

66222-170

1/26/2010

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**U.S. ENVIRONMENTAL PROTECTION AGENCY**  
**Office of Pesticide Programs**  
**Registration Division (7505P)**  
**Ariel Rios Building**  
**1200 Pennsylvania Ave., NW**  
**Washington, D.C. 20460**

EPA Reg. Number:  
  
66222-170

Date of Issuance:  
  
JAN 26 2010

NOTICE OF PESTICIDE:  
 \_\_\_ Registration  
X Reregistration  
 (under FIFRA, as amended)

Term of Issuance:

Name of Pesticide Product:  
  
Rotary 2 SL

Name and Address of Registrant (include ZIP Code):  
 Makhteshim Agan of North America, Inc.  
 4515 Falls of Neuse Road, Suite 300  
 Raleigh, NC 27609

**Note: Changes in labeling differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Registration Division prior to use of the label in commerce. In any correspondence on this product always refer to the above EPA registration number.**

On the basis of information furnished by the registrant, the above named pesticide is hereby registered/reregistered under the Federal Insecticide, Fungicide and Rodenticide Act. Registration is in no way to be construed as an endorsement or recommendation of this product by the Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

This product is reregistered in accordance with FIFRA section 4(g)(2)(C) provided you:

1. Submit and/or cite all data required for registration review/reregistration of your product when the Agency requires all registrants of similar products to submit data.
2. Make all the following changes to the product label:
  - a. Due to the importance of resistance management to a long-term pest-management strategy, it is suggested that resistance management grouping symbols and statements be included on the labeling as described in PR Notice 2001-5.
  - b. Under First Aid, change the heading to read "If on skin **or clothing**". The "If in eyes" and "If inhaled" statements are optional for this product.
  - c. Change the heading to read "HAZARDS TO HUMANS AND DOMESTIC ANIMALS". Change the statement to read "CAUTION Harmful if swallowed or absorbed through skin. Avoid contact with skin or clothing."
  - d. Change the PPE sentence to read "Some materials that are chemical-resistant to this product **are made of any waterproof material.**"

Continued on Page 2

Signature of Approving Official:

Jim Tompkins  
 Product Manager 25  
 Herbicide Branch  
 Registration Division (7505P)

Date:

JAN 26 2010

- e. Throughout the label, change the heading from “GENERAL INFORMATION” to “PRODUCT INFORMATION”, as the term “general” renders all information contained within to be advisory and unenforceable.
- f. Under early-entry PPE, change the gloves statement to read “Chemical-resistant gloves **made of any waterproof material**”.
- g. Make the following changes to the Spray Drift Management section:
  - i. Remove the first paragraph “The following information is provided as general guidance...vegetation management objective.”, since there are specific spray drift requirements set forth in the imazapyr RED.
  - ii. Remove the fourth paragraph “To minimize spray drift, the applicator should be familiar...application of this product.”
  - iii. Change the heading from “Managing spray drift from aerial applications” to “Spray drift requirements for aerial applications”.
  - iv. Under spray drift requirements for aerial applications, add the following requirement as per imazapyr RED:

“Applicators are required to use a Coarse or coarser droplet size (ASABE S572) or, if specifically using a spinning atomizer nozzle, applicators are required to use a volume mean diameter (VMD) of 385 microns or greater for release heights below 10 feet; Applicators are required to use a Very Coarse or coarser droplet size or, if specifically using a spinning atomizer nozzle, applicators are required to use a VMD of 475 microns or greater for release heights above 10 feet; Applicators must consider the effects of nozzle orientation and flight speed when determining droplet size.”
  - v. Change the heading from “Managing spray drift from ground boom applications” to “Spray drift requirements for ground boom applications”.
- h. Throughout the label, change the phrase from “recommended amount/rate of ROTARY 2 SL” to “specified amount/rate of ROTARY 2 SL”.
- i. On page 13, correct the typo in the sentence “ROTARY 2 SL may be broadcast **by** ground or hand held equipment to control understory brush...”
- j. Change the Pesticide Disposal statement to read “Wastes resulting from the use of this product **must** be disposed of on site or at an approved waste disposal facility.”
- k. Under Container Handling, change the second Refillable Container sentence to read “Refill this container with **imazapyr** only.”

The basic confidential statement of formula (CSF) dated December 15, 2008 is acceptable.

A stamped copy of your label is enclosed for your records. You must submit one (1) copy of the final printed label before you release the product for shipment. Products shipped after twelve (12) months from the date of this notice or the next printing of the label, whichever occurs first, must bear the new revised label. If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA sec. 6(e). Your release for shipment of the product constitutes acceptance of these conditions.

Enclosure

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# ROTARY 2 SL

Under the Federal Insecticide, Fungicide, and Rodenticide Act as amended, for the pesticide registered under EPA Reg. No.

66222-170

**ROTARY 2 SL** controls undesirable vegetation in forestry use sites managed for timber production, including forest roads. **ROTARY 2 SL** may be used on 1) forestry sites that contain temporary surface water in areas caused by forest management activities; 2) to treat drainage ditches (edges only if water is present), intermittent drainage, intermittently flooded low lying sites, seasonally dry flood plains and transitional areas between upland and lowland sites when no water is present; 3) be applied to marshes, swamps and bogs after water has receded, as well as seasonally dry flood deltas, except in the states of California and New York; 4) pasture grass, rangeland and other labeled non-cropland areas.

**ACTIVE INGREDIENT:** Isopropylamine salt of Imazapyr (2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid)\* .....27.8%  
**OTHER INGREDIENTS:** .....72.2%  
**TOTAL:** .....100.0%

\*Equivalent to 22.6% (2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid) or 2 pounds acid per gallon.

EPA Reg. No. 66222-170

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

**KEEP OUT OF REACH OF CHILDREN  
CAUTION!/PRECAUCIÓN!**

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle.  
(If you do not understand this label, find someone to explain it to you in detail.)

