary in their contents and by selecting the correct adjuvant phytotoxicity to desirable vegetation can be reduced or eliminated. Use low phytotoxic adjuvants. Adjuvants containing high amounts of alcohols, paraffin based petroleum oils and other compounds which can increase phytotoxicity must be avoided.

**Methylated Seed Oils or Vegetable Oil Concentrate:** The preferred spray adjuvant for use with Impose herbicide is a methylated vegetable-based seed oil concentrate containing 5 to 20% surfactant and the remainder methylated seed oil (MSO). For MSO, use a rate of 1 ½ to 2 pints per acre. Best results are achieved when MSOs are applied with Impose herbicide in total spray volumes of 30 gallons per acre or less. The advantage of using the MSO decreases as the spray volume increases to higher volumes. If spray volumes above 30 gallons per acre are used, mix the MSO with Impose herbicide at a rate of 1% of the total spray volume. As an alternative, a non-ionic surfactant, as described below could be used when Impose herbicide is applied at spray volumes above 30 gallons per acre. MSOs have been shown to aid in the deposition and uptake of Impose herbicide in hard-to-control perennials, in weeds with waxy leaf surfaces and in weeds under stressed conditions.

Do not use a MSO on newly emerged seedling prairiegrass or wildflowers as injury could occur.

**Nonionic Surfactants (NIS):** Use a NIS at 0.25% v/v (i.e. 1 quart/100 gallons) or higher in the spray solution. For best results, use an NIS containing 60% surfactant in the formulated product and having a hydrophilic to lipophilic balance ratio (HLB) between 12 and 17. Do not use alcohols, fatty acids, oils, ethylene glycol, or diethylene glycol to meet these requirements.

In bermudagrass pastures and hay meadows best results will be achieved if a NIS is used with Impose herbicide.

**Silicone-Based Surfactants:** Use caution if a silicone-based surfactant is used. Although a silicone-based surfactant may allow greater spreading on the leaf surface when compared to a conventional NIS, it may dry too quickly and limit the herbicide's uptake into the plant, or at higher spray volumes it may result in greater spray "run-off" from the plant. Review the specific rate instructions on the manufacturer's label.

**Fertilizer/Surfactant Blends:** Use of a nitrogen-based fertilizer in combination with the specified rate of a NIS or MSO has been shown to improve the uptake of Impose herbicide in plants with waxy leaf surfaces. A rate of 2 to 3 pints per acre of fertilizers such as 28% N, 32% N, 10-34-0, or ammonium sulfate in combination with the specified rates of NIS or MSO will aid in the burndown control with Impose herbicide. Injury to desired plant species and newly emerged seedling prairiegrass and wildflowers may also be increased with the use of a fertilizer in combination with Impose herbicide. Weed control will likely be poor if Impose herbicide is applied in combination with a fertilizer without a NIS or MSO. No additional spray adjuvant is required if the fertilizer is the spray carrier for Impose herbicide.

#### TANK MIXES

For added control of late season annual grasses and certain broadleaf weeds in noncrop areas, tank-mix Impose herbicide with Pendulum® herbicide. Impose herbicide can be mixed with other herbicides for additional control in noncrop areas including Accord™, Roundup™ Pro, glyphosate, Arsenal® or Vegetation Manager® Imazapyr 2SL herbicide, Sahara® DG or Mohave™ 70 EG herbicide, diuron, Campaign™, Finale™, Garlon™ 3A or Vegetation Manager Triclopyr 3SL, MSMA, Vanquish™, Oust™ (or SFM 75), Escort™ (or Metsulfuron Methyl DF), Tordon™ (or Picloram 22K), or other labeled products. To test for the compatibility of any other herbicides not listed with Impose herbicide, use a jar test. Mixing Impose herbicide with 2,4-D or other phenoxy-type herbicides could lead to reduced control of perennial grass weeds.

Do not tank mix Impose herbicide with organophosphate insecticides or use in the same year when using Impose herbicide on newly planted areas. Tank mix instructions for Impose herbicide use on bermudagrass pastures is found in the **Directions for Use in Bermudagrass Pastures and Hay Meadows** part of this label. When tank-

mixing, always consult manufacturer's labeling for rates and weeds controlled. Always follow the more restrictive label when using Impose herbicide with a tank-mix partner.

#### **FOR WEED CONTROL IN PASTURE AND RANGELAND**

To control weeds in pasture and rangeland, apply a broadcast treatment of Impose herbicide at 2 to 12 ounces per acre. For spot treatments, use Impose herbicide at 0.25% to 1% solution with 1.0% methylated seed oil. Specific use directions are found below.

**Rangeland Use Instructions:** Apply Impose herbicide to rangeland for the control of undesirable (non-native, invasive, and noxious) plant species in order to (1) aid in the establishment of desirable rangeland plant species; (2) aid in establishment of desirable rangeland vegetation after a fire; (3) aid in the reduction of vegetation that would fuel a wildfire; (4) aid in the release of existing desirable rangeland vegetation from the competitive pressure of undesirable plant species; and (5) aid in habitat improvement for wildlife.

Protection of threatened and endangered plants is important when applying Impose herbicide to rangeland. Therefore, federal agencies must follow NEPA regulations to ensure protection of threatened or endangered plants, state agencies must work with the Fish and Wildlife Service or the Service's designated state conservation agency to ensure protection of threatened or endangered plants, and other organizations or individuals must operate under Habitat Conservation Plan if threatened or endangered plants are known to be present on the land to be treated.

See the appropriate sections of this label for specific use directions for the vegetation management objective desired.

Do not apply Impose herbicide to rangeland until specific weeds appear. A single application of Impose herbicide can be used to control annual weeds such as cheatgrass, downy brome and medusahead rye as long as it is used in conjunction with available IPM practices. For rangeland applications to control cheatgrass, medusahead, annual mustards, etc., apply Impose herbicide preemergence or early postemergence prior to planting. For best results for cheatgrass control, make a late summer or fall application of Impose herbicide before cheatgrass emerges and prior to planting desirable species. Impose herbicide can be used in this same manner as a site preparation before planting sagebrush seedlings. If making an application of Impose herbicide in the spring when planting a tolerant grass species, use a rate of 2 to 4 ounces per acre. Rates above 4 ounces per acre may result in thinning or loss of stand, especially in seedling sideoats, blue grama or buffalograss. Perennial weeds like leafy spurge, Dalmatian toadflax, and Russian knapweed can be controlled in most cases with a single broadcast application of Impose herbicide. Spot treatments with Impose herbicide may be necessary to control any weeds not controlled by the broadcast application. Long term weed control in rangeland is best achieved when Impose herbicide is used in conjunction with land management practices that promote growth and sustainability of desired plant species.

#### **DIRECTIONS FOR USE IN BERMUDAGRASS PASTURES AND HAY MEADOWS**

For control of winter and summer annual and perennial grasses in bermudagrass pastures and hay meadows, use a postemergence application of Impose herbicide at 4 to 12 ounces per acre. Specific rate and timing instructions are provided below. Use of Impose herbicide is acceptable on common and coastal varieties of bermudagrass including, but not restricted to Tifton 44, 78, and 85, Alicia and Russell. It is possible that bermudagrass growth may be suppressed for 30 to 45 days depending on growth conditions after application. Be aware that Jiggs bermudagrass is more sensitive to Impose herbicide than other bermudagrass types. If these growth responses are not acceptable, do not use Impose herbicide on bermudagrass.

Complete spray coverage is necessary to achieve the desired level of weed control. Be sure to use a sprayer that is calibrated to deliver the specified spray volume and pressure at the spray boom height to ensure complete coverage. Decreased weed control could result if boomless or flood type nozzles are used.

**Use Restrictions:** (1) Do not apply to drought stressed bermudagrass; (2) Do not apply during transitions from dormancy to full green-up; (3) Do not apply to newly aerated fields for 30 days after aerations; (4) Do not use for the establishment of sprigged or seeded bermudagrass; (5) Do not use on World Feeder varieties of bermudagrass.

**Spring Applications and Bermudagrass Tolerance:** Bermudagrass growth can be suppressed if Impose herbicide is applied before the bermudagrass has reached 100% green-up. If Impose herbicide is applied when the bermudagrass is in the transition from winter dormancy to 100% green-up, green-up and growth will be delayed. Carefully inspect the new bermudagrass growth in the field to be sure all stolons have begun to grow. Application of Impose herbicide to a field that appears green, but where some to many stolons have not begun to grow, will still cause significant reductions in bermudagrass growth and development. It is important to delay application of Impose herbicide until 100% green-up has been achieved.

**General Rate instructions:** Make a postemergent application of Impose herbicide at 4-6 ounces per acre to control most annual and some perennial weeds in bermudagrass pastures and hay meadows. Use the lower rate against

target weeds that are small and the higher rate against target weeds that are older, larger or have been cut multiple times. Specific rate instructions are given in the table below.

**Postemergence Control of Summer Annual and Perennial Grass Weeds:** When bermudagrass has reached complete green-up and target weeds are at the growth stage desired, apply Impose herbicide according to the rates and growth stages in the table below. Bermudagrass green-up and subsequent growth will be delayed if Impose herbicide is applied too early during the transition between dormancy and full green-up. Some bermudagrass yellowing and stolon internode shortening can occur with specified rates of Impose herbicide. Bermudagrass recovery will be shortened if Impose herbicide is applied with a nitrogen fertilizer (32-0-0 or 28-0-0) used as the spray carrier.

After complete bermudagrass green-up, apply Impose herbicide postemergence at 4 to 6 ounces per acre for control of summer annual grasses (2 to 4 leaf stage). Use higher rates of 6 to 8 ounces per acre when target weeds are at or above the boot stage. Always use a surfactant with Impose herbicide except when the spray carrier is liquid fertilizer. Some preemergence control of some annual grasses will be obtained when Impose herbicide is applied postemergence to target weeds.

Summer perennial grasses are controlled when Impose herbicide is applied after complete bermudagrass green-up at the rate of 6 to 12 ounces per acre. If higher rates are necessary to control target weeds, make a fall application of Impose herbicide before a killing frost occurs. If a fall application is planned and the bermudagrass is cut for hay, be sure the target weeds have adequate regrowth before making an application of Impose herbicide. Always use a-surfactant with Impose herbicide except when the spray carrier is liquid fertilizer.

