

71368-35

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

WASHINGTON, D.C. 20460

MAR - 8 2004

OFFICE OF  
PREVENTION, PESTICIDES  
AND TOXIC SUBSTANCES

Mr. Theodore D. Head  
Nufarm, Inc  
1333 Burr Ridge Parkway, Suite 125A  
Burr Ridge, IL 60521

Dear Mr. Head:

Subject: Nufarm NUP 8D01 Broad Spectrum Herbicide (Add Orchards and Vineyards)  
EPA Registration No. 71368-35  
Application Dated December 10, 2003

The labeling referred to above submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended is acceptable, provided you make the following changes before you release the product for shipment.

1. Revise the last sentence of your Environmental Hazards section to read "Do not contaminate water when **cleaning of equipment** or disposing of equipment washwaters.
2. Under Storage and Disposal revise "Storage" to read "Pesticide Storage".
3. The phrases "other similar areas", "other similar sites", and "other public areas and similar industrial or noncrop areas" found in several areas of your "Industrial, Recreational and Public Areas" section of your label are no longer permitted to appear on labels. These phrases must be deleted from your label.
4. On page 16 revise "Riverdale Razor" to read "NUP 8D01".

Submit two(2) copies of your final printed labeling incorporating the above changes before you release the product for shipment. Amended labeling supercedes all previously accepted ones. A stamped copy of labeling is enclosed for your records.

Sincerely,

*James A. Tompkins*  
James A Tompkins  
Product Manger 25  
Herbicide Branch  
Registration Division (7505C)

2/23



# NUP

## Broad Spectrum Herbicide

### Low Volatile Herbicide

FOR CONTROL OF GRASSES AND BROADLEAF WEEDS IN ROUNDUP READY CORN, CEREAL GRAINS  
CORN, SORGHUM, NON-CROP AREAS, PREPLANT SOYBEANS, ORCHARDS, VINEYARDS AND FORESTRY.

**ACTIVE INGREDIENT:**

Glyphosate, N-(phosphonomethyl) glycine, in the form of its isopropylamine salt .....	23.03%*
2,4-dichlorophenoxyacetic acid .....	11.38%*

**INERT INGREDIENTS:**

.....	65.59%
<b>Total:</b> .....	<b>100.00%</b>

\*Contains 258 grams per liter or 2.13 pounds per U.S. gallon of the active ingredient, glyphosate, in the form of its isopropylamine salt. Equivalent to 190 grams per liter or 1.58 pounds per U.S. gallon of the acid, glyphosate.  
\*Contains 128 grams per liter or 1.07 pounds per U.S. gallon of the active ingredient 2,4-Dichlorophenoxyacetic acid.

EPA Reg. No. 71368-35

EPA Est. No. 228-IL-1

## KEEP OUT OF REACH OF CHILDREN DANGER - PELIGRO

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

See Inside for Additional Precautionary Statements.

For Chemical Spill, Leak, Fire, or Exposure, Call CHEMTREC (800) 424-9300.  
For Medical Emergencies Only, Call 877-325-1840.

Manufactured By:  
Nufarm, Inc.  
Burr Ridge, IL  
071368-00001.20030915.rbsh

ACCEPTED  
with COMMENTS  
in EPA Letter Dated:

MAR - 8 2004

Under the Federal Insecticide,  
Fungicide, and Rodenticide Act,  
as amended, for the pesticide  
registered under EPA Reg. No.  
71368-35 1

<b>FIRST AID</b>	
<b>IF SWALLOWED</b>	<ul style="list-style-type: none"> <li>• Call 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 the poison control center or doctor.</li> <li>• Do not give anything by mouth to an unconscious person.</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 the first 5 minutes, then continue rinsing eye.</li> <li>• Call a poison control center or doctor for 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 15-20 minutes.</li> <li>• Call a poison control center or doctor for further treatment advice.</li> </ul>
<b>HOT LINE NUMBER</b> Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-877-325-1840 for emergency medical treatment information.	
<b>NOTE TO PHYSICIANS</b> Probable mucosal damage may contraindicate the use of gastric lavage.	

**PRECAUTIONARY STATEMENTS  
HAZARDS TO HUMANS AND DOMESTIC ANIMALS  
DANGER**

Harmful if swallowed or absorbed through the skin. Avoid contact with skin eyes or clothing. Corrosive. Causes irreversible eye damage. Do not get in eyes or on clothing. Wear protective eyewear (goggles, face shield, or safety glasses). Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash clothing before reuse. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

**Personal Protective Equipment (PPE):**

Some of the 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 chart.

**Applicators and other handlers must wear:** Coveralls worn over short-sleeved shirt and short pants, Socks chemical-resistant footwear, chemical resistant gloves Category A such as butyl rubber, neoprene rubber, natural rubber, or nitrile rubber > 14 mils and protective eyewear.

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. After each day of use, clothing or PPE must not be reused until it has been cleaned.

**For containers of over 1 gallon, but less than 5 gallons:** Mixers and loaders who do not use a closed mechanical system (probe and pump) to transfer the contents of this container must wear coveralls or a chemical-resistant apron in addition to the other required PPE.

**Engineering Controls Statements:**

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d) (4-6)], the handler PPE (personal protective equipment) may be reduced or modified as specified in the WPS.

**IMPORTANT:** When reduced PPE is worn because a closed system is being used, handlers must be provided all PPE specified above for "applicators and other handlers" and have such PPE immediately available for use in an emergency, such as a spill or equipment break-down.

**For containers of 5 gallons or more:** a mechanical system (probe and pump) must be used for transferring the contents of the container. If the contents of a non-refillable pesticide containers are emptied, the probe must be rinsed before removal. If the mechanical system is used in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4)] the handler PPE requirements may be reduced or modified as specified in the WPS.

**USER SAFETY RECOMMENDATIONS**

Users should:

- Wash hands 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.
- 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.

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### ENVIRONMENTAL HAZARDS

This product is toxic to aquatic invertebrates. Drift or runoff may adversely affect aquatic invertebrates and nontarget plants. Do not apply directly to water, 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.