Manufactured for:  
Makhteshim Agan of North America, Inc.  
4515 Falls of Neuse Rd., Suite 300  
Raleigh, NC 27609

**NET CONTENTS: \_\_\_\_\_ GALLONS**

FIRST AID	
<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>• <b>DO NOT</b> induce vomiting unless told to do so by a poison control center or doctor.</li> <li>• <b>DO NOT</b> give anything by mouth to an unconscious person.</li> </ul>
<b>If on skin</b>	<ul style="list-style-type: none"> <li>• Take off contaminated clothing.</li> <li>• Rinse skin immediately with plenty of water for 15-20 minutes.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If in eyes</b>	<ul style="list-style-type: none"> <li>• Hold eye open and rinse slowly and gently with water for 15-20 minutes.</li> <li>• Remove contact lenses, if present, after 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>
HOT LINE NUMBER	
Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact Prozar at 1-877-250-9291 for emergency medical treatment information.	

**PRECAUTIONARY STATEMENTS  
HAZARDS TO HUMAN**

**CAUTION!** Harmful if swallowed or absorbed through skin. Causes moderate eye irritation. Avoid contact with skin, eyes or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco. Remove and wash contaminated clothing before reuse.

**PERSONAL PROTECTIVE EQUIPMENT (PPE):**

Some materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for category A on an EPA chemical-resistance category selection chart.

Mixers, loaders, applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves, such as barrier laminate, butyl rubber or polyethylene for all mixers and loaders, plus applicators using handheld equipment
- Shoes plus socks

See engineering controls for additional requirements.

Follow manufacturer's instructions for cleaning and maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry. Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them.

**USER SAFETY RECOMMENDATIONS**

Users should:

1. Wash hands with plenty of soap and water before eating, drinking, chewing gum, using tobacco, or using the toilet.
2. Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
3. Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

**ENGINEERING CONTROLS**

Pilots must use an enclosed cockpit that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(6)].

**ENVIRONMENTAL HAZARDS**

This product is toxic to plants. Drift and runoff may be hazardous to plants in water adjacent to treated areas. **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 disposing of equipment washwaters or rinsate. See Directions for Use for additional precautions and requirements.

**PHYSICAL AND CHEMICAL HAZARDS**

Spray solutions of **ROTARY 2 SL** should be mixed, stored, and applied only in stainless steel, fiberglass, plastic, and plastic-lined steel containers.

**DO NOT** mix, store, or apply **ROTARY 2 SL** or spray solutions of **ROTARY 2 SL** in unlined steel (except stainless steel) containers or spray tanks.

**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 may be in the area during application.

For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

### GENERAL INFORMATION

**ROTARY 2 SL** is an aqueous solution intended to be mixed with water, diesel oil, or recommended seed oils and penetrating oils for various applications to control undesirable vegetation in forestry sites managed for timber production. It can be used along forestry roads, for site preparation, for conifer release from woody and herbaceous competition, and for stump and cut-stem treatment of unwanted woody vegetation. **ROTARY 2 SL** may also be applied on forestry sites where temporary surface water may collect, such as in potholes, between planting beds, in equipment ruts, etc., created by forest management activities, **except in the states of California and New York**. **ROTARY 2 SL** may be used to control undesirable vegetation along non-irrigation ditch banks and for the establishment and maintenance of wildlife openings, **except in the state of California**.

**ROTARY 2 SL** may be used to treat drainage ditches, intermittent drainage, intermittently flooded low lying sites, seasonally dry flood plains and transitional areas between upland and lowland sites when no water is present, **except in the states of California and New York**. If drainage ditches contain water, only the edges of the ditch may be treated. **ROTARY 2 SL** may also be applied to marshes, swamps and bogs after water has receded, as well as seasonally dry flood deltas, **except in the states of California and New York**.

In addition, **ROTARY 2 SL** aids in spot treatment control of brush found in grass pasture, rangeland and other non-cropland areas including fencerows, non-irrigation ditchbanks, petroleum tank farms, pumping installations, rights of way (utility, railroad and pipeline), storage areas, utility plants, and areas within these sites that are grazed or cut for hay. Weeds found on shoulders or in cracks and crevices of roads and beneath pavements can be controlled if **ROTARY 2 SL** is applied with asphalt and asphalt slurries during paving operations or normal maintenance to prevent weeds from invading paved roadways.

**DO NOT APPLY** to natural or man-made bodies of water such as lakes, reservoirs, ponds, streams, rivers and canals.

**ROTARY 2 SL** controls vegetation by absorption through foliage and roots, from which it is rapidly translocated rapidly throughout the plant, where it accumulates in rapidly-growing meristematic tissue. Treated plants stop growing soon after spray treatment. Chlorosis (yellowing of plant tissue) first appears in the newest leaves and necrosis spreads from this point. In perennials, **ROTARY 2 SL** is translocated into and kills the roots and underground storage tissues to prevent most regrowth. Chlorosis and tissue necrosis may not be apparent in some plant species for several weeks after application and may take months for various woody plants, brush and trees.

### IMPORTANT

**DO NOT** use on food or feed crops. **DO NOT** use on Christmas trees. **DO NOT** apply to the inside of ditches used to transport irrigation water. Keep away from fertilizers, insecticides, fungicides, and seeds. **DO NOT** apply or drain or flush equipment on or near desirable plants, or onto areas where their roots may extend, or in locations where the chemical may be washed or moved into contact within their dripline

Clean application equipment immediately after using this product. Flush tank, pump, hoses and booms with several charges of water after removing nozzle tips and screens. Clean nozzle tips and screens separately.

### 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. The requirements in this box apply to use on trees being grown for sale or other commercial use, or for commercial seed production, or for production of timber or wood products, or for research purposes.

**DO NOT** enter or allow worker entry into treated areas during the restricted entry interval (REI) of **48 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, such as barrier laminate, butyl rubber or polyethylene
- Shoes plus socks
- Protective eyewear

**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 (WPS) 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 GENERAL INFORMATION section of this label for a description of noncrop sites.

**DO NOT** enter or allow others to enter treated areas until sprays have dried.

**SPRAY DRIFT MANAGEMENT**

The following information is provided as general guidance for managing spray drift. Specific use recommendations for **ROTARY 2 SL** may differ, depending on the application technique used and the vegetation management objective.

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 may 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 threatened or endangered species, or 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 best drift management strategy and most effective way 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 are made improperly, or under unfavorable environmental conditions (see **WIND, TEMPERATURE AND HUMIDITY, AND TEMPERATURE INVERSIONS**, below).