**Impose herbicide Rates for Postemergent Summer Annual Grass Control<sup>1</sup>**

Common Name	Species	Weed Height (inches) <sup>2</sup>	Rate per Acre (fluid ounces)
Large crabgrass	<i>Digitaria sanguinalis</i>	≤4	4
		>4	6
Southern crabgrass	<i>Digitaria ciliaris</i>	≤4	4
		>4	6
Smooth crabgrass	<i>Digitaria ischaemum</i>	≤4	4
		>4	6
Giant foxtail	<i>Setaria faberi</i>		6
Green foxtail	<i>Setaria viridis</i>	≤4	4
		>4	6
Yellow foxtail	<i>Setaria glauca</i>	≤4	4
		>4	6
Texas panicum	<i>Panicum taxanum</i>		6
Fall panicum	<i>Panicum dichotomiflorum</i>		6
Broadleaf signalgrass	<i>Bracharia platyphylla</i>	≤4	4
		>4	6
Annual jewgrass	<i>Microstegium vimineum</i>	≤4	4
		>4	6
Barnyardgrass	<i>Echinochloa crus-galli</i>	≤4	4
		>4	6
Sandbur	<i>Cenchrus</i> spp.	≤4	4
		>4	6

<sup>1</sup>Be sure bermudagrass has completely greened up as an application of Impose herbicide could delay green-up and subsequent growth if application is made too early before full green-up. If delayed green-up will be an issue, do not apply Impose herbicide.

<sup>2</sup>Use the higher rate when the summer annual grasses are older, larger or have been subjected to multiple cuttings.

**Impose herbicide Rates for Postemergent Summer Perennial Grass Control<sup>1</sup>**

Common Name	Species	Weed Height (inches) <sup>2</sup>	Rate per Acre (fluid ounces)
Johnsongrass	<i>Sorghum halepense</i>	18-24	8
		>24	12
Vaseygrass	<i>Paspalum urvillei</i>	4-8	6-8
Nutsedge	<i>Cyperus</i> spp.	≤4	4
		>4	6
Bahiagrass	<i>Paspalum notatum</i>	4-8	6-8

Dallisgrass <sup>3</sup>	<i>Paspalum dilatatum</i>	4-8	8-12
Smutgrass <sup>3</sup>	<i>Sporobolus indicus</i>	4-8	8-12

<sup>1</sup>Be sure bermudagrass has completely greened up as an application of Impose herbicide could delay green-up and subsequent growth if application is made too early before full green-up. If delayed green-up will be an issue, do not apply Impose herbicide.

<sup>2</sup>Use the higher rate when the summer annual grasses are older, larger or have been subjected to multiple cuttings.

<sup>3</sup>Suppression

**Postemergent Control of Winter Annual and Perennial Grass Weeds:** When bermudagrass is dormant, make a postemergent application of Impose herbicide at a rate of 6 to 12 ounces per acre. Be sure there is no green tissue at the root crown or on stolons because an application of Impose herbicide to green tissue may delay bermudagrass green-up and subsequent growth. In the deep south where mild winters often occur, bermudagrass may not go completely dormant. Consequently, avoid making an application of Impose herbicide if delayed green-up will be an issue. Control of larger winter annual and cool season perennial grasses will be improved if Impose herbicide is applied with 16 to 24 ounces per acre of Roundup Ultra™ or glyphosate equivalent. Always use a surfactant with Impose herbicide except when the spray carrier is liquid fertilizer.

**Impose herbicide Rates for Postemergent Winter Annual and Cool Season Perennial Grass Control**

Common Name	Species	Weed Height (inches)	Rate per Acre (fluid ounces)
Annual Ryegrass <sup>1</sup>	<i>Lolium multiflorum</i>	≤6	6
		>6	10
Tall Fescue	<i>Festuca arundinacea</i>		12
Wild Oats	<i>Avena fatua</i>	≤6	6
		>6	10
Little Barley	<i>Hordeum pusillum</i>	≤6	4
		>6	6

<sup>1</sup>Because AHAS and ALS resistant annual ryegrass occurs throughout the southeast, tank mix 16 to 24 ounces per acre of Roundup Ultra or glyphosate equivalent with Impose herbicide when making applications to control annual ryegrass.

**Spray Adjuvants:** To promote the growth and recovery of bermudagrass, add 10 to 20 gallons per acre of liquid fertilizer (32-0-0 or 28-0-0) as the spray carrier with Impose herbicide. Do not add additional spray adjuvant when liquid fertilizer is used as the spray carrier. For additional spray adjuvant directions, go to the **Spray Adjuvants for Postemergence Applications** part of this label. Do not use crop oil concentrates (COC) as a spray adjuvant with Impose herbicide.

**Tank Mixtures:** Impose herbicide can be tank mixed with a number of broadleaf herbicides for broadleaf weed control. Impose herbicide can be tank mixed with Weedmaster®, Grazon™, Vegetation Manager Triclopyr 4E (or Remedy™), Redeem™, Metsulfuron Methyl DF (or Ally™), 2-4,D, and Roundup Ultra or glyphosate equivalent. Applications with tank mixes of 2,4-D that exceed one pound active ingredient per acre and applications with tank mixes of triclopyr amine, such as Vegetation Manager Triclopyr 3SL, that exceed 1½ pounds active ingredient per acre can reduce efficacy on target grass weed species.

**FOR USE ON FEDERAL CONSERVATION RESERVE PROGRAM (CRP) LAND**

Use Impose herbicide at rates up to 12 ounces per acre per year for control of weeds on Federal Conservation Reserve Program (CRP) land. Specific instructions for each intended use can be found elsewhere in this label. Minimum plant-back intervals vary with the rates of Impose herbicide used. See the minimum plant-back intervals provided below.

**Rotational Crop Restrictions:** The following rotational crops can be planted after applying Impose herbicide. Planting rotational crops earlier than the specified interval may result in crop injury.

Impose Use Rate (ounce/A)	Minimum Plant Back Interval (Months After Impose Herbicide Application)				
	12	12	18	26	40
≤4	12	12	18	26	40
5-8	12	14	22	30	44
9-12	12	18	24	36	48
<b>Rotational Crops</b>	Bahiagrass CLEARFIELD® corn hybrids	Snapbeans Southern peas Soybeans	Barley Cotton <sup>1</sup> Grain sorghum	Field corn <sup>2</sup> All crops not otherwise listed	Canola <sup>2</sup> Potatoes <sup>2</sup>

	Peanuts Rye Wheat	Tobacco	Oats	or included for use on this label <sup>2</sup>	Red table beets <sup>2</sup> Sugar beets <sup>2</sup>
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<sup>1</sup>For Arizona, New Mexico, Oklahoma, and Texas only: In these states, cotton can be planted 18 to 24 months after Impose herbicide application unless drought conditions develop in the year of application. If less than 15 inches of rainfall or irrigation are received from the time of Impose herbicide application and November 1 of the same year, do not rotate to cotton at 18 to 24 months after application. If such drought conditions develop, wait to plant cotton until 26, 30, and 40 months after Impose herbicide application at the rates provided in the above table.

<sup>2</sup>A field bioassay of the intended rotational crop must be completed for these selected crops and for all other crops not otherwise listed or included on this label after the minimum plant back interval has elapsed. The field bioassay consists of planting a test strip across the previously treated field and grown to maturity. Be sure the test strip is planted in low areas as well as high spots and on different soil types and soil pH levels across the field. The intended rotational crop may be planted the following year if there is no crop injury in the test strip.

It is impossible to eliminate all risks associated with the use of Impose herbicide; therefore, plant-back crop injury is always possible even when label rates and use directions are followed. If crop injury is a concern after using Impose herbicide, then a field bioassay with the desired crop prior to planting.

**FOR FOLIAR AND SEEDHEAD SUPPRESSION OF BAHIAGRASS, COOL SEASON GRASSES, AND SUPPRESSION OF SOME ANNUAL WEEDS**

**Bahiagrass:** In unimproved areas, apply Impose herbicide at 2 to 6 ounces per acre to suppress growth and seedhead development in bahiagrass. For best results, apply Impose herbicide after green-up. Use the lower rate of 2 ounces per acre in North and South Carolina because higher rates may result in turf thinning. Temporary turf discoloration may occur depending on the rate of Impose herbicide used as well as other factors such as surfactant type and environmental conditions. Severe injury may occur if Impose herbicide is applied to turf under any type of stress. If applied before mowing, remember that new growth will be suppressed so adjust the mower height to leave adequate existing foliage. If applied after mowing, adjust the mower to leave existing foliage or wait for re-growth before making the application. Do not use a methylated seed oil adjuvant with Impose herbicide.

IMPOSE HERBICIDE	PHYTOTOXICITY	LENGTH OF SUPPRESSION
2 ounce	None to low	Partial to season long
3 to 6 ounce	Low to moderate	Season long

Use 8 ounces of Impose herbicide for control of winter annual weeds. Make the application when weeds are actively growing but while the bahiagrass is still dormant. A subsequent application of Impose herbicide at 3 to 4 ounces per acre can be made in the spring after bahiagrass green-up for the suppression of seedheads and foliage.

**Cool Season Grasses: KY31 Tall Fescue and “Wildtype Common” Kentucky Bluegrass:** For foliar and seedhead suppression of these cool season grasses, apply Impose herbicide at 2 to 4 ounces per acre. Do not use a methylated seed oil adjuvant with Impose herbicide on these grasses. Use of an adjuvant with the lower rate will enhance performance; however use of a surfactant with the higher rate (4 ounces) could cause excessive injury or mortality of tall fescue. Application of Impose herbicide to turf types of tall fescue and Kentucky bluegrass could result in severe injury or stand loss.

**Wheatgrass:** Impose herbicide can be applied for foliar and seedhead suppression of crested wheatgrass and intermediate wheatgrass. Use 6 to 10 ounces per acre for crested wheatgrass and 6 to 12 ounces per acre for intermediate wheatgrass. Although other wheatgrass species may be suppressed, it is best to determine effectiveness by first applying Impose herbicide to a limited area. Use of 2,4-D or products containing 2,4-D in a tank-mix with Impose herbicide may decrease the desired effectiveness. The potential of turf injury may be reduced when Impose herbicide is tank mixed with Garlon (Triclopyr 3SL or Triclopyr 4EC), Tordon (Picloram 22K), Transline™, and Vanquish. Severe injury may occur if Impose herbicide is applied to turf under stress.