Most cases of ground water contamination involving phenoxy herbicides such as 2,4-D have been associated with mixing/loading and disposal sites. Caution should be exercised when handling 2,4-D pesticides at such sites to prevent contamination of ground water supplies. Use of closed systems for mixing or transferring this pesticide will reduce the probability of spills. Placement of the mixing/loading equipment on an impervious pad to contain spills will help prevent ground water contamination.

### PHYSICAL AND CHEMICAL HAZARDS

Do not use or store near heat or open flame.

### AGRICULTURAL CHEMICAL

Do not ship or store with foods, feeds, drugs, or clothing.

### 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 through any type of irrigation system.

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.

### 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 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 Category A such as buty rubber, neoprene rubber, natural rubber, or nitrile rubber > 14 mils, socks, chemical-resistant footwear and 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.

Do not allow people (other than applicator) or pets on treatment area during application.

Do not enter treatment areas until sprays have dried.

### STORAGE AND DISPOSAL

**STORAGE:** Do not contaminate water, food or feed by storage or disposal. Open dumping is prohibited. Do not store this product near fertilizers, seeds, insecticides, or fungicides. Do not store near heat or open flame. Re-close all partially used containers by thoroughly tightening screw cap. Absorb any spill with a suitable clay absorbent and dispose of as indicated under "Pesticide Disposal". For safety and prevention of unauthorized use, all pesticides should be stored in locked facilities. To prevent accidental misuse, different pesticides should be stored in separate areas with enough distance between to provide clear identification. Opened, partially used pesticides should be stored in original labeled containers when possible. When transfer to another container is necessary because of leakage or damage, carefully mark and identify contents of the new container.

**PESTICIDE DISPOSAL:** Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law and may contaminate ground water. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste Representative at the nearest EPA Regional Office for guidance.

**CONTAINER DISPOSAL: Metal Containers:** Triple rinse (or equivalent), adding rinsate to spray tank. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by State and local authorities. **Plastic Containers:** Triple rinse (or equivalent), adding rinsate to spray tank. 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.

**MIXING AND LOADING:** Most cases of ground water contamination involving phenoxy herbicides such as 2,4-D have been associated with mixing/loading and disposal sites. Caution should be exercised when handling 2,4-D pesticides at such sites to prevent contamination of ground water supplies. Use of closed systems for mixing or transferring this pesticide will reduce the probability of spills. Placement of the mixing/loading equipment on an impervious pad to contain spills will help prevent ground water contamination.

Do not apply NUP 8D01 Broad Spectrum Herbicide directly to, or permit spray mist to drift onto cotton, okra, grapes, tomatoes, fruit trees, vegetables, flowers or other desirable crop or ornamental plants which are susceptible to 2,4-D herbicide. Do not apply near susceptible plants since very small quantities of the 2,4-D will cause severe injury during the growing or dormant periods. Crops contacted by NUP 8D01 Broad Spectrum Herbicide sprays or spray drift may be killed or suffer significant stand loss with extensive quality and yield reduction.

### SPRAY DRIFT MANAGEMENT

Apply NUP 8D01 Broad Spectrum Herbicide in 3 to 20 gallons of water per acre. 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. The following drift management requirements must be followed to avoid off-target drift movement from aerial applications to agricultural field crops.

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. The applicator should be familiar with and take into account the information covered in the Aerial Drift Reduction Advisory Information.

**Droplet Size:** The most effective way to reduce drift potential is to apply large droplets. The best drift management strategy is to apply the largest 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).

**Controlling Droplet Size:** 1. *Volume:* Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets. 2. *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. 3. *Number of nozzles:* Use the minimum number of nozzles that provide uniform coverage. 4. *Nozzle Orientation:* Orienting nozzles so that the spray is released backwards, parallel to the air stream will produce larger droplets than other orientations and is the recommended practice. Significant deflection from the horizontal will reduce droplet size and increase drift potential. 5. *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.

**Boom Length:** For some use patterns, reducing the effective boom length to less than 3/4 of the wingspan or rotor length may further reduce drift without reducing swath width.

**Application Height:** Applications should not be made at a height greater than 10 feet above the top of the largest plants unless a greater height is required for aircraft safety. Making applications at the lowest height that is safe 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 aircraft upwind. Swath adjustment distance should increase with increasing drift potential (higher wind, smaller drops, etc.).

**Wind:** Drift potential is lowest between wind speeds of 2 to 10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given speed. Application should be avoided below 2 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 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 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 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, non-target crops) is minimal (e.g. when wind is blowing away from the sensitive areas).

Avoid direct application to any body of water.

Thoroughly wash aircraft, especially landing gear, after each day of spraying to remove residues of this product accumulated during spraying or from spills. Prolonged exposure of this product to uncoated steel surfaces may result in corrosion and possible failure of the part. The maintenance of an organic coating (paint), which meets aerospace specification MIL-C-38413, may prevent corrosion.

### NOTICE

Before buying or using this product, read "Warranty Limitations and Disclaimer" elsewhere on this label. If terms are not acceptable, return unopened package at once to Seller for full refund of purchase price paid. Otherwise, use by the Buyer or any other User constitutes acceptance of the terms under the "Warranty Limitations and Disclaimer".

### GENERAL INFORMATION

Do not apply NUP 8D01 Herbicide through any type of irrigation system.

Do not use in or near a greenhouse.

**Product Description:** This product is a postemergent, systemic herbicide. It is generally non-selective and gives broad spectrum control of many annual weeds, perennial weeds, woody brush and trees.

**Time to Symptom:** This product moves through the plant from the point of foliage contact to and into the root system. Visible effects on most annual weeds occur within 2-4 days, but on most perennial weeds may not occur for 7 days or more. Extremely cool or cloudy weather following treatment may slow activity of this product and delay development of visual symptoms. Visible effects are a gradual wilting and yellowing of the plant, which advances to complete browning of above-ground growth and deterioration of roots and rhizomes.

**Stage or Condition of Weeds:** Weeds must be emerged at the time of application to be controlled by this product. Weeds germinating from seed after application will not be controlled. Plants arising from unattached underground rhizomes or root stocks of perennials which emerge following treatment will not be affected by the herbicide and will continue to grow.