**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** – **DO NOT** exceed the nozzle manufacturer’s recommended pressures. For many nozzle types, lower pressure produces larger droplets. 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 orientations and is recommended practice. Significant deflection from the 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.

**Application Height:** Making applications at the lowest possible height (aircraft, ground driven spray boom) 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 downwind edges of the field, the applicator must compensate for this displacement by adjusting the path of the application equipment (e.g. aircraft, ground) upwind. Swath adjustment distance 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. Application 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:** Drift potential is high during a temperature inversion. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain in a concentrated cloud, which can move in unpredictable directions due to the light variable winds common during inversion. 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 concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

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

**Aerial Application Methods and Equipment:** Use 2 or more gallons of water 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 areas and to avoid spray drift.

**Managing spray drift from aerial applications:** Applicators must follow these requirements to avoid off-target drift movement: 1) boom length – the distance of the outermost nozzles on the boom must not exceed 60% of the length of the wingspan or 90% of the rotor blade diameter, 2) nozzle orientation – nozzles must always point backward parallel with the air stream and never be pointed downward more than 45 degrees, and 3) application height – without compromising aircraft safety, applications should be made at a height of 10 feet or less above the crop canopy or tallest plants; 4) applicators must use upwind swath displacement; 5) applications into temperature inversions are prohibited; 6) do not apply with wind speeds less than 3 mph and with wind speeds greater than 10 mph. Applicators must follow the most restrictive use cautions to avoid drift hazards, including those found in this labeling as well as applicable state and local regulations and ordinances.

**Ground Application (Broadcast):** Use 5 or more gallons of water 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.

**Managing spray drift from ground boom applications:** Applicators are required to use a nozzle height below 4 feet above the ground or plant canopy and Coarse or coarser droplet size (ASABE S572) or, if



specifically using a spinning atomizer nozzle, applicators are required to use a volume mean diameter (VMD) of 385 microns or greater.  
Applications with wind speeds greater than 10 mph are prohibited.  
Applications into temperature inversions are prohibited.

**WEEDS CONTROLLED**

**ROTARY 2 SL** provides postemergence control and some residual control of the following target weed species. Degree of control is both species and rate dependent.

**GRASSES**

The species of annual and perennial grasses controlled by **ROTARY 2 SL** include the following:

- Annual bluegrass (*Poa annua*)
- Bahiagrass (*Paspalum notatum*)
- Barnyardgrass (*Echinochloa crus-galli*)
- Beardgrass (*Andropogon* spp.)
- Bermudagrass (*Cynodon dactylon*)
- Big bluestem (*Andropogon gerardii*)
- Broadleaf signalgrass (*Brachiaria platyphylla*)
- Canada bluegrass (*Poa compressa*)
- Cattail (*Typha* spp.)
- Cheat (*Bromus secalinus*)
- Cogongrass (*Imperata cylindrica*)<sup>1</sup>
- Crabgrass (*Digitaria* spp.)
- Crowfootgrass (*Dactyloctenium aegyptium*)
- Dallisgrass (*Paspalum dilatatum*)
- Downy brome (*Bromus tectorum*)
- Fall panicum (*Panicum dichotomiflorum*)
- Feathertop (*Pennisetum villosum*)
- Fescue (*Festuca* spp.)
- Foxtail (*Setaria* spp.)
- Giant reed (*Arundo donax*)
- Goosegrass (*Eleusine indica*)
- Guineagrass (*Panicum maximum*)
- Italian ryegrass (*Lolium multiflorum*)
- Itchgrass (*Rottboellia exaltata*)
- Johnsongrass (*Sorghum halepense*)
- Junglerice (*Echinochloa colonum*)
- Kentucky bluegrass (*Poa pratensis*)
- Lovegrass (*Eragrostis* spp.)
- Orchardgrass (*Dactylis glomerata*)
- Panicum* spp.
- Paragrass (*Brachiaria mutica*)
- Phragmites (*Phragmites australis*)
- Prairie cordgrass (*Spartina pectinata*)
- Prairie threeawn (*Aristida oligantha*)
- Quackgrass (*Agropyron repens*)
- Reed canary grass (*Phalaris arundinacea*)
- Saltgrass (*Distichlis stricta*)
- Sand dropseed (*Sporobolus cryptandrus*)
- Sandbur (*Cenchrus* spp.)
- Smooth brome (*Bromus inermis*)
- Sprangletop (*Leptochloa* spp.)
- Timothy (*Phleum pratense*)
- Torpedograss (*Panicum repens*)
- Vaseygrass (*Paspalum urvillei*)
- Wild barley (*Hordeum* spp.)

- Wild oats (*Avena fatua*)
- Wirestem muhly (*Muhlenbergia frondosa*)
- Witchgrass (*Panicum capillare*)
- Woolly cupgrass (*Eriochloa villosa*)

<sup>1</sup>Use minimum of 48 oz per acre.

**BROADLEAF WEEDS**

The species of annual and perennial broadleaf weeds controlled by **ROTARY 2 SL** include the following:

- Arrowwood (*Pluchea sericea*)
- Broom snakeweed (*Gutierrezia sarothrae*)
- Bull Thistle (*Cirsium vulgare*)
- Burclover (*Medicago* spp.)
- Burdock (*Arctium* spp.)
- Camphorweed (*Heterotheca subaxillaris*)
- Carolina geranium (*Geranium carolinianum*)
- Carpetweed (*Mullugo verticillata*)
- Chickweed, mouseear (*Cerastium vulgatum*)
- Clover (*Trifolium* spp.)
- Cocklebur (*Xanthium strumarium*)
- Common chickweed (*Stellaria media*)
- Common ragweed (*Ambrosia artemisiifolia*)
- Cudweed (*Gnaphalium* spp.)
- Dandelion (*Taraxacum officinale*)
- Desert camelthorn (*Alhagi pseudalhagi*)
- Diffuse knapweed (*Centaurea diffusa*)
- Dock (*Rumex* spp.)
- Dogfennel (*Eupatorium capillifolium*)
- Fiddleneck (*Amsinckia intermedia*)
- Filaree (*Erodium* spp.)
- Fleabane (*Erigeron* spp.)
- Giant ragweed (*Ambrosia trifida*)
- Goldenrod (*Solidago* spp.)
- Gray rabbitbrush (*Chrysothamnus nauseosus*)
- Henbit (*Lamium applexicaule*)
- Hoary vervain (*Verbena stricta*)
- Horseweed (*Conyza canadensis*)
- Indian mustard (*Brassica juncea*)
- Japanese bamboo/knotweed (*Polygonum cuspidatum*)
- Knotweed, prostrate (*Polygonum aviculare*)
- Kochia (*Kochia scoparia*)
- Lambsquarters (*Chenopodium album*)
- Little mallow (*Malva parviflora*)
- Milkweed (*Asclepias* spp.)
- Miners lettuce (*Montia perfoliata*)
- Mullein (*Verbascum* spp.)
- Nettleleaf goosefoot (*Chenopodium murale*)
- Oxeye daisy (*Chrysanthemum leucanthemum*)
- Pepperweed (*Lepidium* spp.)
- Pigweed (*Amaranthus* spp.)
- Plantain (*Plantago* spp.)
- Pokeweed (*Phytolacca americana*)
- Primrose (*Oenothera kunthiana*)
- Puncturevine (*Tribulus terrestris*)
- Purple loosestrife (*Lythrum salicaria*)
- Purslane (*Portulaca* spp.)
- Pusley, Florida (*Richardia scabra*)
- Rocket, London (*Sisymbrium irio*)

- Rush skeletonweed (*Chondrilla juncea*)
- Russian knapweed (*Centaurea repens*)
- Russian thistle (*Salsola kali*)
- Saltbush (*Atriplex* spp.)
- Shepherd's purse (*Capsella bursa-pastoris*)
- Silverleaf nightshade (*Solanum elaeagnifolium*)
- Smartweed (*Polygonum* spp.)
- Sorrell (*Rumex* spp.)
- Sowthistle (*Sonchus* spp.)
- Spurge, annual (*Euphorbia* spp.)
- Stinging nettle (*Urtica dioica*)
- Sunflower (*Helianthus* spp.)
- Sweet clover (*Melilotus* spp.)
- Tansymustard (*Descurainia pinnata*)
- Texas thistle (*Cirsium texanum*)
- Velvetleaf (*Abutilon theophrasti*)
- Western ragweed (*Ambrosia psilostachya*)
- Wild carrot (*Daucus carota*)
- Wild lettuce (*Lactuca* spp.)
- Wild parsnip (*Pastinaca sativa*)
- Wild turnip (*Brassica campestris*)
- Wolyleaf bursage (*Ambrosia grayi*)
- Yellow starthistle (*Centaurea solstitialis*)
- Yellow woodsorrel (*Oxalis stricta*)

**VINES AND BRAMBLES**

**ROTARY 2 SL** controls the following species of vines and brambles:

- Field bindweed (*Convolvulus arvensis*)
- Greenbriar (*Smilax* spp.)
- Hedge bindweed (*Calystegia sepium*)
- Honeysuckle (*Lonicera* spp.)<sup>1</sup>
- Kudzu (*Pueraria lobata*)<sup>1,2</sup>
- Morningglory (*Ipomoea* spp.)
- Poison ivy (*Rhus radicans*)
- Redvine (*Brunnichia cirrhosa*)
- Trumpetcreeper (*Campsis radicans*)
- Virginia creeper (*Parthenocissus quinquefolia*)
- Wild buckwheat (*Polygonum convolvulus*)
- Wild grape (*Vitis* spp.)
- Wild rose (*Rosa* spp.)<sup>1</sup>
- Including Multiflora rose (*Rosa multiflora*)
- Macartney rose (*Rosa bracteata*)

<sup>1</sup>Use higher labeled rates.

<sup>2</sup>Apply in a minimum of 75 GPA – More than one application may be required to control established stands.

**WOODY BRUSH AND TREES**

Woody brush and trees controlled by **ROTARY 2 SL** include the following:

- Alder (*Alnus* spp.)
- American beech (*Fagus grandifolia*)
- Ash (*Fraxinus* spp.)<sup>1</sup>
- Aspen (*Populus* spp.)
- Australian pine (*Casuarina equisetifolia*)<sup>5</sup>
- Autumn olive (*Elaeagnus umbellata*)
- Bald cypress (*Taxodium distichum*)<sup>4</sup>

- Bigleaf maple (*Acer macrophyllum*)<sup>1</sup>
- Birch (*Betula* spp.)<sup>5</sup>
- Black locust (*Robinia pseudoacacia*)<sup>5</sup>
- Black oak (*Quercus kelloggii*)
- Blackgum (*Nyssa sylvatica*)<sup>2</sup>
- Boxelder (*Acer negundo*)
- Brazilian peppertree (*Schinus terebinthifolius*)
- Ceanothis (*Ceanothis* spp.)
- Cherry (*Prunus* spp.)<sup>1,2</sup>
- Chinaberry (*Melia azedarach*)
- Chinese tallow-tree (*Sapium sebiferum*)
- Chinquapin (*Castanopsis chrysophylla*)<sup>4</sup>
- Cottonwood (*Populus* spp.)
- Cypress (*Taxodium* spp.)
- Dogwood (*Cornus* spp.)<sup>1</sup>
- Elderberry (*Sambucus* spp.)<sup>5</sup>
- Elm (*Ulmus*)<sup>5</sup>
- Eucalyptus (*Eucalyptus* spp.)
- Hawthorn (*Crataegus* spp.)
- Hazel (*Corylus comuta*)<sup>5</sup>
- Hickory (*Carya* spp.)<sup>1</sup>
- Holly (*Ilex* spp.)<sup>1,4</sup>
  - Including Gallberry (*Ilex glabra*)<sup>4,5</sup>
  - Tall gallberry (*Ilex coriacea*)<sup>4</sup>
- Yaupon (*Ilex vomitoria*)<sup>4</sup>
- Honeylocust (*Gleditsia triacanthos*)<sup>5</sup>
- Huckleberry (*Gaylussacia* spp.)
- Lyonia* spp.
  - Including Fetterbush (*Lyonia lucida*)
  - Staggerbush (*Lyonia mariana*)
- Madrone (*Arbutus menziesii*)
- Manzanita, greenleaf (*Arctostaphylos patula*)<sup>4</sup>
- Maple (*Acer* spp.)
- Melaleuca (*Melaleuca quinquenervia*)
- Mulberry (*Morus* spp.)<sup>1,3</sup>
- Oak (*Quercus* spp.)<sup>1,3</sup>
- Persimmon (*Diospyros virginiana*)<sup>2</sup>
- Poison oak (*Rhus diversiloba*)
- Popcorn-tree (*Sapium sebiferum*)
- Poplar (*Populus* spp.)<sup>2</sup>
- Privet (*Ligustrum vulgare*)
- Red alder (*Alnus rubra*)
- Red maple (*Acer rubrum*)
- Russian olive (*Eleagnus angustifolia*)
- Saltcedar (*Tamarix pentandra*)
- Sassafras (*Sassafras albidum*)
- Scotch broom (*Cytisus scoparius*)<sup>5</sup>
- Sourwood (*Oxydendrum arboreum*)<sup>2</sup>
- Sumac (*Rhus* spp.)
- Sweetbay magnolia (*Magnolia virginiana*)<sup>4,5</sup>
- Sweetgum (*Liquidambar styraciflua*)
- Sycamore (*Platanus occidentalis*)
- Tanoak (*Lithocarpus densiflorus*)<sup>1,4,5</sup>
- Titi (*Cyrilla racemiflora*)<sup>1,4</sup>
- Tree of heaven (*Ailanthus altissima*)<sup>5</sup>
- Vaccinium* spp.
  - Including Blueberry (*Vaccinium* spp.)
  - Sparkleberry (*Vaccinium arboreum*)