**FOR THE CONTROL OF UNDESIRABLE WEEDS IN BERMUDAGRASS NOT BEING GROWN FOR FORAGE OR HAY**

Impose herbicide will control summer and winter annual weeds as well as some perennial weeds in bermudagrass turf found along roadsides, utility rights-of-way, railroad crossings, at airports, in non-irrigation ditches. Tolerance to Impose herbicide varies with different bermudagrass types. Therefore, some foliar, stolon and seedhead suppression may occur depending on turf type, application timing and herbicide rate. When applying Impose herbicide to bermudagrass turf it is important to (1) make application only after full bermudagrass green-up otherwise a delay in green-up may occur; (2) add a surfactant; (3) do not apply to bermudagrass under stress; (4) allow time for bermudagrass foliage re-growth after mowing before making an application because some internode suppression (from simultaneously mow/spray operations) may prevent bermudagrass from quickly recovering from mowing.



**Winter Annual Weed Control:** Make application prior to winter weed germination or while winter weeds are actively growing. Use Impose herbicide at 4 to 12 ounces per acre. A delay in bermudagrass green-up can occur if Impose herbicide is applied too early in the spring.

**Summer Annual Weeds:** For best results, make application preemergence or early postemergence before weeds have reached a height of 6 inches. Use Impose herbicide at 4 to 12 ounces per acre. Control of larger weeds may be possible depending on growing conditions, species susceptibility, adjuvant selection and tank-mix partner.

**Perennial Weeds:** Use Impose herbicide at 8 to 12 ounces per acre postemergence after weeds are large enough for herbicide uptake. For control of a specific weed species, see the **Special Weed Control** part of this label. Increased control of perennial weeds can be achieved by tank mixing Impose herbicide with Accord or Roundup Pro.

**Bahiagrass Control:** Make a postemergence application of Impose herbicide at 8 to 12 ounces per acre. For control of a specific weed species, see the **Special Weed Control** part of the label. Increased control of perennial weeds can be achieved by tank mixing Impose herbicide with Accord or Roundup Pro at 12 to 16 ounces per acre.

#### **IMPOSE HERBICIDE RATES AND TIMINGS FOR SPECIFIC BERMUDAGRASS TYPES WITH REGARD TO WEED CONTROL AND TURF TOLERANCE.**

**Common Bermudagrass:** Common bermudagrass is very tolerant to Impose herbicide. The weed control spectrum can be improved with tank-mixes of Impose herbicide with Roundup Pro, Accord, or glyphosate; however, these tank-mixes may also increase turf phytotoxicity by causing stolen internode shortening and seedhead suppression for the first 8 weeks after application.

**Established Coastal Bermudagrass:** The use of 2 to 12 ounces per acre of Impose herbicide on coastal bermudagrass will control labeled weeds and provide foliar and seedhead suppression. Do not use Impose herbicide on World Feeder varieties of bermudagrass. Activity of Impose herbicide increases as the rate increases. Beware that applying a tank-mix combination of Impose herbicide and Roundup Pro, Accord, or glyphosate on coastal bermudagrass may result in death or excessive injury.

**Turf Type Bermudagrass:** Tolerance to Impose herbicide varies in turf type bermudagrass varieties. At rates of 2 to 6 ounces per acre, Impose herbicide will provide some annual weed control and foliar and seedhead suppression. Application of Impose herbicide at rates above 6 ounces per acre could result in excessive injury or death.

#### **FOR THE CONTROL OF UNDESIRABLE WEEDS IN UNIMPROVED CENTIPEDE GRASS**

To control annual broadleaf and grass weeds in unimproved centipede grass, apply Impose herbicide at 4 to 8 ounces per acre with a surfactant. Make the application after the centipede grass has reached full green-up and do not apply to grass that is under stress. Be sure to allow time for centipede grass foliage re-growth after mowing before making an application because some internode suppression (from simultaneously mow/spray operations) may prevent the centipede grass from quickly recovering from mowing.

#### **FOR CONTROL OF UNDESIRABLE WEEDS IN SMOOTH BROMEGRASS, WILDTYPE COMMON KENTUCKY BLUEGRASS AND WHEATGRASSES**

**Smooth Bromegrass and "Wildtype" Common Kentucky Bluegrass:** For control of labeled grass and broadleaf weeds (see **Weeds Controlled** and **Special Weed Control** sections of this label below) as well as growth suppression, apply Impose at 4 to 8 ounces per acre in the spring after these grasses have reached 100% green-up. A delay in green-up may occur if application is made before full green-up. Higher rates of 8 to 12 ounces per acre can be applied in the spring; however, excessive growth suppression can result. A fall application of Impose herbicide at 8 to 12 ounces per acre can be made to control perennial weeds (see **Special Weed Control** section of this label below). Treatment of smooth bromegrass with Impose herbicide may result in foliar height and seedhead suppression.

**Wheatgrass:** For control of labeled grass and broadleaf weeds apply Impose herbicide at 4 to 12 ounces per acre. Foliar height and seedheads may be suppressed when wheatgrass is treated with Impose herbicide.

#### **FOR CONTROL OF UNDESIRABLE WEEDS IN FORAGE LEGUMES INCLUDING PERENNIAL PEANUTS AND CROWN VETCH**

**Newly Sprigged And Established Perennial Peanut:** Impose herbicide can be applied at 4 ounces per acre to perennial peanut pastures to weeds that are 4 inches or less in height. Add a non-ionic surfactant at 0.25% v/v to the spray mix.

**Newly Seeded Crown Vetch:** To aid in stand establishment and reduce weed competition, apply Impose herbicide at 4 ounces per acre to newly seeded beds.

**Established Crown Vetch in Noncropland Areas:** For control of labeled grass and broadleaf weeds (see the **Weeds Controlled** and **Special Weed Control** sections of this label below for specific rates), apply Impose

herbicide at 8 to 12 ounces per acre to established crown vetch beds. Depending on time of application, some internode shortening and minor tip chlorosis may occur after application of Impose herbicide.

To avoid potential injury, apply Impose herbicide during winter dormancy or in the early spring. If applied after May, Impose herbicide may cause increased injury or defoliation of crown vetch. Injury will be increased if a surfactant such as a crop oil concentrate or d-Limonene based product is used. If applied during the fall when crown vetch is actively growing, Impose herbicide may cause severe injury or stand loss.

#### **FOR USE IN REVEGETATION WITH PRAIRIEGRASSES AND OTHER FORAGE GRASSES**

Impose herbicide controls many annual and perennial grass and broadleaf weeds when applied at 2 to 12 ounces per acre in newly established and existing stands of prairiegrasses (see below for details and tolerant species) grown in such areas as pasture, rangeland (see **Instructions For Rangeland Use** section of this label), Federal Conservation Reserve Program (CRP) land and noncropland areas such as roadsides, industrial sites, prairie restoration sites, drainage ditch bank and other similar locations. Note that some local ecotypes or varieties of prairiegrasses may be suppressed by Impose herbicide. Poor stands may also result from other factors such as poor soil, cool temperatures, poor seedling vigor, excessive moisture, dry weather after emergence and others. Herbicide residue, poor soils and other stress factors can also lead to poor seedling vigor, increased injury and possible mortality. Makhteshim Agan of North America, Inc. cannot be held responsible for such unforeseen factors. If tolerance is not known, be sure to try Impose herbicide on a small area first. Impose herbicide reduces weed competition and allows grass seedlings to become established. Perennial noxious weeds in established grass stands may also be controlled with Impose herbicide if the application is made postemergence as a foliar treatment.

#### **Important Considerations:**

1. Always add an adjuvant with Impose herbicide.
2. On established grass stands, use a methylated seed oil.
3. Use a nonionic surfactant on newly emerged seedling grasses.
4. Use of a liquid fertilizer as a carrier will reduce grass tolerance and must not be used on newly emerged seedling grasses.

**Stand Establishment:** Since newly emerged grasses can be sensitive to Impose herbicide and/or the adjuvant used, best results in establishing mixed grass stands are attained when the application is made at planting before grass seedlings emerge. If grasses have started to emerge, the application of Impose herbicide must be delayed until the grasses have reached the five-leaf stage. Use only a nonionic surfactant or silicone-based surfactant with Impose herbicide on seedling grasses. Do not use a methylated seed oil at this timing as some injury could result. Annual weeds are controlled by Impose herbicide applied either preemergence or early postemergence (See the **Weeds Controlled** section of this label for maximum height of weeds for control). Rates and timing are discussed in the section below. Some stand thinning may result from a postemergence application of Impose herbicide because seedling grasses have varying tolerance to spray adjuvants. If the seedling grasses have reached the five-leaf stage, they are generally more tolerant to different spray adjuvants. Herbicide-carry-over can be a problem if grasses are planted into a field that was row cropped the previous year (see **Directions for Use** section of this label).

**Rates and Control:** Impose herbicide will provide control and/or suppression of many annual grass and broadleaf weeds. Apply 2 to 6 ounces per acre for annual weed control in fields cropped the previous year and/or fields where grass/forb mixtures are planted. In dry climates of the northernmost U.S. and for late season plantings into clean seedbeds, use lower rates. Use Impose herbicide as low as 2 ounces per acre when soil pH is greater than 7, there is a low CEC, or in a coarse texture soil with low clay or organic matter content. Use higher rates when there is high organic matter, high rainfall, heavy weed infestation and heavy plant residue and a long growing season (southern portions of Illinois, Indiana, Missouri, and Ohio, etc.). When controlling giant ragweed, or providing control/suppression of perennial weeds, use Impose herbicide at 8 to 12 ounces per acre. These high rates may, however, result in stunting or stand thinning. The length and amount of suppression will be related to soil type, environmental conditions, weed pressure and chemical residue. Additional details are provided below for specific grass timings and tolerances.

**Established Stands:** Application of Impose herbicide as an early postemergence treatment to annual grasses and broadleaf weeds will provide the best results. See the **Special Weed Control** section of this label for instructions for control of perennial weeds. Some foliar and/or seedhead height suppression may result in established grass stands when the high rates of Impose herbicide are used. This is especially likely when there is few weeds, little rainfall, light soils and short growing seasons. Reserve lower rates for use on light weed infestations or when desirable wildflowers and legumes, including crown vetch and perennial peanuts, are mixed in the grass stands (the **Wildflower Establishment and Maintenance** section of this label provides rate tolerance information). Higher rates will broaden and lengthen the spectrum of weeds controlled.

**Buffalograss:** In newly sprigged buffalograss, apply Impose herbicide at 2 to 4 ounces per acre for control or suppression of labeled weeds and to aid in stand establishment. Make the application immediately after planting to new growth or seedlings. Severe injury or death may occur when Impose herbicide is applied to new growth and small seedlings. It is best to wait to apply Impose herbicide to newly emerged buffalograss until the grass has at least five true leaves. It is also important to use only a nonionic or silicone-based surfactant and not to use a methylated seed oil. In established stands, apply Impose herbicide at 2 to 8 ounces per acre. The higher rates may result in some turf discoloration and stunting. An application of Impose herbicide to dormant buffalograss will control winter annual weeds. Note that some buffalograss types may show different tolerance to Impose herbicide. Turf type buffalograss, for instance, may show a different tolerance to Impose herbicide than the wild type buffalograss. Some turf types may tolerate low rates of Impose herbicide applied at seeding. The seed dealer will provide details.