Weeds having insect damage or disease or growing under environmental stress such as drought may absorb less herbicide resulting in reduced weed control. Reduced results may also occur when treating weeds heavily covered with dust.

Reduced control may result when applications are made to annual or perennial weeds that have been mowed, grazed, or cut, and have not been allowed to regrow to the recommended stage for treatment.

Refer to the application rate tables for recommendations for specific weeds.

**Rainfastness:** Heavy rainfall soon after application may wash this product off of the foliage and a repeat application may be required for adequate control.

**Spray coverage:** For best results, spray coverage should be uniform and complete. However, spraying to the point of runoff is wasteful and should be avoided.

**Biological Degradation:** Degradation of this product is primarily a biological process carried out by soil microorganisms.

**Tank Mixing:** This product does not provide residual weed control. For subsequent residual weed control, follow a label approved herbicide program. Read and carefully observe the cautionary statements and all other information appearing on the labels of all herbicides used. Use according to the most restrictive label directions for each product in the mixture.

To test for compatibility, use a small container and mix a small amount (0.5 to 1 qt) of intended spray carrier (water or liquid fertilizer), combining all ingredients in the same ratio as the anticipated use. If any indications of physical incompatibility develop, do not use this mixture for spraying. Indications of incompatibility usually will appear within 5-15 minutes after mixing.

Buyer and user are responsible for all loss of damage in connection with the use or handling of mixtures of this product with herbicides or other materials that are not expressly recommended in this labeling. Mixing this product with herbicides or other materials not recommended on this label may result in reduced performance.

### MIXING

Reduced results may occur if water containing soil is used, such as visibly muddy water or water from ponds and ditches that is not clear.

#### Mixing with Water or Liquid Nitrogen Solutions

This product mixes readily with water. Mix spray solutions of this product as follows. Fill the mixing or spray tank with the required amount of water. Add the recommended amount of this product near the end of the filling process. Where non-ionic surfactant is used, add this to the spray tank before completing the filling process. Mix well. Use caution to avoid siphoning back into the carrier source. Use approved anti-back-siphoning devices where required by common sense, or state or local regulations. During mixing and application, foaming of the spray solution may occur. To prevent or minimize foam, avoid the use of mechanical agitators, terminate by-pass and return lines at the bottom of the tank and, if needed, use an approved anti-foam or defoaming agent. Use 10 to 60 gallons of nitrogen solution per acre.

NOTE: Before mixing this product or labeled herbicide tank mixtures of this product with liquid nitrogen solutions or water, the planned combination should be tested for compatibility.

#### Tank Mixing Procedure

Mix labeled tank mixtures of this product with water as follows:

1. Place a 20 to 35 mesh screen or wetting basket over filling port.
2. Through the screen, fill the spray tank one-half full with water and start agitation.
3. If a wettable powder is used, make a slurry with the water carrier, and add it SLOWLY through the screen into the tank. Continue agitation.
4. If a flowable formulation is used, premix one part with one part water. Add diluted mixture SLOWLY through the screen into the tank. Continue agitation.
5. If an emulsifiable concentrate formulation is used, premix one part emulsifiable concentrate with two parts water. Add diluted mixture slowly through the screen into the tank. Continue agitation.
6. Continue filling the spray tank with water and add the required amount of this product near the end of the filling process.
7. If nonionic surfactant or other spray adjuvants are desired, add this to the spray tank before completing the filling process.
8. Add individual formulations to the spray tank as follows: wettable powder, flowable, emulsifiable concentrate, drift control additive, water soluble liquid followed by surfactant or adjuvant.

Maintain good agitation at all times until the contents of the tank are sprayed. If the spray mixture is allowed to settle, thorough agitation is required to resuspend the mixture before spraying is resumed.  
 Keep by-pass line on or near the bottom of the tank to minimize foaming. Screen size in nozzle or line strainers should be no finer than 50 mesh.

**Mixing for Hand-Held Sprayers**

Prepare the desired volume of spray solution by mixing the indicated amount of this product in water as shown in the following table:

Spray Solution						
Amount of NUP 8D01						
Desired Volume	1/2%	1%	1-1/2%	2%	5%	10%
1 Gal.	2/3 oz.	1-1/3 oz.	2 oz.	2-2/3 oz.	6-1/2 oz.	12-3/4 oz.
25 Gal.	1 pt.	1 qt.	1-1/2 qt.	2 qt.	5 qt.	10 qt.
100 Gal.	2 qt.	1 gal.	1-1/2 gal.	2 gal.	5 gal.	10 gal.

2 tablespoons = 1 fluid ounce

For use in knapsack sprayers, pre-mix the recommended amount of this product by stirring into water in a large container. Fill sprayer with the mixed solution.

**Nonionic Surfactants**

This product is formulated to not require additional surfactant under normal conditions of use. Nonionic surfactants may increase control under difficult control circumstances including tall dense weed growth, drought stress, insect damage, cold temperatures prior to or at application and with high volume rates of application (greater than 20 gallons per acre). Nonionic surfactants which are labeled for use with herbicides may be used with this product and labeled tank mixtures. The use of surfactants as additives does not reduce the application rate of this product required to achieve weed control. When adding additional surfactant, use 0.25 to 0.5 percent concentration (1 to 2 quarts per 100 gallons of spray solution) of surfactant containing at least 70% active ingredient or a 1 percent concentration (4 quarts per 100 gallons of spray solution) for those containing less than 70 percent active ingredient. Read and carefully observe cautionary statements and other information appearing on the surfactant label. NOTE: Use of herbicides at lower than label recommended rates will result in reduced performance.

**Ammonium Sulfate**

The addition of 1 to 2 percent dry ammonium sulfate by weight or 8.5 to 17 pounds per 100 gallons of water may increase the performance of this product, particularly when tank mixed with certain residual herbicides. The equivalent rate of ammonium sulfate in a liquid formulation may also be used. Ensure that ammonium sulfate is completely dissolved in the spray tank before adding herbicides or surfactant. Thoroughly rinse the spray tank with clean water after use to minimize corrosion. NOTE: Recommended rate for herbicides should be maintained when adding ammonium sulfate.