- Waxmyrtle (*Myrica californica*)<sup>4,5</sup>  
(*Myrica cerifera*)<sup>4,5</sup>
- Willow (*Salix* spp.)
- Yellow poplar (*Linodendron tulipifera*)<sup>1</sup>

- <sup>1</sup>Use higher labeled rates
- <sup>2</sup>Best control with applications prior to formation of fall leaf color
- <sup>3</sup>The degree of control may be species dependent
- <sup>4</sup>Oil emulsion carrier is recommended
- <sup>5</sup>Tank-mix with Garlon 4 as a basal or cut stump treatment

**MIXING AND APPLICATION INSTRUCTIONS FOR SITE PREPARATION**

Enhanced brownout for burning and improved control of brush and grasses may be achieved by applying **ROTARY 2 SL** in an oil emulsion carrier containing 12 to 50% (by volume) recommended oil diluent. Methylated or ethylated seed oils containing at least 50% esterified seed oil by volume are also recommended. Thoroughly mix **ROTARY 2 SL** into the water portion of the carrier, then add the oil and continue mixing to obtain a uniform emulsion. Use the higher label rates of **ROTARY 2 SL** and higher spray volumes when applying to particularly dense or multi-layered canopies of hardwood stands, or difficult-to-control species. Make applications during the growing season, beginning in the spring after full leaf expansion of the target weed or brush has occurred and complete applications before leaf drop in the fall.

Tank mixes may be necessary for chemical control of conifers and other species that are tolerant to **ROTARY 2 SL**. Observe all precautions and restrictions on the product labels. Always follow the most restrictive label. Combinations with other products labeled for forest site preparation may kill certain plants such as legumes and blackberry which are desirable for wildlife habitat.

Before tank-mixing **ROTARY 2 SL** with other products, herbicides, carrier oils, etc., always test compatibility in small containers first! Maintain adequate agitation with all **ROTARY 2 SL** emulsion mixtures to prevent phase separation.

**DO NOT** plant seedlings of black spruce (*Picea mariana*) or white spruce (*Picea glauca*) on sites to which **ROTARY 2 SL** has been broadcast for site preparation or into the treated zone of spot or banded treatments for three months following application or injury may occur.

**Helicopter Spray Equipment:** Thoroughly mix the recommended amount of **ROTARY 2 SL** in 5 to 20 gallons total spray carrier per acre and apply uniformly with properly calibrated helicopter equipment. Use a nonionic surfactant to improve weed control. A drift control agent may be used at its recommended label rate. An anti-foam agent may be added, if needed. Exercise all precautions to minimize or eliminate spray drift. Avoid applications during windy or gusty conditions. Use of a Microfoil™ boom, Thru-Valve™ boom, raindrop nozzles, controlled droplet booms and nozzle configurations is recommended. Maintain adequate buffer zones to minimize potential impacts to desirable vegetation.

**IMPORTANT: DO NOT** make applications by fixed wing aircraft.

Thoroughly clean mixing and application equipment by thoroughly flushing with water immediately after using this product. Prolonged exposure of uncoated/unpainted steel (except stainless steel) surfaces to this product may result in corrosion and failure of the exposed part. Maintaining painted surfaces may prevent corrosion.

**Ground Equipment:** Thoroughly mix and apply the recommended amount of **ROTARY 2 SL** in 5 to 40 gallons total spray carrier per acre for mechanical or backpack applications. Use a nonionic surfactant to enhance weed control. A drift control agent and an anti-foam agent may also be added at the recommended label rates, if needed. If desired, a spray pattern indicator may be used at the recommended label rate. To minimize spray drift, select proper nozzles to avoid spraying a fine mist, use pressures less than 50 psi and **DO NOT** spray under gusty or windy conditions (also refer to **SPRAY**

**DRIFT MANAGEMENT** section). Maintain adequate buffer zones to minimize potential impacts to desirable vegetation.

For best results, apply the spray solution to uniformly cover the foliage of the undesirable vegetation to be controlled.

Clean mixing and application equipment immediately after using this product by thoroughly flushing with water.