**Sideoats and Blue Grama:** Do not apply Impose herbicide to monoculture stands of sideoats and blue grama if stand thinning or stand loss can not be tolerated. Once new seedlings of sideoats and blue grama have emerged and reached the five-leaf stage, an application of Impose herbicide at 2 to 4 ounces per acre plus an adjuvant will aid in stand establishment. Stand thinning may occur if Impose herbicide is applied at 4 ounces per acre with methylated seed oil as the adjuvant. Satisfactory weed control in early summer plantings of sideoats and blue grama may result when lower rates of Impose herbicide are used, especially in the states of Wisconsin, Michigan, Minnesota, South Dakota, North Dakota, Kansas, Oklahoma, Texas, and Nebraska, and other states where growing degree days are short. Although sideoats and blue grama have shown tolerance to Impose herbicide at 2 to 4 ounces per acre when applied preemergence at planting, some stand thinning may occur. In established stands of sideoats and blue grama, apply Impose herbicide at 4 to 10 ounces per acre. Impose herbicide can be applied up to 12 ounces per acre; however, depending on soil type, variety, environmental conditions, surfactant choice, etc., this may result in foliar and/or seedhead suppression, or in the injury of the sideoats or blue grama.

**Switchgrass (*Panicum virgatum*):** Do not use Impose herbicide for the establishment of pure switchgrass stands as severe injury or death can result. It can, however, be applied at 2 to 4 ounces per acre if switchgrass is planted in a mixed stand with tolerant species. Even then, some stand thinning or loss of stand may result. If reclaiming a mature switchgrass stand from certain perennial weeds like tall fescue, leafy spurge and Johnsongrass, etc., use Impose herbicide at rates of 10 to 12 ounces per acre. Beware, however, that severe stunting and injury will occur. Do not apply impose herbicide to switchgrass if severe injury cannot be tolerated.

**Eastern Gamagrass:** Apply Impose herbicide at 2 to 6 ounces per acre at planting prior to eastern gamagrass emergence only if some stand thinning or loss can be tolerated. Stand thinning and stunting will most likely result. Stand mortality could result if there are adverse conditions, poor soils or added stress to the eastern gamagrass. On established eastern gamagrass, apply Impose herbicide at 2 to 8 ounces per acre while the eastern gamagrass is dormant. Injury in the form of stunting will occur as the rate of Impose herbicide is increased. If applied during or after green-up, Impose herbicide may result in foliar and/or seedhead suppression and possible mortality of weak plants.

**Big Bluestem, Little Bluestem and Indiangrass:** To control labeled weeds in these grasses at planting, or any time thereafter (including emerged seedlings and dormant or actively growing perennial stands), Impose herbicide can be applied at the rate of 2 to 12 ounces per acre. See **Weeds Controlled** section of this label for the desired rate. Use lower rates in Wisconsin, Michigan, Minnesota, South Dakota, North Dakota, Kansas, Oklahoma, Texas, and Nebraska. Use higher rates in areas of where there is more rainfall and a longer growing season.

**Tall Fescue Control:** Tall fescue can be controlled in established stands of, or in seed bed preparations for, big bluestem, little bluestem and indiangrass when Impose herbicide is applied at 12 ounces per acre in combination with methylated seed oil at 2 pints per acre. Control may be aided with the addition of nitrogen fertilizer (see **Spray Adjuvants for Postemergence Applications** section of this label). Best results will be obtained if the tall fescue is actively growing. Application to tall fescue after it has reached the boot stage or summer dormancy will result in poor control. Tank-mix combinations with Impose herbicide could result in improved control of existing tall fescue as well as new germinating seedlings. Best results will result from a fall application of Impose herbicide at 6 to 12 ounces per acre plus 24 to 64 ounces per acre of Accord or Roundup Pro.

To control older, more mature fescue stands in the spring, use Impose herbicide at the higher end of the 6 to 12 ounces per acre rate range plus a tank-mix with Accord or Roundup Pro at 32 to 64 ounces per acre. If planting forbs, use the lower end of the 6 to 12 ounces per acre rate range of Impose herbicide plus a tank-mix with a glyphosate product. If Impose herbicide is used at 8 ounces per acre with a glyphosate product in the fall, apply only 4 ounces per acre of Impose herbicide in the spring at planting for annual weed and seedling fescue control. Where permitted, burning the fescue stand the following spring prior to green-up can help provide a better seedbed for planting and aid in control of seedling tall fescue. Several summer mowings of the fescue will weaken the root system and make the fescue more susceptible to herbicides. At least 10 inches of fescue re-growth is necessary

following the last mowing before applying either the Impose herbicide or glyphosate products. Both require adequate foliage present for uptake and maximum control.

**TOLERANT GRASS SPECIES<sup>1</sup>**

Prairiegrass		Impose Herbicide Rate (ounce/acre) <sup>2</sup>	
Common Name	Species	New Seeding	Established
Big Bluestem	<i>Andropogon gerardii</i>	2-12	2-12
Little Bluestem	<i>Schizachyrium scoparium</i>	2-12	2-12
Indiangrass	<i>Sorghastrum nutans</i> 2-12	2-12	2-12
Bushy Bluestem	<i>Andropogon glomeratur</i>	--*	2-12
King Ranch Bluestem	<i>Bothriochloa ischaemum</i>	--	2-12
Silver Beard Bluestem	<i>Bothriochloa saccharoides</i>	--	2-12
Broomsedge	<i>Andropogon virginicus</i>	--	2-12
Fingergrass, Rhodes grass	<i>Choris spp.</i>	--	2-12
Needlegrass	<i>Stipa spp.</i>	--	2-12
Needleandthread	<i>Stipa comata</i>	--	2-12
Kearny (Plains) Threeawn	<i>Aristida longespica</i>	--	2-12
Prairie Threeawn	<i>Aristida oligantha</i>	--	2-12
Prairie Sandreed	<i>Calamovilfa longifolia</i>	--	2-12
Smooth Bromegrass	<i>Bromus inermis</i>	--	2-12
Kentucky Bluegrass	<i>Poa pratensis</i>	--	2-12 <sup>4</sup>
Sandberg's Bluegrass	<i>Poa sandbergii</i>	--	2-12
Wheatgrasses	<i>Agropyron spp.</i>	--	2-12
Bottlebrush Squirreltail	<i>Sitanian hystrix</i>	--	2-12
Russian Wild Ryegrass	<i>Elymus junceus</i>	2-6 <sup>2</sup>	2-12
Sideoats Grama	<i>Bouteloua curtipendula</i>	2-8 <sup>3</sup>	2-8
Blue Grama	<i>Bouteloua gracilis</i>	2-8 <sup>3</sup>	2-8
Buffalograss	<i>Buchloe dactyloides</i>	2-4	2-8
Eastern Gamagrass	<i>Tripsacum dactyloides</i>	2-6 <sup>3</sup>	2-8

<sup>1</sup>See individual grass sections for application timing.

<sup>2</sup>High rates may result in stunting and growth suppression.

<sup>3</sup>Impose herbicide preemergence applications to newly seeded sideoats, blue grama and Eastern gamagrass may result in thinning or loss of stand.

<sup>4</sup>Some bluegrass varieties are sensitive to Impose herbicide. Drought can delay recovery and may result in overgrazing of treated area.

\*Tolerance unknown.

**Tolerance of Established Grasses to 8 to 12 ounces of Impose Herbicide applied in the Fall**

Grass Species <sup>1</sup>	Tolerant	Suppressed <sup>2</sup>	Not Tolerant	Tolerance Unknown
Bermudagrass	X			
Bluegrass Kentucky		X		
Bluegrass, Sandberg's	X			
Bluestem, big	X			
Bluestem, bushy	X			
Bluestem, King Ranch	X			
Bluestem, little	X			
Bluestem, silver beard	X			
Bromegrass, meadow		X	X	
Bromegrass, smooth		X		
Broomsedge	X			
Buffalograss	X	X		
Cheatgrass			X	
Creeping foxtail, Garrison				X
Downey brome			X	
Fescue, Idaho	X			
Fescue, Tall			X	
Gamagrass, eastern		X		

Grama, blue	X	X		
Grama, sideoats	X	X		
Indiangrass	X			
Medusahead			X	
Needleandthread	X			
Needlegrass, green	X			
Orchardgrass		X		
Prairie cordgrass		X		
Prairie dropseed				X
Prairie sandreed	X			
Prairie threeawn	X			
Quackgrass		X		
Redtop		X	X	
Reed canarygrass		X	X	
Rhodes grass/Fingergrass	X			
Ryegrass, annual or Italian			X	
Ryegrass, perennial		X	X	
Squirreltail, bottlebrush	X			
Switchgrass		X	X	
Timothy			X	
Wheatgrass, bluebunch	X	X		
Wheatgrass, crested	X	X		
Wheatgrass, intermediate	X	X		
Wheatgrass, pubescent	X	X		
Wheatgrass, Siberian	X			
Wheatgrass, slender	X	X		
Wheatgrass, streambank	X	X		
Wheatgrass, western	X	X		
Wild ryegrass, Basin	X			
Wild ryegrass, Canada		X		
Wild ryegrass, Russian	X			
Wild ryegrass, Virginia		X		

<sup>1</sup>Species with an X in more than one column means tolerance will vary depending on variety, use rate, and environmental conditions.

<sup>2</sup>Suppression may be expressed as reduction in number of seedheads, seedhead height suppression or foliage height reduction, however, full recovery of the grass can be expected.

#### WILDFLOWER ESTABLISHMENT AND MAINTENANCE

Tolerance among wildflowers to Impose herbicide varies considerably because there are so many different genotypes, ecotypes and varieties and susceptibilities depending on soil types and environmental conditions. Do not use Impose herbicide unless some stand thinning or mortality of wildflowers can be tolerated. The least amount of injury to tolerant species from a preemergence application of Impose herbicide will result from the low rate of 2 ounces per acre. Because the use of Impose herbicide applied postemergence can result in injury or death of some wildflower genotypes, use only as a last resort when the wildflower stand is threatened by weed competition. Certain spray adjuvants used with Impose herbicide can also increase injury and stand loss in wildflowers. Most legumes listed in the tolerance table are tolerant to Impose herbicide at 4 ounces per acre, however some stand thinning can occur. The specifications given in the tables below are for mixed grass/wildflower stands. Use on a monoculture stand could result in poor control and plant injury. Test a small area of the monoculture stand for injury before applying Impose herbicide to a larger area of a monoculture stand.