**Colorants or Dyes**

Agriculturally-approved colorants or marking dyes may be added to spray solutions of this product. However, their use may reduce the herbicide's performance, especially at lower rates or higher dilutions.

**Drift Control Additives**

Drift control additives may be used with all equipment types. When a drift control additive is used, read and carefully observe the cautionary statements and all other information appearing on the additive label.

NOTE: As with nitrogen solutions and other adjuvants, always predetermine compatibility of labeled tank mixtures including colorants, dyes and drift control agents.

**APPLICATION EQUIPMENT AND TECHNIQUES**

This product may be applied with the following application equipment:

Aerial – Fixed Wing and Helicopter.

Ground Broadcast Spray – Boom or boomless systems, pull-type sprayer, floaters, pick-up sprayers, spray coupes and other ground broadcast equipment.

Hand-Held and High-Volume Spray Equipment – Knapsack and backpack sprayers, pump-up pressure sprayers, hand-guns, hand-wands, lances and other hand-held and motorized spray equipment used to direct the spray onto weed foliage.

Injection Systems – Aerial or ground injection sprayers.

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ATTENTION

AVOID CONTACT OF HERBICIDE WITH FOLIAGE, GREEN STEMS, EXPOSED NON-WOODY ROOTS OR FRUIT OF CROPS, DESIRABLE PLANTS AND TREES, BECAUSE SEVERE INJURY OR DESTRUCTION MAY RESULT. AVOID DRIFT. EXTREME CARE MUST BE USED WHEN APPLYING THIS PRODUCT TO PREVENT INJURY TO DESIRABLE PLANTS AND CROPS.

APPLY THESE SPRAY SOLUTIONS IN PROPERLY MAINTAINED AND CALIBRATED EQUIPMENT CAPABLE OF DELIVERING DESIRED VOLUMES. CLEAN SPRAYER PARTS IMMEDIATELY AFTER USING THIS PRODUCT BY THOROUGHLY FLUSHING WITH WATER AND AN APPROVED CLEANING AGENT.

Ground Broadcast Equipment

Use the recommended rates of this product in 5 to 40 gallons of water per acre as a broadcast spray unless otherwise specified. As density of weeds increases, spray volume may be increased up to 40 gallons within the recommended range to ensure complete coverage. Select proper nozzles to avoid spraying a fine mist. For best results with ground application equipment, use flat fan nozzles. Check for even distribution of spray droplets.

Hand-Held and High-Volume Equipment

For applications made on a spray-to-wet basis, spray coverage should be uniform and complete. However, spraying herbicide solution to the point of runoff if wasteful and should be avoided. Use coarse sprays only.

Injection Systems

This product may be used in aerial or ground injection spray systems. It may be used as a liquid concentrate or diluted prior to injecting into the spray stream. Because compatibility of concentrated products has not been tested. Mixture of this product with the concentrate of other products is not advised when using injection systems.

CROPS (alphabetical)

This section is organized alphabetically by crop category. There may be several labeled crops listed in a crop category. Unless otherwise specified, applications may be made to control any weeds listed in the annual and perennial tables.

Precautions, Restrictions for all Crop Uses:

- For any crop not listed in this "CROPS" section, applications must be made at least 30 days prior to planting.
- For Spot Treatments in labeled crops, do not treat more than 10 percent of the total field area to be harvested. The crop receiving spray in the treated area will be killed. Avoid drift or spray outside target area for the same reason.
- For Broadcast Postemergent Treatments, do not graze harvest or feed treated vegetation for 8 weeks following application unless otherwise specified.

Cereal Crops

Labeled Crops: Feed Barley, Millet (Pearl, Proso), Oats, Rye, Triticale, and Wheat (All)

Types of Applications: preplant, spot treatment, post-harvest, preharvest (wheat and feed barley only).

Preplant (wheat and feed barley) This product may be applied prior to planting wheat and feed barley to control established weeds. Apply 1 quart per acre by aerial or ground spray equipment.

Precautions, Restrictions - Do not plant wheat for 14 days following application. For optimum weed control, wait at least 2 days following application before doing any tillage.

Spot Treatment This product may be applied as a spot treatment in labeled cereal crops for control of perennial weeds and difficult to control annual weeds. Apply before heading in small grains. Apply a 1 to 2% solution, completely wetting weed surfaces, but not to the point of run-off.

Precautions, Restrictions - For spot treatment, apply in areas where the movement of domestic livestock can be controlled. No more than one-tenth of any acre should be treated at one time. Remove domestic livestock before application and wait 14 days after application before grazing livestock or harvesting.

Preharvest (wheat and feed barley) This product provides weed control when applied prior to harvest of wheat or barley. Apply after the hard-dough stage of grain (30 percent or less moisture). This product may be applied using either aerial or ground spray equipment.

Precautions, Restrictions - Do not apply more than 1-1/2 quarts of this product per acre. Since herbicide treatment may reduce germination or vigor, it is not advised to treat wheat or barley grown for seed. Allow at least 14 days between application and harvest of grain. Allow 7 days between application and grazing or harvest of forage or straw.

Postharvest This product may be applied after harvest of cereal crops. Higher rates may be required for control of large weeds that were growing in the crop at the time of application. Tank mixtures with dicamba may be used.

Precautions, Restrictions - Do not apply more than 1-1/2 quarts of this product per acre. Since herbicide treatment may reduce germination or vigor, it is not advised to treat wheat or barley grown for seed. Allow at least 14 days between application and harvest of grain. Allow 7 days between application and grazing or harvest of forage or straw.

Precautions, Restrictions For Use On Cereal Grains: For aerial application on grain, apply in 2 or more gallons of water per acre. Do not permit dairy animals or meat animals being finished for slaughter to forage treated grain fields within 2 weeks after treatment.