**CONIFER SITE PREPARATION TREATMENTS**

**ROTARY 2 SL** will control the grasses, broadleaf weeds, vines and brambles, and woody brush and trees listed above when applied as a forest site preparation treatment before planting the following conifer crop species:

<b>Crop Species</b>	<b>Rate (fl oz/A)</b>
Loblolly Pine ( <i>Pinus taeda</i> )	48-80
Loblolly X Pitch Hybrid	48-80
Longleaf Pine ( <i>Pinus palustris</i> )	48-80
Shortleaf Pine ( <i>Pinus echinata</i> )	48-80
Virginia Pine ( <i>Pinus virginiana</i> )	48-80
Slash Pine ( <i>Pinus elliotii</i> )	40-64
Douglas-Fir ( <i>Pseudotsuga menziesii</i> )	24-48
Western Hemlock ( <i>Tsuga heterophylla</i> )	24-48
Coastal Redwood ( <i>Sequoia sempervirens</i> )	24-48
California Red Fir ( <i>Abies magnifica</i> )	24-40
California White Fir ( <i>Abies concolor</i> )	24-40
Jack Pine ( <i>Pinus banksiana</i> )	24-32
Lodgepole Pine ( <i>Pinus contorta</i> )	24-32
Pitch Pine ( <i>Pinus rigida</i> )	24-32
Ponderosa Pine ( <i>Pinus ponderosa</i> )	24-32
Sugar Pine ( <i>Pinus lambertiana</i> )	24-32
White Pine ( <i>Pinus strobus</i> )	24-32
Black Spruce ( <i>Picea mariana</i> )	24-32
Red Spruce ( <i>Picea rubens</i> )	24-32
White Spruce ( <i>Picea glauca</i> )	24-32

Broadcast the recommended rate of **ROTARY 2 SL** per acre as a foliar spray for long-term control of the labeled woody plants and residual control of herbaceous weeds. Herbaceous grasses and broadleaf weeds will be controlled within 4-6 weeks after treatment and may provide fuel to facilitate a site preparation burn, if desired, to control conifers or other species tolerant to the herbicide.

For tracts to be planted with loblolly, loblolly x pitch hybrid, longleaf pine, shortleaf pine, Virginia pine and slash pine, apply **ROTARY 2 SL** at 64 fl oz /A on areas that have little to no re-sprouting vegetation following recent management activities such as harvesting, mechanical shearing, burning, piling or bedding. Apply this treatment after September 1.

**HARDWOOD SITE PREPARATION TREATMENTS**

For site preparation before planting hardwood species in the southeast and gulf coast states (Virginia to Texas), apply **ROTARY 2 SL** at 48 fl oz/A before the end of July. Application in an emulsion carrier with a minimum of 12% oil is recommended. To avoid injury to hardwood seedlings planted after the site preparation treatment, **DO NOT** plant hardwood seedlings before January of the year following site preparation.

**DIRECTED FOLIAR APPLICATIONS FOR CONIFER RELEASE**

Apply **ROTARY 2 SL** as a directed spray using water or oil emulsion carrier to control and suppress the labeled brush and weed species. Directed sprays may be made using low carrier volumes (typically 10 gallons total finished spray per acre or less) in stands of conifers (see below) of all ages by targeting the unwanted vegetation and avoiding spray contact to the conifers. **DO NOT** exceed the maximum rates listed for the conifer species below.

<b>Crop Species</b>	<b>Rate (fl. oz/Acre)</b>
Loblolly Pine ( <i>Pinus taeda</i> )	24-40
Loblolly X Pitch Hybrid	24-40
Virginia Pine ( <i>Pinus virginiana</i> )	24-40
Longleaf Pine ( <i>Pinus palustris</i> )	24-32
Pitch Pine ( <i>Pinus rigida</i> )	24-32
Shortleaf Pine ( <i>Pinus echinata</i> )	24-32
Slash Pine ( <i>Pinus elliotii</i> )	24-32
White Pine ( <i>Pinus strobus</i> )	16-32
Lodgepole Pine ( <i>Pinus contorta</i> )	16-24
Douglas-Fir ( <i>Pseudotsuga menziesii</i> )	16-24
Jack Pine ( <i>Pinus banksiana</i> )	12-24
Black Spruce ( <i>Picea mariana</i> )	12-24
Red Spruce ( <i>Picea rubens</i> )	12-24
White Spruce ( <i>Picea glauca</i> )	12-24

Generally, for directed or spot spray foliar applications, use -10% **ROTARY 2 SL** in water. For brush species with thick leaf cuticles or difficult-to-control species, apply **ROTARY 2 SL** in an oil emulsion, using a recommended oil diluent at 12-50% by volume. Apply the spray solution to at least 2/3 of each hardwood crown using backpack sprayers or handheld equipment. **DO NOT** spray to the point of runoff and avoid overspray onto conifers. For low volume foliar applications to control big leaf maple, use a 5% (by volume) **ROTARY 2 SL** solution or emulsion.

Some minor conifer growth inhibition (height) may be observed when release treatments are made during periods of active conifer growth. To minimize potential growth inhibition, apply conifer release treatments late in the growing season after formation of conifer resting buds. To avoid potential conifer injury, **DO NOT** apply **ROTARY 2 SL** when conifers are under stress that may reduce plant vigor due to drought, diseases, animal or winter injury, etc.

Avoid direct spray contact to desired plant species as injury may occur. Injury may occur to non-target or desirable hardwoods or conifers if they extend from the same root system or their root systems are grafted to those of treated trees or if their roots extend into the treated zone.

**BAG AND BROADCAST APPLICATIONS FOR CONIFER RELEASE**

In Douglas-fir and Ponderosa pine stands, broadcast **ROTARY 2 SL** at up to 32 fl oz/A when the trees have been covered with bags before application to prevent overspray onto conifer foliage. For improved control of brush species, particularly evergreens, add a suitable seed oil at 5-12% (by volume) to the spray solution. **DO NOT** use this treatment on sites with coarse-textured soils (e.g. decomposed granite, pumice, sandy or rocky sites) or low levels of soil organic matter (generally 5% or less) unless substantial conifer growth inhibition and/or mortality is acceptable.

**LATE ROTATION VEGETATION CONTROL IN WESTERN CONIFERS**

In California, the Pacific Northwest and inland Northwest, **ROTARY 2 SL** may be applied aerially at up to 48 fl oz/A in at least 15 GPA to conifer stands intended for harvesting the year following treatment. For improved control of brush species, particularly evergreens, add a suitable seed oil at 5-12% (by volume) to the spray solution. **DO NOT** use this treatment if conifer injury or mortality is unacceptable, since substantial conifer injury or mortality can occur.