**For prairiegrass/wildflower mixtures:** If wildflower injury (stand thinning, height suppression, etc.) can be tolerated, apply Impose herbicide at the rate specified to achieve the weed control desired. Do not exceed the tolerance rate given in the table below. Preemergence applications of Impose herbicide can reduce or eliminate wildflower injury. To minimize injury to tolerant species, apply Impose herbicide at 2 to 4 ounces per acre. In low rainfall areas and areas where conditions are cool and dry, use the 2 ounce per acre rate of Impose herbicide. If a postemergence application of Impose herbicide is to be made to established prairiegrass/wildflower mixtures, use the lowest rates allowed to achieve the weed control desired (see **Weeds Controlled** section of this label). Postemergence application can result in stand thinning or death due to the great variation in seed sources, varieties, and genotypes of wildflowers. Test a small area to determine tolerance before making a full application to a large

area. The rates listed below are for those species in which acceptable tolerance has been confirmed on the varieties/genotypes being treated.

Increased wildflower injury can result from an application of Impose herbicide in conjunction with an organophosphate insecticide.

**Seedling Wildflower and Legume Tolerance to Impose Herbicide (4 ounce per acre)<sup>1</sup> in Mixed Grass/Forb Stands.**

Common Name	Genus Species	PRE	POST
Alfalfa	<i>Medicago sativa</i>	No	Yes
Aster, New England	<i>Aster novae angliae</i>	No	Yes
Aster, Prairie	<i>Aster tanacetifolius</i>	No	Yes
Baby Blue Eyes	<i>Nemophila menziesii</i>	No	Yes
Beggar ticks	<i>Bidens frondosa</i>	No	Yes
Bird's eyes	<i>Gila tricolor</i>	No	Yes
Bishop's Flower	<i>Anuni majus</i>	No	Yes
Blackeyed Susan	<i>Rudbeckia hirta</i>	Yes	Yes
Blanketflower	<i>Gaillardia aristata</i>	No	Yes
Bundleflower, Illinois	<i>Desmanthus illinoensis</i>	Yes	Yes
Catchfly	<i>Silene armeria</i>	No	Yes
Chicory	<i>Cichorium intybus</i>	Yes	Yes
Clover, Crimson	<i>Trifolium incarnatum</i>	Yes	Yes
Clover, White	<i>Trifolium repens</i>	No	Yes
Coneflower, Purple	<i>Echinacea purpurea</i>	Yes	Yes
Coneflower, Upright Prairie	<i>Ratibida columnifera</i>	Yes	Yes
Coreopsis, Dwarf Red Plains	<i>Coreopsis tinctoria</i> var. <i>Gay Feather</i>	Yes	Yes
Coreopsis, Lance Leaved	<i>Coreopsis lanceolata</i>	Yes	Yes
Coreopsis, Plains	<i>Coreopsis, tinctoria</i>	Yes	Yes
Cornflower	<i>Centaurea cyanus</i>	No	Yes
Cosmos, Garden	<i>Cosmos bipinnatus</i>	Yes	Yes
Cosmos, Yellow	<i>Cosmos sulphureus</i>	Yes	Yes
Daisy, Ox-eye	<i>Chrysanthemum leucanthemum</i>	Yes	Yes

Common Name	Genus Species	PRE	POST
Daisy, Shasta	<i>Chrysanthemum maximum</i>	Yes	Yes
Five Spot	<i>Nemophila maculata</i>	No	Yes
Flax, Blue	<i>Linum perenne</i>	No	Yes
Hat, Mexican	<i>Ratibida columnifera</i>	Yes	Yes
Indian Blanket	<i>Gaillardia pulchella</i>	No	Yes
Indigo, Blue False	<i>Baptisia australis</i>	Yes	No
Johnny Jump-ups	<i>Viola cornuta</i>	Yes	Yes
Lemon Mint	<i>Monarda citriodora</i>	No	Yes
Lespedeza, Bicolor	<i>Lespedeza</i>	Yes	Yes
Lespedeza, Korean	<i>Lespedeza stipulacea</i>	No	Yes
Lespedeza, Sericea	<i>Lespedeza cuneata</i>	No	Yes
Lupine, Perennial	<i>Lupinu perennis</i>	Yes	Yes
Partridgepea	<i>Cassia fasciculata</i>	Yes	Yes
Pea, Calico	<i>Psum viganasinensis</i>	Yes	Yes
Pea, Flat	<i>Lathyrus sylvestris</i>	Yes	Yes
Pea, Perennial	<i>Lathyrus latifolius</i>	Yes	Yes
Phlox, Drummond	<i>Phlox drummondii</i>	Yes	No
Poppy, California	<i>Eschscholzia californica</i>	Yes	No
Poppy, Corn	<i>Papaver rhoeas</i>	Yes	Yes
Poppy, Red Corn	<i>Papaver spp.</i>	Yes	Yes
Prairieclover, Purple	<i>Dalea purpurea</i>	Yes	Yes
Prairieclover, White	<i>Dalea candidum</i>	Yes	Yes
Tick-trefoil, showy	<i>Desmodium canadense</i>	No	Yes
Trefoil, Birdsfoot	<i>Lotus corniculatus</i>	No	Yes
Vetch, Crown	<i>Coronilla varia</i>	Yes	--

Vetch, Hairy	<i>Vicia villosa</i>	Yes	--
Yarrow, Gold	<i>Achillea filipendulina</i>	No	Yes

<sup>1</sup> For legumes, at least three true leaves should be present at postemergence application.

**Established Wildflower and Legume Tolerance to Impose Herbicide (maximum rate<sup>1</sup>, ounce per acre) in Mixed Grass/Forb Stands**

Common Name	Genus Species	PRE	POST <sup>2</sup>
Flax, Blue	<i>Linum perenne</i>	0	6
Indian Blanket	<i>Gaillardia pulchella</i>	0	6
Blanketflower	<i>Gaillardia aristata</i>	0	8
Chickory	<i>Cichorium intybus</i>	4	6
Daisy, Shasta	<i>Chrysanthemum maximum</i>	4	8
Prairieclover, Purple	<i>Dalea, purpurea</i>	4	12
Coneflower, Upright Prairie	<i>Ratibida columnifera</i>	6	6
Hat, Mexican	<i>Ratibida columnifera</i>	6	6
Poorjoe	<i>Diodia teres</i>	8	--
Lupine, Perennial <sup>4</sup>	<i>Lupina perennis</i>	8	12
Coneflower, Purple	<i>Echinacea purpurea</i>	8	8
Daisy, Ox-eye <sup>3</sup>	<i>Chrysanthemum leucanthemum</i>	8	8
Leadplant	<i>Amorpha canescens</i>	8	8
Lespedeza, Bicolor	<i>Lespedeza</i>	8	8
Milkweed, Common	<i>Asclepias syriaca</i>	8	--
Pea, Prairie Scurf	<i>Psoralea esculenta</i>	8	8
Yarrow, Gold <sup>3</sup>	<i>Achillea filipendulina</i>	8	8
Blackeyed Susan	<i>Rudbeckia hirta</i>	8	10
Johnny Jump-ups	<i>Viola cornuta</i>	8	12
Sweetclover	<i>Melilotus sp.</i>	12	8
Alfalfa	<i>Medicago sativa</i>	12	12
Bundleflower, Illinois	<i>Desmanthus illinoensis</i>	12	12
Lespedeza, Sericea	<i>Lespedeza cuneata</i>	12	12
Partridgepea	<i>Cassia fasciculata</i>	12	12
Common Name	Genus Species	PRE	POST <sup>2</sup>
Sensitive vine	<i>Minmosa strigillosa</i>	12	12
Vetch, Crown	<i>Coronilla varia</i>	12	12
Violet, Wild	<i>Viola spp.</i>	12	12

<sup>1</sup>Height suppression or stand reduction may occur at maximum use rate. For legumes, some yellowing and stunting can occur at higher use rates.

<sup>2</sup>Make early post postemergence application on the flowers to reduce injury and increase flower set.

<sup>3</sup>Will not flower.

<sup>4</sup>Most native rangeland lupines are tolerant to Impose herbicide at 12 ounces per acre postemergence.

**Wildflower Establishment with Impose Herbicide 4 ounce per acre + PENDULUM Herbicide 2 pounds active ingredient per acre<sup>1</sup>**

Common name	Genus Species	PRE <sup>2</sup>	POST <sup>3</sup>
Blackeyed Susan	<i>Rudbeckia hirta</i>	Yes	Yes
Blanketflower	<i>Gaillardia aristata</i>	No	Yes
Bundleflower, Illinois	<i>Desmanthus illinoensis</i>	>50% thinning	Yes
Clover, Crimson	<i>Trifolium incarnatum</i>	>50% thinning	Yes
Coneflower, Clasping	<i>Dracopis amplexicaulis</i>	Yes	Yes
Coneflower, Upright Prairie	<i>Ratibida columnifera</i>	No	OK
Coneflower, Purple	<i>Echinacea purpurea</i>	Yes	Yes
Coreopsis, Dwarf Red Plains	<i>Coreopsis tinctoria var. Gay Feather</i>	OK stunting	OK stunting
Coreopsis, Plains	<i>Coreopsis tinctoria</i>	OK stunting	Yes
Coreopsis, Lance Leaved	<i>Coreopsis lanceolata</i>	25% thinning	Yes
Cornflower	<i>Centaurea cyanus</i>	No	OK 20% thinning
Cosmos, Garden	<i>Cosmos bipinnatus</i>	OK 10% thinning	OK stunting
Cosmos, Yellow	<i>Cosmos sulphureus</i>	Yes	Yes

Daisy, Ox-eye	<i>Chrysanthemum leucanthemum</i>	25% thinning	Yes
Daisy, Shasta	<i>Chrysanthemum maximum</i>	Marginal-OK-20% thinning	Yes
Lupine, Perennial	<i>Lupinu perennis</i>	Yes	≤50% thinning
Partridgepea	<i>Cassia fasciculata</i>	25% thinning	Yes
Poppy, California	<i>Eschscholzia californica</i>	Yes	25% injury, stunting, thinning
Yarrow, Gold	<i>Achillea filipendulina</i>	OKthinning	OK

<sup>1</sup>2 lbs. active ingredient per acre = 2.4 quarts of Pendulum herbicide 3.3 EC or 3.3 lbs. of Pendulum herbicide WDG

<sup>2</sup>Preemergence at planting

<sup>3</sup>Postemergence to seedlings

Yes= no injury

No = results in no wildflower germination or unacceptable injury to seedling flowers.