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## Conservation Reserve Program (CRP)

**Types of Applications:** Renovation (rotating out of CRP), postemergence, site preparation

**Renovation (rotating out of CRP). Site Preparation** This product may be used to prepare CRP land for crop production.

*Precautions, Restrictions – For any crop not listed in the "CROPS" section, applications must be made at least 30 days prior to planting or until after 2,4-D residues have disappeared from soil. Allow 7 days between application and harvest of forage or straw. Do not graze lactating dairy animals in treated areas within 7 days after application. If treated area is grazed within 30 days of application, withdraw meat animals at least 3 days before slaughter. Do not apply within 30 days of previous application.*

**Postemergence** This product may be used to suppress competitive growth and seed production of undesirable vegetation in CRP acres. Such applications may be made as a broadcast or spot treatment to dormant CRP grasses. For selective applications with broadcast spray equipment, apply 10 to 20 fluid ounces of this product per acre in early spring before desirable CRP grasses, such as crested and fall wheatgrass, break dormancy and initiate green growth. Late fall applications can be made after desirable perennial grasses have reached dormancy.

*Precautions, Restrictions – Some stunting of CRP perennial grasses will occur if broadcast applications are made when plants are not dormant. For any crop not listed in the "CROPS" section, applications must be made at least 30 days prior to planting or until after 2,4-D residues have disappeared from soil. Allow 7 days between application and harvest of forage or straw. Do not graze lactating dairy animals in treated areas within 7 days after application. If treated area is grazed within 30 days of application, withdraw meat animals at least 3 days before slaughter. Do not apply within 30 days of previous application.*

### Corn

**Types of Corn:** Field corn (Conventional and Roundup Ready Hybrids), sweet corn and popcorn

**Types of Applications:** Preplant, preemergence, post-emergence (Roundup Ready Hybrids only), preharvest and postharvest

**Preplant:** Field and Sweetcorn: 20 to 40 fl oz. For burndown of existing grass and broadleaf weeds, apply at least 7 days before planting. Do not use on light sandy soil. Use higher rates on dense stands of larger weeds or cover crops such as alfalfa.

**Preemergence:** Field corn: 20 to 40 fl oz. To control existing grass and broadleaf weeds, apply 3-5 days after planting but before corn emerges. For partial preemergent control of broadleaf weeds, apply higher rate on high organic matter soil. **Do not use in California.**

**Postemergence:** Field Corn (Roundup Ready Hybrids only) 20 to 40 fl oz. To control annual grass and broadleaf weeds, apply when weeds are small and corn is fully emerged but less than 8 inches tall. When corn is over 8 inches, drop nozzles are recommended. Treat perennial weeds when in the bud to bloom stage. **Do not spray corn in the tassel to dent stage.**

**Spot spray:** Field corn 1 to 2% solution. Apply to weeds during active growth. Spray to wet leaves but not to point of runoff.

**Preharvest:** Field and Popcorn 40 to 75 fl oz. This product may be used to control large annual and perennial weeds that may interfere with harvest. Apply at 35% grain moisture or less. Ensure maximum kernel fill is complete and the corn is physiologically mature (black layer formed). Use a maximum of 32-40 fl oz if applied by air.

**Postharvest:** 40 to 75 fl oz. Following corn harvest, this product may be used to control perennial weeds. Allow regrowth of weeds to ensure sufficient leaf area for uptake. Higher rates may be required for larger weeds.

*Precautions, Restrictions – Do not use on light sandy soils. Ensure planting depth is sufficient to place seed in untreated soil. Do not harvest grain for 7 days following application. Apply no more than 3 pounds acid equivalent per acre per use season. Do not use treated crop as fodder for 7 days following application.*

**Tank mixes for corn when applied at preplant and preemergence timings:** Preemergent herbicides may be tank mixed with this product for control of weeds not emerged at time of application. Tank mixes with micro-encapsulated herbicides such as Micro-Tech are not recommended. Always determine compatibility of tank mixtures by mixing small proportional quantities of each product before preparing spray tank mixtures. Read and follow all directions and limitations on this and tank-mix partner labels.

### Fallow Systems

**Types of Applications:** Chemical fallow and aid-to-tillage

**Chemical fallow** This product may be applied during the fallow period prior to planting or emergence of any crop listed on this label. Apply 20 to 40 ounces of this product in 5 to 10 gallons total spray volume per acre. This product may be used as a substitute for tillage to control annual weeds in fallow fields. Also, broadcast or spot treatments will control or suppress many perennial weeds in fallow fields. Ground or aerial application equipment may be used. Tank mixtures with dicamba, picloram, atrazine or cyanazine may be used provided that the specific tank-mix companion product is registered for use on fallow land.

**Aid-to-tillage** This product may be used in conjunction with tillage practices in fallow systems or preplant to labeled crops to control downy brome, cheat, volunteer wheat, tansy mustard and foxtail. Apply 10 to 15 ounces of this product in 5 to 10 gallons total spray volume per acre. Make applications before weeds are 6 inches in height. Application must be followed by conventional tillage practices no later than 15 days after treatment and before regrowth occurs. Allow at least 1 day after application before tillage.

*Precautions, Restrictions – Do not cut forage for hay within 7 days of application. Do not apply within 30 days of a previous application. For any crop not listed in this "CROPS" section, applications must be made at least 30 days prior to planting or until 2,4-D residues disappear from soil.*

### Farmsteads

**Types of Applications:** General nonselective weed control, trim-and-edge, chemical mowing

**General nonselective weed control, trim and edge** This product may be used to control annual weeds and perennial weeds which are found in any part of the farmstead, including building foundations, along and in fences, shelterbelts, and equipment storage areas.

**Chemical mowing** This product will partially control broadleaf weeds and suppress perennial grasses listed in this section to serve as a substitute for mowing. Use 8 - 10 fl oz of this product per acre when treating Kentucky bluegrass. Use 12 - 14 fl oz of this product per acre when treating tall fescue, fine fescue, orchardgrass or quackgrass covers. Chemical mowing applications may be made along farm ditches and other parts of farmsteads.