**UNDERSTORY BROADCAST APPLICATIONS FOR MID-ROTATION RELEASE**

**ROTARY 2 SL** may be broadcast by ground or hand held equipment to control understory brush and suppress undesirable trees below the conifer canopy within stands of the species listed below. Apply **ROTARY 2 SL** in water or oil emulsion carrier so as to minimize spray contact to the crowns of crop trees. **DO NOT** exceed the maximum rates listed for the conifer species below.

<b>Crop Species</b>	<b>Maximum Rate (fl. oz/Acre)</b>
Loblolly Pine ( <i>Pinus taeda</i> )	64
Loblolly X Pitch Hybrid	64
Virginia Pine ( <i>Pinus virginiana</i> )	64
Longleaf Pine ( <i>Pinus palustris</i> )	32
Pitch Pine ( <i>Pinus rigida</i> )	32
Shortleaf Pine ( <i>Pinus echinata</i> )	32
Slash Pine ( <i>Pinus elliottii</i> )	32

**CUT STUMP TREATMENTS**

**Mixing:** Mix 8-16 fl oz of **ROTARY 2 SL** in one gallon of water, diesel oil, or penetrating oil. **ROTARY 2 SL** may be tank-mixed with Garlon® 3A, Garlon 4, Tordon® K, Escort® or Roundup® to control labeled species. If temperatures are such that of the spray mixture may occur, antifreeze may be added according to manufacturer's label to prevent freezing. The use of a surfactant or penetrating agent may improve uptake through partially callused cambium tissue.

**Application:** Spray or brush the **ROTARY 2 SL** solution onto the cambium area of the freshly cut target stumps. Thoroughly wet the entire cambium area (the wood next to the bark of the stump). Applications can be made anytime during the year except during periods of heavy sap flow in the spring. **DO NOT** over apply so as to cause run-off or puddling of spray solution.

**TREE INJECTION TREATMENTS**

No Worker Protection Standard worker entry restrictions or worker notification requirements apply when this product is directly injected into agricultural plants.

**Mixing:** Mix 8-12 fl oz of **ROTARY 2 SL** in one gallon of water. If temperatures are such that of the spray mixture may occur, antifreeze may be added according to manufacturer's label to prevent freezing.

**Application:** Use standard injection equipment to apply 1 mL of **ROTARY 2 SL** solution at each injection site around the tree with no more than one inch intervals between cut edges. Insure that the injector completely penetrates the bark at each injection site.

**FRILL OR GIRDLE TREATMENTS**

**Mixing:** Mix 8.0-12.0 fluid ounces of **ROTARY 2 SL** in one gallon of water, diesel oil, or a penetrating oil. If temperatures are such that of the spray mixture may occur, antifreeze may be added according to manufacturer's label to prevent freezing.

**Application:** Use a hatchet, machete, or similar implement to make cuts through the bark around the tree at intervals no more than two inches between cut edges. Spray or brush **ROTARY 2 SL** solution into each cut until thoroughly wet.

**CUT STUBBLE**

**Mixing:** Mix 1 to 2 pints of **ROTARY 2 SL** in 2.5 gallons of basal or other penetrating oil and dilute with water to a total volume of 50 gallons. This amount of spray solution will treat 1 acre.



**Application:** Apply **ROTARY 2 SL** to soil and brush stumps any time up to 14 days after mechanical mowing or cutting of brush has been completed. For optimum suppression or control from resprouting, allow some regrowth of brush to occur before application. A tank mix product may be added, provided that the product does not prohibit such mixing. When tank mixing, always follow all restrictions and precautions on the tank mix product labels, and follow the most restrictive label instructions for all products used. A tank mix of **ROTARY 2 SL** with other brush control or suppression herbicides (such as Garlon 4 or Tordon K) should be mixed with penetrating oils (5% v/v) to improve absorption into bark and exposed roots. **NOTE:** Temporary injury to vegetative ground cover and severe injury or death of desirable trees may occur from root update of this product after a direct soil application.

**USE WITH ASPHALT AND PAVED SURFACES**

**Mixing:** Use 3 quarts **ROTARY 2 SL** per acre with MC 30, MC 70, RC 70, and SC 70 asphalts. If other asphalt types are used, an emulsifier may be required to ensure adequate mixing of the asphalt with **ROTARY 2 SL**. Ensure that the required amount of **ROTARY 2 SL** is thoroughly mixed in with the asphalt immediately prior to application. Do not allow the mixture to exceed 150°C and do not allow the mixture to stand.

**Application:** Apply immediately after mixing to areas near shoulders of roads, along and under guardrails, and in cracks and crevices of paved roadways.

**THINLINE BASAL AND STEM APPLICATIONS**

**Mixing:** Mix 24-48 fl oz of **ROTARY 2 SL** in one gallon of diesel oil or penetrating oil. Maintain uniform mixtures with frequent agitation.

**Application:** Apply **ROTARY 2 SL** as a thinline basal or arcing application to the stems of susceptible species such as big leaf maple (*Acer macrophyllum*), willow (*Salix* spp.) and Eucalyptus (*Eucalyptus* spp.) with a stem ground line diameter of 3 inches or less. Direct a thin line of **ROTARY 2 SL** oil mixture to the stems beginning a few feet from the ground and descending toward the base of the tree making a zig-zag motion. **DO NOT** over-apply so as to cause run-off or puddling of spray solution.

**LOW VOLUME BASAL BARK TREATMENTS**

**Mixing:** Mix 8-12 fl oz of **ROTARY 2 SL** in one gallon of diesel oil or penetrating oil. Maintain uniform mixtures with frequent agitation.

**Application:** For mixed brush species with up to 4 inch stem diameter at breast height, apply **ROTARY 2 SL** oil mixture to wet the lower 12-18 inches of stems, including the root collar area. **DO NOT** over-apply so as to cause run-off or puddling of spray solution.