OK = can be used in thinning and/or stunting can be tolerated or if establishment is threatened by weed competition.

Beware that the response of wildflowers to Impose herbicide could vary greatly because of the many species and varieties that exist. Test small areas to determine tolerance and whether potential injury is acceptable before treating larger areas.

If Impose herbicide is to be used on a wildflower species that is not listed in the table below, test a small area with no more than 12 ounces per acre per year to determine the injury that may result. Evaluate the wildflowers 1 to 2 months later for possible injury. The user assumes all responsibility for any damage or other liability.

#### WILDLIFE HABITAT MANAGEMENT

Impose herbicide can be used to control exotic and other undesirable vegetation for purposes of wildlife habitat management and enhancement within terrestrial noncrop sites including riparian and tree areas. Applications can be made to control undesirable vegetation prior to the establishment of desirable species and to release desirable species that may be present in the soil, but suppressed by competitive vegetation. See specific sections of this label for weed control information.

#### SPECIAL WEED CONTROL

Always add an adjuvant to Impose herbicide (see **Spray Adjuvants For Postemergence Applications** section of this label). Best control of perennial weeds is achieved when Impose herbicide is mixed with a methylated seed oil. This is especially true when weeds have waxy leaves or with perennials and weeds under stress conditions. Use a methylated seed oil for best results against the weeds listed below because the use of a nonionic or silicone-based surfactant may result in less than acceptable control.

**Johnsongrass and Itchgrass:** When Johnsongrass and itchgrass have reached the whorl stage and 18 to 24 inches in height, apply Impose herbicide at 8 to 12 ounces per acre. If treating dense stands, or after these grasses have reached the culm elongation stage, control with Impose herbicide may be improved with the addition of Accord or Roundup Pro at the rate of 8 to 16 ounces per acre. Use the higher herbicide rates as grass density increases. Sometimes, control of Johnsongrass and itchgrass at stages taller than described above are possible.

**Dallisgrass, Bahiagrass, Vaseygrass. Paspalum spp., Smutgrass:** Make a postemergence application of Impose herbicide at 10 to 12 ounces per acre after grass has reached full green-up for control of dallisgrass, bahiagrass and smutgrass. Activity against dallisgrass and smutgrass can range from suppression to control depending upon the growth stage and growing conditions at the time of application. To control vaseygrass, make a postemergence application of Impose herbicide at the rate of 4 to 6 ounces per acre after the grass has reached 100% green-up and is from 3 to 8 inches in height. Efficacy will be improved with the addition of Accord or Roundup Pro at the rate of 12 to 16 ounces per acre. Use higher herbicide rates as weed growth and density increases. A preemergence application of Impose herbicide plus Pendulum herbicide will provide increased control of these grasses germinating from seed.

**Leafy Spurge:** Maximum control of leafy spurge can be obtained when Impose herbicide is applied in late summer or fall at 8 to 12 ounces per acre in combination with a methylated seed oil at two pints per acre. The timing is generally August through October, but it can vary due to geography and altitude. Yearly applications will improve the residual control of leafy spurge. In some areas, cool season grasses may be injured by applications of Impose herbicide at 12 ounces per acre in spring or fall, or 4 ounces applied in the fall followed by 8 ounces per acre in the spring. Nitrogen fertilizer (see **Spray Adjuvants For Postemergence Applications** section of this label) at two



pints per acre can increase the control of leafy spurge; however, it may also cause injury to grasses and forbs. Use of Impose herbicide with a nonionic or silicone-based surfactant will not provide control of leafy spurge. The target timing for fall applications of Impose herbicide for control of leafy spurge in North and South Dakota is late August through September. Further south in Nebraska and Iowa the target timing is mid-September through mid-October. Make this application before a killing frost when there is good soil moisture present and the leafy spurge has not lost its milky sap flow. Check for milky sap flow by breaking the leafy spurge main stem and if milky sap flows from the break then Impose herbicide can still be applied.

**Tall Fescue Control:** Apply Impose herbicide at 12 ounces per acre plus methylated seed oil at 2 pints per acre to control tall fescue. Control will be aided by the addition of Accord, glyphosate, or Roundup Pro and/or Nitrogen fertilizer (see **Spray Adjuvants For Postemergence Applications** section of this label). Only apply Impose herbicide when tall fescue is actively growing because application after tall fescue had reached summer dormancy will result in poor control.

Best control of existing tall fescue and germinating seedlings is obtained when Impose herbicide is applied in the fall at 8 to 12 ounces per acre plus Accord or Roundup Pro at 24 to 64 ounces per acre. To control mature fescue stands in the spring, use Impose herbicide at the higher end of the 6 to 12 ounces per acre rate range plus a tank-mix with Accord or Roundup Pro at 32 to 64 ounces per acre. If planting forbs, use the lower end of the 6 to 12 ounces per acre rate range of Impose herbicide plus a tank-mix with a glyphosate product. If Impose herbicide is used at 8 ounces per acre with a glyphosate product in the fall, apply only 4 ounces per acre of Impose herbicide in the spring at planting for annual weed and seedling fescue control. Where permitted, burning the fescue stand the following spring prior to green-up can help provide a better seedbed for planting and aid in control of seedling tall fescue. Several summer mowings of the fescue will weaken the root system and make the fescue more susceptible to herbicides in the fall. At least 10 inches of fescue re-growth is necessary following the last mowing before applying either the Impose herbicide or glyphosate products. Both require adequate foliage present for uptake and maximum control.

**Russian Knapweed:** To control Russian knapweed, make a fall application of Impose herbicide at 12 ounces per acre plus 1 quart per acre of methylated seed oil during Russian knapweed senescence. Reduced control will result if the application is made before the initiation of senescence. Although control improves as senescence progresses, Russian knapweed control can still be obtained with Impose herbicide if the application is made after full senescence.

**Dalmation Toadflax:** To control Dalmation Toadflax, make a fall application of Impose herbicide at 12 ounces per acre plus 1 quart per acre of methylated seed oil when the top quarter of the plant is necrotic, usually after a hard front (late October through November). Reduced control will result if the application is made before this timing. Good control can be achieved as long as some green stem and/or leaf tissue is remaining. Adding ammonium sulfate at 2 to 3 pints per acre may improve control.

**Resistant Biotypes:** Herbicides that have the ALS/AHAS enzyme inhibiting mode of action such as Impose herbicide, Oust and others may not control some weeds listed on this label if resistant biotypes are present. If ALS/AHAS resistant biotypes occur in the area to be sprayed, tank-mix Impose herbicide, or make sequential applications, with a registered herbicide with a different mode of action.

#### **RESIDUAL BAREGROUND WEED CONTROL**

For total vegetation control in sensitive areas and around desirable vegetation, use Impose herbicide at 12 ounces per acre in a tank-mix combination with labeled rates of Pendulum herbicide, Roundup Pro, Escort (or Vegetation Manager Metsulfuron Methyl DF), Karmex™, 2,4-D, diuron, Vegetation Manager Prodiamine 65 WDG (or Endurance™) or other labeled products to provide total vegetation control. Use 2 pints per acre of methylated seed oil as an adjuvant for maximum control.

To provide total weed control in bareground areas, apply Impose herbicide at 12 ounces per acre in a tank-mix with Vegetation Manager Imazapyr 2SL (or Arsenal herbicide), Mohave 70 EG (or Sahara DG herbicide), Bromacil 40/40 (or Krovar™), SFM 75 (or Oust), Picloram K (or Tordon), Vanquish, or other labeled products to provide total bareground weed control. Use 2 pints per acre of methylated seed oil as an adjuvant for maximum control.

**Spot treatments:** For weed control in bareground or total vegetation, Impose herbicide can be applied to small areas. In each gallon of water, mix Impose herbicide at 0.3 to 5.4 ounces with 0.25 to 5% v/v methylated seed oil adjuvant.

#### **USE UNDER PAVED SURFACES**

Establish the final grade to the soil and then apply Impose herbicide in sufficient water to obtain uniform wetting of the soil surface and shoulder area. Do not move the soil after the application. Using clean water and constant agitation, mix Impose herbicide at the rate of 12 ounces per acre. If the soil is not moist before application, weed control can be improved through incorporation of Impose herbicide. Mechanical incorporation to a depth of two

inches with a rototiller or disc is one method. Use of rainfall and/or irrigation (one inch/Acre) is another good method to incorporate Impose herbicide. Do not allow treated soil to wash or move from the treated area.

#### **TOLERANCE OF TREES AND BRUSH TO IMPOSE HERBICIDE**

When Impose herbicide is applied in and around desirable tree and brush species, follow these general instructions:

1. Impose herbicide may not be used on nursery, orchard, ornamental plantings, new plantings, seedling trees or fiber farms unless such use is provided in supplemental labeling from Makhteshim Agan of North America, Inc.
2. Apply Impose herbicide to a limited area to determine tolerance in the area.
3. Apply Impose herbicide at rates up to 12 ounces per acre to control weeds in roadsides, prairies, and areas used for wildlife cover, erosion control and windbreaks and in and around established trees or pasture or rangeland (see **Instructions for Rangeland Use** section of this label).
4. Severe injury or death may result if Impose herbicide is applied to tree and brush species that are under stress due to drought, insects or other factors that might make the plant more susceptible to injury.
5. Tip chlorosis and minor necrosis may be seen on some species.
6. Use application methods that decrease foliar contact as injury in the form of defoliation and terminal death may occur.
7. A list of tolerant tree and brush species to Impose herbicide when it is applied under the canopy and/or to the foliage are presented below.

If making a fall application of Impose herbicide, delay the application until after leaves have begun to senesce or drop to avoid potential foliar injury to tree and brush species. Fall applications can be made to conifer species as they are generally tolerant to Impose Herbicide. Be sure to apply Impose herbicide in and around tree and brush species at the specified timing for the target weeds.