*Precautions, Restrictions – Use only in areas where some stand thinning, temporary injury or discoloration of perennial grasses can be tolerated.*

#### Grain Sorghum (Milo)

**Types of Applications:** Preplant, preemergence, at-planting, spot treatment, postharvest

**Preplant, Preemergence, At-planting** This product may be applied before, during or after planting milo. Apply up to 14 to 16 ounces of this product per acre.

Preemergent herbicide products such as atrazine, metolachlor, dimethenamid, and alachlor in tank mixtures may be applied before, during or after planting in conventional tillage systems, into a cover crop, established sod or in previous crop residue. Read and follow all directions and limitations on this and tank-mix partner labels.

*Precautions, Restrictions – Under certain circumstances, an application of 2,4-D may result in reduced early growth vigor. Applications should be made 5-7 days prior to anticipated emergence of the crop to allow adequate dissipation of 2,4-D. Ensure planting equipment is completely closing seed row. Do not permit meat or dairy animals to consume treated crops as fodder for 30 days following application.*

**Spot treatment** This product may be applied as a spot treatment in grain sorghum. Apply before heading of milo. Apply a 1-2% solution to fully wet leaves, but before the point of run-off.

*Precautions, Restrictions – Allow at least 30 days between application and harvest. Do not ensile treated vegetation. Do not permit meat of dairy animals to consume treated crop as fodder or forage within 30 days following application.*

**Postharvest** This product may be applied after harvest of grain sorghum for control of weeds growing at time of harvest and to suppress grain sorghum stubble regrowth. Higher rates up to 32 - 40 fl oz may be required for control of large weeds. Tank mixture with dicamba may be used.

#### Grass Seed Production

**Types of Applications:** Site preparation, renovation, spot treatments, creating rows in annual ryegrass.

**Site preparation, Renovation** This product may be used before planting or renovation of turf or forage grass areas grown for seed production. Apply 40 to 60 fl oz per acre depending on density of grass stand. Reseeding should be delayed for 6 weeks or until 2,4-D residues have dissipated from soil.

For maximum control of existing vegetation, delay planting to determine if any regrowth from escaped underground plant parts occurs. Where repeat treatments are necessary, sufficient regrowth must be attained prior to application. For warm-season grasses, such as bermudagrass, summer or fall applications provide best control.

*Precautions, Restrictions: Tillage or renovation techniques such as vertical mowing, coring or slicing that disturb soil or underground plant parts should be avoided before treatment and should be delayed for 7 days after application to allow proper translocation into underground plant parts.*

**Grazing Restrictions:** Do not graze lactating dairy animals on treated areas within 7 days after application. Do not harvest grass cut for hay from treated areas for 7 days. Withdraw meat animals from treated forage at least 3 days before slaughter.

**Spot Treatments** use a 1 to 2.0 percent solution. Apply to fully wet leaves, but before the point of runoff.

**Creating Rows in Annual Ryegrass** Apply 28 to 48 fl oz of this product per acre mixed with water. Use the higher rate when the ryegrass is greater than 6 inches tall. Best results are obtained when applications are made before the ryegrass reaches 6 inches in height.

*Precautions, Restrictions: Set nozzle heights to allow the establishment of desired row spacing while preventing spray droplets, fines or drift to contact the ryegrass plants not treated. Use of low-pressure nozzles, or drop nozzles designed to target the application over a narrow band are recommended.*

#### Pastures

**Types of Pastures:** Bahiagrass, bermudagrass, bluegrass, bromé, fescue, orchardgrass, ryegrass, timothy, and wheatgrass.

**Types of Applications:** Preplant, pasture renovation, spot treatment

**Preplant and pasture renovation** This product may be used to control perennial pasture species listed on this label prior to re-planting. Under normal rainfall conditions or with irrigation, seeding should be delayed up to 6 weeks or until 2,4-D residues have dissipated from soil. Under extreme dry conditions, test soil to ensure satisfactory germination.

*Precautions, Restrictions – Remove domestic livestock before application and wait 8 weeks before grazing or harvesting.*

**Spot treatment** Use a 1 to 2 percent solution applied to wet foliage, but not to point of runoff. Applications may be made in the same area at 30 day intervals.

*Precautions, Restrictions – For spot treatment, apply in areas where the movement of domestic livestock can be controlled. No more than one-tenth of any acre should be treated at one time. Remove domestic livestock before application and wait 14 days after application before grazing livestock or harvesting.*

#### Rangelands

**Types of Applications:** Postemergence

This product will control or suppress many annual weeds growing in perennial cool and warm season grass rangelands. Preventing viable seed production is key to the successful control and invasion of annual grassy weeds in rangelands. Follow-up applications in sequential years should eliminate most of the viable seeds.

Grazing of treated areas should be delayed to encourage growth of desirable perennial grasses. Allowing desirable perennials to flower and reseed in the treated area will encourage successful transition.

Apply 20 to 28 fl oz of this product to control or suppress many annual and perennial weeds in rangelands. Apply when most mature annual grasses are in early flower and before seedhead formation. Allowing for secondary weed flushes to occur in the spring following rain events further depletes the seed reserve, and encourages perennial grass conversion on weeds sites. Fall applications are possible and recommended where spring moisture is usually limited and fall germination allows for good weed growth.

Apply 28 fl oz of this product when medusahead has reached the 3-leaf stage. Delaying applications beyond this stage will result in reduced or unacceptable control. Fire may be useful in eliminating the thatch layer produced by slow decaying clumps prior to application. Allow new growth to occur before spraying after a burn. Repeat applications in subsequent years may be necessary to eliminate the seed bank before reestablishing desirable perennial grasses in medusahead dominated rangelands.

*Precautions, Restrictions* – Slight discoloration of the desirable grasses may occur, but they will regreen and regrow under moist soil conditions as effects of this product wear off. Use of ammonium sulfate when spraying rangeland grasses with this product is not recommended. Do not make more than one application per year. Do not graze lactating dairy animals on treated areas within 7 days after application. Do not harvest grass cut for hay from treated areas for 30 days. Withdraw meat animals from treated forage at least 3 days before slaughter.