**LOW VOLUME FOLIAR APPLICATIONS**

**Mixing:** Mix 3-5% **ROTARY 2 SL** in water and adjuvant or in penetrating oil.

**Application:** For small brush, apply **ROTARY 2 SL** down onto the crown to cover approximately 70% of the plant foliage. For larger brush apply **ROTARY 2 SL** to thoroughly cover the crown and at least two sides of the plant. Use the higher rate of **ROTARY 2 SL** (5%) in areas containing sassafras, oak, hickory, cherry, and maples or in the southern 2/3's of the U.S. A tank-mix of 3% **ROTARY 2 SL** + Garlon 4 is effective in the Northeastern U.S. To control black locust, honey locust, hackberry, elms and other species listed on both the **ROTARY 2 SL** and Garlon 4 labels. apply a tank-mix of 3-5% **ROTARY 2 SL** plus 15-20% Garlon 4 in basal oil.

**SPRAY SOLUTION MIXING GUIDE FOR LOW VOLUME FOLIAR APPLICATIONS**

AMOUNT OF SPRAY SOLUTION BEING PREPARED	DESIRED CONCENTRATION (fluid volume)			
	ROTARY 2 SL		Garlon 4	
	3%	5%	15%	20%
<b>1 gallon</b>	3.8 oz	6.4 oz	19.2 oz	25.6 oz

<b>3 gallons</b>	11.5 oz	19.2 oz	57.6 oz	76.8 oz
<b>4 gallons</b>	15.4 oz	25.6 oz	76.8 oz	102.4 oz
<b>5 gallons</b>	19.2 oz	32.0 oz	96.0 oz	1.0 gallon
<b>50 gallons</b>	1.5 gallons	2.5 gallons	7.5 gallons	10.0 gallons
<b>100 gallons</b>	3.0 gallons	5.0 gallons	15.0 gallons	20.0 gallons

**INVERT EMULSIONS**

**ROTARY 2 SL** can be applied as an invert emulsion, a viscous water-in-oil emulsion intended to minimize spray drift and run-off and to enhance herbicide deposition onto the target foliage. The spray emulsion may be formed in a single tank (batch mixing) or injected (in-line mixing). Consult the invert chemical label for proper mixing directions. **DO NOT** apply more than 3 quarts **ROTARY 2 SL/A**.

**GRASS PASTURE AND RANGELAND SPOT TREATMENT OF WEEDS**

Make spot applications of **ROTARY 2 SL** to undesirable vegetation in grass pasture and rangeland at rates up to 48 fl. oz. product per treated acre. Use any of the ground application methods for vegetation control specified on this label. Do not apply more than one-tenth of the area to be grazed or cut for hay. **DO NOT** apply more than 48 fluid oz. per acre per year.

**Grazing and haying restrictions:** No grazing restrictions need to be followed after a **ROTARY 2 SL** application. **DO NOT** cut forage grass for hay until seven days after the **ROTARY 2 SL** application.

**GUIDELINES FOR RANGELAND USE**

**ROTARY 2 SL** will control undesirable vegetation on rangeland to meet the following vegetative management objectives:

1. Control of undesirable plant species such as those that are non-native, invasive and noxious.
2. Control of undesirable vegetation during establishment of desirable rangeland plant species.
3. Control of undesirable vegetation during re-establishment of desirable rangeland vegetation after a fire.
4. Control of undesirable vegetation for purposes of wildfire fuel reduction.
5. Release of existing desirable rangeland plant communities from the competition from undesirable plant species.
6. Control of undesirable vegetation to improve wildlife habitat.

To ensure the protection of threatened and endangered plants when applying **ROTARY 2 SL** to rangeland:

1. Federal agencies must follow NEPA regulations to ensure protection of threatened and endangered plants.
2. State agencies must work with the Fish and Wildlife Service or the Service's designated state conservation agency to ensure protection of threatened and endangered plants.
3. Other organizations or individuals must operate under a Habitat Conservation Plan if threatened or endangered plants are known to be present on the land to be treated.

Refer to other sections of this label for specific use directions for the desired rangeland vegetation management objective.

Make applications of **ROTARY 2 SL** only to a given rangeland acre when specific weeds become problematic. Long term control of undesirable weed species ultimately depends on the successful use of land management practices that promote the growth and sustainability of desirable rangeland plant species.

**ROTATIONAL CROP RESTRICTIONS**

Do not plant rotational crops until twelve months after the **ROTARY 2 SL** application and only if a successful field bioassay has been conducted. To conduct a field bioassay, plant the intended rotational crop in a small section of a previously treated grass pasture/rangeland in which the grass was grown to maturity. When selecting the previously treated area in which to conduct the viability test, include low areas and knolls and sites with a range of soil types and pH. A successful field bioassay will result in no crop injury which means that the intended rotational crop may be planted the following year.

In most circumstances, **ROTARY 2 SL**, used according to the label directions, will result in normal growth of rotational crops. Rotational crop injury is possible since a variety of factors (environmental and agronomic) exist that make it impossible to eliminate all risks associated with the use of **ROTARY 2 SL**.

**STORAGE AND DISPOSAL**

**DO NOT** contaminate water, food, or feed by storage or disposal.

**PESTICIDE STORAGE: DO NOT** store below 10°F.

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

**CONTAINER HANDLING:**

**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.

**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 [common chemical name] 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 24-HOUR EMERGENCY ASSISTANCE (SPILL, LEAK, OR FIRE), CALL INFOTRAC AT 1-800-535-5053.**

**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.

**DISCLAIMER OF WARRANTIES:** To the extent consistent with applicable law, Makhteshim Agan of North America, Inc. makes no other warranties, express or implied, of merchantability or of fitness for a particular purpose or otherwise, that extend beyond the statements made on this label. No agent of Makhteshim Agan of North America, Inc. is authorized to make any warranties beyond those contained herein or to modify the warranties contained herein. To the extent consistent with applicable law, Makhteshim Agan of North America, Inc. disclaims any liability whatsoever for special, incidental or consequential damages resulting from the use or handling of this product.

**LIMITATIONS OF LIABILITY:** To the extent consistent with applicable law, the exclusive remedy of the user or buyer for any and all losses, injuries or damages resulting from the use or handling of this product, whether in contract, warranty, tort, negligence, strict liability or otherwise, shall not exceed the purchase price paid or at Makhteshim Agan of North America, Inc.'s election, the replacement of product.

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Rotary 2 SL (66222-170)(revised for RED 11-07-08)