**Brush and Tree Species Tolerant to Impose Herbicide at 12 ounces per acre<sup>1</sup>**

Common Name	Species	Tolerance by Application Method <sup>2</sup>	
		Directed Below Foliage	To Foliage
Apple	<i>Malus sylvestris</i>	Yes	NR
Ash, Blue	<i>Fraxinus quadrangulata</i>	Yes	NR
Ash, Green	<i>Fraxinus pennsylvanica</i>	No	No
Azalea	<i>Rhododendron</i> spp.	No	No
Basswood	<i>Tilia heterophylla</i>	No	No
Boxelder	<i>Acer negundo</i>	Yes	Injury <sup>5</sup>
Buckeye, Ohio	<i>Aesculus glabra</i>	Yes	NR
Cedar-juniper, Western	<i>Thuja plicata</i>	Yes	Yes
Cherry, Black <sup>3</sup>	<i>Prunus serotina</i>	No	No
Cherry, Choke	<i>Prunus virginiana</i>	No	No
Cherry, Sweet <sup>3</sup>	<i>Prunus avium</i>	No	NR
Cottonwood	<i>Populus deltoides</i>	Yes	Injury <sup>5</sup>
Cottonwood, Narrow Leaf	<i>Populus</i> spp.	Yes	Injury <sup>5</sup>
Currant species	<i>Ribes</i> spp.	Injury <sup>5</sup>	No
Dogwood, Flowering	<i>Cornus</i> spp.	Yes	Yes
Dogwood, Grey	<i>Cornus racemosa</i>	Yes	Injury <sup>5</sup>
Dogwood, Red Twig	<i>Cornus</i> spp.	Yes	Yes
Douglas Fir	<i>Pseudotsuga menziesii</i>	Yes	Yes <sup>4</sup>
Elm, American	<i>Ulmus americana</i>	Yes	Yes
Elm, Siberian	<i>Ulmus pumila</i>	Yes	No
Elm, Slippery	<i>Ulmus rubra</i>	Yes	Yes
Gooseberry	<i>Ribes</i> spp.	Injury <sup>5</sup>	Injury <sup>5</sup>
Hackberry	<i>Celtis occidentalis</i>	Yes	Yes
Hawthorn	<i>Crataegus</i> spp.	Yes	Injury <sup>5</sup>
Juniper, Chinese	<i>Juniperus chinensis</i>	Yes	Yes
Juniper, Western	<i>Juniperus osteosperma</i>	Yes	Yes
Lilac	<i>Syringa</i> spp.	No	No
Linden, American	<i>Tilia americana</i>	No	No
Locust, Black	<i>Robinia pseudoacacia</i>	Yes	Yes
Locust, Honey	<i>Gleditsia triacanthos</i>	Yes	Yes
Maple, Red	<i>Acer rubrum</i>	Yes	Yes
Maple, Sugar	<i>Acer saccharum</i>	Yes	Yes
Mulberry, Red	<i>Morus rubra</i>	Yes	NR
Mulberry, White	<i>Morus alba</i>	Yes	NR
Oak, Black	<i>Quercus velutina</i>	Yes	NR
Oak, Live	<i>Quercus virginiana</i>	Yes	Yes
Oak, Southern Red	<i>Quercus falcate</i>	Yes	NR
Oak, White	<i>Quercus alba</i>	Yes	NR
Olive, Russian	<i>Elaeagnus angustifolia</i>	Yes	No
Osage Orange	<i>Maclura pomifera</i>	Yes	NR
Peach (var. Elberta) <sup>3</sup>	<i>Prunus persica</i>	Yes	NR
Photinia, Red Tip	<i>Photinia fraseri</i>	Yes	Yes
Pine, Lodgepole	<i>Pinus contorta</i>	Yes	Injury <sup>4</sup>
Pine, White <sup>4</sup>	<i>Pinus strobes</i>	Yes	Yes
Pittosporum, Japanese	<i>Pittosporum tobira</i>	Yes	Yes
Plum species	<i>Prunus</i> spp.	Yes	No

Common Name	Species	Tolerance by Application Method <sup>2</sup>	
		Directed Below Foliage	To Foliage
Poplar, Yellow (Tulip)	<i>Liriodendron tulipifera</i>	Yes	NR
Privet, Common	<i>Ligustrum vulgare</i>	Yes	Yes
Rabbitbrush species	<i>Chrysothamnus</i> spp.	Yes	Yes
Redbud	<i>Cercis canadensis</i>	Yes	Yes
Redcedar, Eastern	<i>Juniperus virginiana</i>	Yes	Yes
Rose, Multiflora	<i>Rosa multiflora</i>	Yes <sup>5</sup>	No
Sage, Big	<i>Artemisia tridentate</i>	Yes	Yes
Sage, Fringe	<i>Artemisia frigida</i>	Yes	Yes
Sage, Silver	<i>Artemisia cana</i>	Yes	Yes
Sagebrush, Big	<i>Artemisia tridentate</i>	Yes	Yes
Sagebrush, Fringed	<i>Artemisia frigida</i>	Yes	Yes
Saltcedar	<i>Tamarix</i> spp.	Yes	No
Serviceberry	<i>Amelanchier alnifolia</i>	Yes	NR
Snowberry, Western	<i>Symphoricarpos occidentalis</i>	Yes	Injury <sup>5</sup>
Spruce species	<i>Picea</i> app.	Yes <sup>4</sup>	Yes <sup>4</sup>
Sugarberry	<i>Celtis laevigata</i>	Yes	Yes
Sycamore	<i>Plantanus occidentalis</i>	Yes	No
Tree of Heaven	<i>Ailanthus altissima</i>	Yes	Yes
Walnut, American Black	<i>Juglans nigra</i>	Yes	No
Willow	<i>Salix</i> spp.	Yes	Injury <sup>5</sup>

<sup>1</sup>Not intended for nursery, orchard, ornamental plantings, new plantings, or seedling trees.

<sup>2</sup>Yes = Tolerant

No = Not tolerant, severe injury or death

NR = Not recommended due to insufficient tolerance data

<sup>3</sup>Not for use on ornamental or fruit bearing trees

<sup>4</sup>Applications made just before or during candling may cause candle injury or death

<sup>5</sup>Possible defoliation and/or death. Some species may exhibit tip chlorosis and minor necrosis. If spray contacts foliage, then defoliation and terminal death may occur. Injury can be reduced or eliminated if applied in fall after color change or leaf drop.

**WEEDS CONTROLLED**  
(With 4 to 6 ounces per acre Impose herbicide)

Common Name	Species	PRE <sup>1</sup>	POST <sup>2</sup>	ANNUAL/ BIENNIAL/ PERENNIAL <sup>3</sup>
<b>BROADLEAVES</b>				
Bedstraw, Catchweed	<i>Galium aparine</i>	C	4	WA
Beggarweed, Florida	<i>Desmodium tottuosum</i>	C	2	SA
Buffalobur	<i>Solanum rostratum</i>	--	C	SA
Buttercup, Bur	<i>Ranunculus testiculatus</i>	C	C	WA
Cocklebur, Common	<i>Xanthium strumarium</i>	S	6	SA
Lambsquarters, Common	<i>Chenopodium album</i>	C	2	SA
Halogeton	<i>Halogeton glomeratus</i>	C	C	SA
Morningglory, Entireleaf	<i>Ipomoea hederacea</i>	S	3	SA
Ivyleaf	<i>Ipomoea hederacea</i>	S	3	SA
Tall	<i>Ipomoea purpurea</i>	S	3	SA
Mustard, Wild	<i>Brassica kaber</i>	C	C	WA
Pigweed	<i>Amaranthus</i> spp.	C	6	SA
Queen Anne's Lace	<i>Daucus carota</i>	--	4	B
Radish, Wild	<i>Raphanus raphanistrum</i>	S	4	WA
Yellow Rocket	<i>Barbarea vulgaris</i>	C	4	WA
Sicklepod	<i>Senna obtusifolia</i>	C	4	SA

Common Name	Species	PRE <sup>1</sup>	POST <sup>2</sup>	ANNUAL/ BIENNIAL/ PERENNIAL <sup>3</sup>
Sida, Prickly	<i>Sida spinosa</i>	C	2	SA
Smartweed, Ladysthumb Pennsylvania Swamp	<i>Polygonum persicaria</i> <i>Polygonum pennsylvanicum</i> <i>Polygonum coccineum</i>	C C C	C C C	SA SA SA
Starbur, Bristly	<i>Acanthospermum hispidum</i>	C	2	SA
Velvetleaf	<i>Abutilon theophrasti</i>	C	6	SA
<b>GRASS WEEDS</b>				
Brome, Downy	<i>Bromus tectorum</i>	C	2	WA
Cheat	<i>Bromus secalinus</i>	C	2	WA
Crabgrass, Large (Hairy) Smooth	<i>Digitaria sanguinalis</i> <i>Digitaria ischaemum</i>	C C	4 4	SA SA
Foxtail, Giant Green Yellow	<i>Setaria faberi</i> <i>Setaria viridis</i> <i>Setaria glauca</i>	C C C	6 4 4	SA SA SA
Goatgrass, Jointed	<i>Aegilops cylindrical</i>	C	C	WA
Goosegrass	<i>Elusine indica</i>	S	2	SA
Johnsongrass (seedling)	<i>Sorghum halepense</i>	C	12	SA
Medusahead	<i>Taeniatherum caput-medusae</i>	C	2	WA
Panicum, Fall	<i>Panicum dichotomiflorum</i>	S	6	SA
Sandbur	<i>Cenchrus</i> spp.	S	C	A/P
Shattercane	<i>Sorghum bicolor</i>	C	12	SA
Signalgrass, Broadleaf	<i>Brachiaria platyphylla</i>	C	C	SA
Stiltgrass, Japanese	<i>Microstegium vimineum</i>	C	4	A
Vaseygrass	<i>Paspalum urvillei</i>	--	8	P
<b>SEDGES</b>				
Nutsedge, Yellow Purple	<i>Cyperus esculentus</i> <i>Cyperus rotundus</i>	S S	4S 4S	P P
Sedge	<i>Juncus</i> spp.	S	4S	A/P
<sup>1</sup> C=control, S=suppression in northern US only				
<sup>2</sup> Maximum plant height in inches at time of application				
<sup>3</sup> Growth habit: A=annual, SA=summer annual, WA=winter annual, B=biennial, P=perennial				

**WEEDS CONTROLLED  
(With 8 to 12 ounces per acre Impose herbicide)**

Common Name	Species	PRE <sup>1</sup>	POST <sup>2</sup>	ANNUAL/ BIENNIAL/ PERENNIAL <sup>3</sup>
<b>BROADLEAVES</b>				
Anoda, Spurred	<i>Anoda cristata</i>	C	6	SA
Baby's Breath <sup>5</sup>	<i>Gysophila paniculata</i>	--	C	P
Bedstraw, Catchweed	<i>Galium aparine</i>	C	C	WA
Bedstraw, Marsh	<i>Galium</i> spp.	C	C	WA
Beggarweed, Florida	<i>Desmodium tortuosum</i>	C	6	SA
Bindweed, Field	<i>Convolvulus arvensis</i>	--	C	P
Buffalobur	<i>Solanum rostratum</i>	--	C	SA
Burclover	<i>Medicago</i> spp.	--	4	SA
Chickweed, Common	<i>Stellaria media</i>	C	6	SA
Cocklebur, Common	<i>Xanthium strumarium</i>	C	6	SA
Cornsalad, Common	<i>Valerianella locusta</i>	--	C	WA
Crownbeard, Golden	<i>Verbisina encelioides</i>	C	2	SA