**Soybeans**

**Types of Applications:** Preplant

This product may be applied at 20 to 48 fl oz per acre before planting soybeans. Use the higher rate on large overwintering weeds and perennials. Wait 7 days following application before planting soybean. Under cold soil conditions, it is recommended to delay planting so that further time is available for 2,4-D to dissipate from the soil.

**Tank mixes for preplant application to soybean:** Preemergent herbicides may be tank mixed with this product for control of weeds not emerged at time of application. Tank mixes with micro-encapsulated herbicides such as Micro-Tech are not recommended. Always determine compatibility of tank mixtures by mixing small proportional quantities of each product before preparing spray tank mixtures. Read and follow all directions and limitations on this and tank-mix partner labels.

*Precautions, Restrictions* – In treated fields, plant soybean seed as deep as practical, but not less than 1 inch deep. Adjust the planter if necessary to ensure that the planted seed is adequately covered. Do not make more than one application per season regardless of the application rate used. Do not use on sandy soils with less than 1% organic matter. Do not allow livestock grazing or harvest hay, forage, or fodder from treated fields.

**Annual Weeds Rate Table**

(Alphabetical by Species)

Always use the higher rate of this product per acre within the recommended range when weed growth is heavy or dense or weeds are growing in an undisturbed (noncultivated) area.

**NUP 8D01 plus other labeled herbicides:** For difficult to control weeds such as fall panicum, barnyardgrass, crabgrass, shattercane and broadleaf signalgrass up to 2 inches tall, and Pennsylvania smartweed up to 6 inches tall, apply this product at 1 to 1.25 quart per acre in labeled tank mixes. Tank mixes with soil residual herbicides when using rates of 1 to 1.25 quart per acre or less may result in reduced performance. Follow specific rate recommendations when tank mixing this product.

**Annual Weeds Rate Table**

Weed Species	Application Rate (Fluid Ounces per Acre)					Maximum Height/Length (in)	Weed Species	Application Rate (Fluid Ounces per Acre)					Maximum Height/Length (in)
	16	20	28	40	60			16	20	28	40	60	
Barley	12	-	-	-	-	-	Johnsongrass, seedling	-	12	-	-	-	
Barnyardgrass	-	-	6	12	-	-	Kochia	-	-	3-6	12	-	
Bluegrass, annual	6	-	-	-	-	-	Lambsquarters	-	6	-	-	-	
Bluegrass, bulbous	-	6	-	-	-	-	Lettuce, prickly	-	-	6	12	-	
Brome, downy	-	6	12	-	-	-	London rocket	-	6	-	-	-	
Buckwheat, wild	-	-	1	2	-	-	Millet, wild proso	-	6	12	-	-	
Buttercup	-	6	12	-	-	-	Momingglory	-	4	-	-	-	
Cheat	-	6	-	-	-	-	(Ipomoea spp.)	-	-	-	-	-	
Chickweed	-	6	-	-	-	-	Mustard, blue	6	-	-	-	-	
Cocklebur	-	12	-	-	-	-	Mustard, tansy	6	-	-	-	-	
Corn	-	6	-	-	-	-	Mustard, tumble	6	-	-	-	-	
Crabgrass	-	6	12	-	-	-	Mustard, wild	6	-	-	-	-	
Dwarf dandelion	-	12	-	-	-	-	Pigweed	-	12	-	-	-	
Fall panicum	-	12	-	-	-	-	Rye, volunteer/cereal	-	6	18	-	-	
Falseflax, smallseed	-	12	-	-	-	-	Ryegrass, Italian	-	-	-	6	12	
Field pennycress	-	6	-	-	-	-	Sandbur, field	-	6	12	-	-	
Filaree	-	-	-	-	12	-	Shattercane	12	-	-	-	-	
Fleabane, hairy (Conyza bonariensis)	-	6	-	-	-	-	Shepherd's-purse	-	6	-	-	-	
Florida pusley	-	-	-	12	-	-	Sowthistle, annual	-	6	-	-	-	
Foxtail, green	6	12	-	-	-	-	Spurge, annual	-	6	-	-	-	
Foxtail, giant, bristly, yellow	-	6	12	-	-	-	Stinkgrass	-	-	12	-	-	
Goatgrass, jointed	-	6	-	-	-	-	Texas panicum	-	12	-	-	-	
Groundsel, common	-	6	-	-	-	-	Thistle, Russian	-	-	6	12	-	
Henbit	-	6	-	-	-	-	Wheat	-	6	18	-	-	
Horseweed/Marestail (Conyza canadensis)	-	6	-	-	-	-	Wild oats	-	12	-	-	-	
							Witchgrass	-	-	12	-	-	

1. For control of Downy brome in no-till systems, use 40 fluid ounces per acre.
2. Use 30 ounces per acre of this product to control wild buck-wheat in the cotyledon to 2 leaf stage. Use 40 ounces per acre to control 2 to 4 leaf wild buck-wheat. For improved control of wild buckwheat over 2 inches in size, use sequential Treatments of 40 ounces followed by 40 ounces of this product or refer to tank mix section of this label.
3. Treatment of kochia in the puffball stage will result in reduced control.

**Annual Weeds-Tank Mixtures with Banvel™ or Tordon 22K**

20 to 28 fluid ounces of this product plus 0.25 pound a.i. of Banvel or 1 to 2 ounces of Tordon 22K per acre will control the following weeds with the maximum height or length indicated: 6" - prickly lettuce, marestail/horseweed (*Coryza canadensis*), morning-glory (*Ipomoea* spp.), kochia (Banvel only); wild buckwheat (Tordon 22K only); 12" - cocklebur, lambsquarters, pigweed, Russian thistle.

20 fluid ounces of this product plus 0.25 pound a.i. of Banvel per acre will control foxtail up to 18".

Refer to the specific product labels for crop rotation restrictions and cautionary statements of all products used in tank mixtures. Some crop injury may occur if Banvel or Tordon 22K is applied within 45 days of planting.

**Annual Weeds-Tank Mixtures with Atrazine or Bladex™ for Fallow and Reduced Tillage Systems**

For use only in Colorado, Kansas, Nebraska, Oklahoma, Oregon, South Dakota, and Washington. In Oregon and Washington, do not exceed 1 pound atrazine per acre.