Common Name	Species	PRE <sup>1</sup>	POST <sup>2</sup>	ANNUAL/ BIENNIAL/ PERENNIAL <sup>3</sup>
Dandelion	<i>Taraxacum officinale</i>	--	C	P
Dock, Curly	<i>Rumex crispus</i>	C	6	B
Fiddleneck	<i>Amsinckia</i> spp.	--	C	SA
Flax, Spurge	<i>Thymelaea passerine</i>	C	C	A
Fleabane, Annual	<i>Erigeron annuus</i>	--	C	A
Geranium, Carolina	<i>Geranium carolinianum</i>	--	C	WA/B
Geranium, Cranesbill	<i>Geranium maculatum</i>	C	C	WA/B
Ground Cherry	<i>Physalis heterophylla</i>	--	C	P
Hemlock, Poison	<i>Conium maculatum</i>	C	6	B
Henbit	<i>Lamium amplexicaule</i>	C	3	WA/B
Hoary Cress	<i>Cardaria</i> spp.	--	C	P
Houndstongue, Bristly	<i>Cynoglossum officinale</i>	C	C	B
Indigo, Hairy	<i>Indigofera hirsute</i>	C	2	P
Jimsonweed	<i>Datura stramonium</i>	C	6	SA
Knapweed, Russian <sup>6</sup>	<i>Centaurea repens</i>	--	C*	P
Knotweed, Prostrate	<i>Polygonum aviculare</i>	C	C	SA
Kochia*	<i>Kochia scoparia</i>	C	3	SA
Lambsquarters, Common	<i>Chenodium album</i>	C	3	SA
Morningglory,				
Cypressvine	<i>Ipomoea quamoclit</i>	C	6	SA
Entireleaf	<i>Ipomoea hederacea</i>	C	6	SA
Ivyleaf	<i>Ipomoea hederacea</i>	C	6	SA
Pitted	<i>Ipomoea lacunose</i>	C	6	SA
Smallflower	<i>Jacquemontia tamnifolia</i>	C	6	SA
Tall	<i>Ipomoea purpurea</i>	C	6	SA
Mustard, Wild	<i>Brassica kaber</i>	C	C	WA
Onion, Wild	<i>Allium canadense</i>	C	C	P
Pepperweed, Perennial	<i>Lepidium latifolium</i>	--	C	P
Pigweed <sup>4</sup>	<i>Amaranthus</i> spp.	C	6	SA
Plantain, Narrowleaf	<i>Plantago lanceolata</i>	C	C	B
Poinsettia, Wild	<i>Euphorbia heterophylla</i>	C	6	SA
Puncture Vine	<i>Tribulus terrestris</i>	--	C	SA
Purslane, Common	<i>Portulaca oleracea</i>	C	4	SA
Pusley, Florida	<i>Richardia scapra</i>	C	4	SA
Queen Anne's Lace	<i>Daucus carota</i>	C	C	B
Ragweed,				
Common	<i>Ambrosia artemisiifolia</i>	C	3	SA
Giant	<i>Ambrosia trifida</i>	S	6	SA
Western	<i>Ambrosia psilostachya</i>	--	C	A/P
Rocket, Yellow	<i>Barbarea vulgaris</i>	C	C	WA
Senna, Coffee	<i>Cassia occidentalis</i>	C	4	SA
Sicklepod	<i>Senna obtusifolia</i>	C	6	SA
Sida, Prickly	<i>Sida spinosa</i>	C	6	SA
Smartweed,				
Ladysthumb	<i>Polygonum persicaria</i>	C	C	SA
Pennsylvania	<i>Polygonum pennsylvanicum</i>	C	C	SA
Swamp	<i>Polygonum coccineum</i>	C	C	SA
Spurge,				
Leafy	<i>Euphorbia esula</i>	--	Fall*	P
Spotted	<i>Euphorbia maculate</i>	C	4	SA
Toothed	<i>Euphorbia dentate</i>	C	4	SA
Starbur, Bristly	<i>Acanthospermum hispidum</i>	--	6	SA
Sunflower	<i>Helianthus annuus</i>	--	18	SA
Tansymustard	<i>Descurainia pinnata</i>	C	C	WA

Common Name	Species	PRE <sup>1</sup>	POST <sup>2</sup>	ANNUAL/ BIENNIAL/ PERENNIAL <sup>3</sup>
Teasel, Common	<i>Dipsacus fullonum</i>	--	C	B
Thistle,				
Bull	<i>Cirsium vulgare</i>	S	C	WA/B
Musk	<i>Carduus nutans</i>	--	S	B
Platt	<i>Cirsium canescens</i>	S	C	P
Russian*	<i>Salsola iberica</i>	C	3	A
Toadflax, Dalmatian	<i>Linaria dalmatica</i>	--	C*	P
Velvetleaf	<i>Abutilon theophrasti</i>	C	C	A
Vervain, Blue	<i>Verbena hastata</i>	--	S	WA
Vervain, Prostrate	<i>Verbena bracteata</i>	--	C	P
Whitetop	<i>Cardaria</i> spp.	--	C	P
Willowherb	<i>Epilobium</i> spp.	--	C	P
Woodsorrel, Yellow	<i>Oxalis stricta</i>	C	C	P
<b>GRASS</b>				
Bahiagrass	<i>Paspalum nutatum</i>	S	C*	P
Barley, Little	<i>Hordeum pusillum</i>	C	4	WA
Barley, Squirrel Tail	<i>Hordeum jubatum</i>	--	C	P
Barnyardgrass	<i>Echinochloa crus-galli</i>	C	6	SA
Cheat	<i>Bromus secalinus</i>	C	C	WA
Crabgrass	<i>Digitaria</i> spp.	C	6	SA
Crowfootgrass	<i>Dactyloctenium aegyptium</i>	C	C	SA
Dallisgrass	<i>Paspalum dilatatum</i>	S	C*	P
Downy Brome	<i>Bromus tectorum</i>	C	C	WA
Dropseed, Tall	<i>Sporobolus cryptandrus</i>	S	C	A/P
Fescue, Tall	<i>Festuca arundinacea</i>	C	C*	P
Foxtail,				
Giant	<i>Setaria faberi</i>	C	C	SA
Green	<i>Setaria viridis</i>	C	C	SA
Knotroot	<i>Setaria geniculatus</i>	S	6	SA
Purple Robust	<i>Setaria viridis</i>	S	S	SA
Yellow	<i>Setaria glauca</i>	C	4	SA
Garlic, Wild	<i>Allium vineale</i>	C	C	P
Goosegrass	<i>Elusine indica</i>	C	3S	SA
Itchgrass	<i>Rottboellia cochinchinensis</i>	--	C*	SA
Johnsongrass,				
Seedling	<i>Sorghum halepense</i>	C	C	SA
Rhizome	<i>Sorghum halepense</i>	--	C*	P
Medusahead	<i>Taeniatherum captu-medusa</i>	C	C	WA
Panicum,				
Fall	<i>Panicum dichotomiflorum</i>	C	C	SA
Texas	<i>Panicum texanum</i>	C	C	SA
Ryegrass, Annual (Italian)	<i>Lolium multiflorum</i>	C	C	WA
Ryegrass, Perennial	<i>Lolium perenne</i>	--	C	P
Sandbur	<i>Cenchrus</i> spp.	S	C	A/P
Shattercane	<i>Sorghum bicolor</i>	C	C	SA
Signalgrass, Broadleaf	<i>Brachiaria platyphylla</i>	C	C	SA
Smutgrass	<i>Sporobolus indicus</i>	--	C	P
Stiltgrass, Japanese	<i>Microstegium vimineum</i>	C	C	A
Stinkgrass, Annual	<i>Eragrostis cilianensis</i>	C	2	SA
Torpedograss	<i>Panicum repens</i>	--	C	P
Vaseygrass	<i>Paspalum urvillei</i>	--	C	P
Wild Oats	<i>Avena fatua</i>	--	C	WA

Common Name	Species	PRE <sup>1</sup>	POST <sup>2</sup>	ANNUAL/ BIENNIAL/ PERENNIAL <sup>3</sup>
<b>SEDGES/RUSHES</b>				
Nutsedge,				
Yellow	<i>Cyperus esculentus</i>	C	C	P
Purple	<i>Cyperus rotundus</i>	C	C	P
Rush	<i>Juncus</i> spp.	S	4	A/P
<sup>1</sup> C=control, S=suppression in northern US only <sup>2</sup> Maximum plant height in inches at time of application <sup>3</sup> Growth habit: A=annual, SA=summer annual, WA=winter annual, B=biennial, P=perennial <sup>4</sup> Some species are tolerant and resistant biotypes are possible <sup>5</sup> For annual control. The addition of 1-2 pints of 2,4-D will aid in burndown <sup>6</sup> For best control apply in the fall *See <b>Special Weed Control</b> section of this label				

#### STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal.

**PESTICIDE STORAGE: KEEP FROM FREEZING. Do not store below 20°F.**

**PESTICIDE DISPOSAL:** Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.

#### CONTAINER DISPOSAL:

**Nonrefillable Container (five gallons or less):** Nonrefillable container. Do not reuse or refill this container. Offer for recycling, if available. Clean container promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

**Nonrefillable Container (greater than five gallons):** Nonrefillable container. Do not reuse or refill this container. Offer for recycling, if available. Clean container promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container ¼ full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times.

**Refillable Container:** Refillable container. Refill this container with imazapic only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. For final disposal, offer for recycling or reconditioning if appropriate, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

#### LIMITATION OF WARRANTY AND LIABILITY

Read the entire directions for use, conditions of warranties and limitations of liability before using this product. If terms are not acceptable, return the unopened product container at once.

By using this product, user or buyer accepts the following **CONDITIONS, DISCLAIMER OF WARRANTIES and LIMITATIONS OF LIABILITY.**

**CONDITIONS:** The directions for use of this product are believed to be adequate and must be followed carefully. However, it is impossible to eliminate all risks associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or the manner of use or application, all of which are beyond the control of Makhteshim Agan of North America, Inc. All such risks shall be assumed by the user or buyer.

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