20 ounces of this product plus 1 to 2 pounds of atrazine or 2.4 to 4 pounds of cyanazine per acre will control the following weeds: Barnyardgrass (requires 26 ounces for control), Downy brome, Green foxtail, Lambsquarters, Prickly lettuce (*Lactuca serriola*), Tansy mustard, Pigweed, Field sandbur (*Cenchrus* spp.), Stinkgrass, Russian thistle (*Salsola kali*), Volunteer Wheat, Witchgrass, (*Panicum capillare*) and Kochia (add 4 fluid ounces Banvel for control).

**Hand-Held and High Volume Equipment**

For control of weeds listed in the annual weeds rate tables, apply a 0.75 % solution of this product to weeds less than 6 inches in height or runner length. Apply prior to seed-head formation in grass or bud formation in broadleaf weeds. For annual weeds over 6 inches tall, or unless otherwise specified, use a 1.5 % solution. When using application methods which result in less than complete coverage, use a 5 percent solution.

**Perennial Weeds Rate Table (Alphabetically by Species)**

Always use the higher rate of this product per acre within the recommended range when weed growth is heavy or dense or weeds are growing in an undisturbed (noncultivated) area.

Tank-mixing with residual herbicides when using the 1-1.25 quart per acre rate will result in reduced control. Repeat treatments may be necessary to control weeds regenerating from underground parts or seed. Repeat treatments must be made prior to crop emergence.

Unless otherwise stated, allow 7 or more days after application before tillage. Best results are obtained when soil moisture is adequate for active weed growth.

Weed Species	Rate (QT/A)	Water Volume (GPA)	Hand-Held % Solution
<u>Alfalfa</u>	1.25-2.5	3-10	2%

Make applications after the last hay cutting in the fall. Allow alfalfa to regrow to a height of 6 to 8 inches or more prior to treatment. Applications should be followed with deep tillage at least 7 days after treatment, but before soil freeze-up.

<u>Bindweed, Field</u>	1.25-6	3-20	2%
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Do not treat when weeds are under drought stress as good soil moisture is necessary for active growth.

For suppression, apply 16-20 ounces of this product plus 0.5 pound a.i. of 2,4-D or 0.25 pound of a.i. of Banvel in 3 to 10 gallons of water per acre for aerial applications. Apply by air fallow and reduced tillage systems only. Applications should be delayed until maximum emergence has occurred and when vines are between 6 to 18 inches in length.

<u>Bluweed, Texas</u>	5-6	3-40	2%
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Apply 4 to 5 quarts of this product per acre. Apply when plants are at or beyond full bloom. New leaf development indicated active growth. For best results, apply in late summer or fall. Fall treatments must be applied before a killing frost.

<u>Bromegrass, Smooth</u>	1.25-2.5	3-40	2%
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Apply 2.5 quarts of this product in 10-40 gallons of water per acre when most plants have reached boot-to-early seedhead stage of development. For partial control in pasture or hay crop renovation, apply 1.25 to 2 quarts of this product in 3 to 10 gallons of water per acre. Apply to actively growing plants when most have reached 4 to 12 inches in height.

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Weed Species	Rate (QT/A)	Water Volume (GPA)	Hand-Held % Solution
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<u>Johnsongrass</u>	1.5-4	3-40	1%
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In annual cropping systems apply 1.25 to 2.5 quarts of the product per acre. Apply 1 quart of this product in 3 to 10 gallons of water per acre. Use 2 quarts of this product when applying 10 to 40 gallons of water per acre. On farmstead sites or areas where annual tillage (no -till) is not practiced, apply 3-2.5 to 4 quarts of this product in 10 to 40 gallons of water per acre.

For best results, apply when most plants have reached the boot-to-head stage of growth or in the fall prior to frost. Allow 7 or more days after application before tillage.

For burndown of Johnsongrass, apply 32 oz of this product in 3 to 10 gallons of water per acre before the plants reach a height of 12 inches. For this use, allow at least 3 days after treatment before tillage.

Spot treatment (partial control of suppression) -Apply a 1 to 2 % solution of this product when Johnson grass is 12 to 18 inches in height. Coverage should be uniform and complete.

<u>Nightshade, silverleaf</u>	2.5	3-10	2%
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Applications should be made when at least 60 percent of the plants have berries. Fall treatments must be applied before a killing frost.

<u>Quackgrass</u>	2-5	3-40	2%
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In annual cropping systems or in pastures and sods followed by deep tillage: Apply 2 quarts of this product in 3 to 10 gallons of water per acre. For 10 to 40 gallons of water per acre, apply 4 quarts of this product. Spray when quackgrass is 6 to 8 inches in height. Do not till between harvest and fall applications or in fall or spring prior to spring application. Allow 3 or more days after application before tillage. In pastures or sods, use a moldboard plow for best results.

In pastures, sods or farmstead sites where deep tillage does not follow application: Apply 3 to 5 quarts of this product in 10 to 40 gallons of water per acre when the quackgrass is greater than 8 inches tall.

<u>Ryegrass, perennial</u>	2-5	3-40	1%
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In annual cropping systems apply 1.75 to 3 quarts of this product per acre. Apply 2 quarts of the product in 3 to 10 gallons of water per acre. Use 3.5 quarts of this product when applying 10 to 40 gallons of water per acre. On farmstead sites or areas where annual tillage (no-tills) is not practiced, apply 4 to 5 quarts of this product in 10 to 40 gallons of water per acre.

For best results, apply when most plants have reached the boot-to-head stage of growth or in the fall prior to frost.

<u>Sourge, Leafy</u>	2-4	3-10	2%
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For suppression, apply 32 fluid ounces of this product plus 0.25 pound a.i. Banvel in 3 to 10 gallons of water per acre in the late summer or fall. If mowing has occurred prior to treatment, apply when most of the plants are 12 inches tall.

<u>Thistle, Canada</u>	2-4	3-40	2%
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Apply when most plants are at or beyond the bud stage of growth. After harvest, mowing or tillage in the late summer or fall, allow at least 4 weeks for initiation of active growth and rosette development prior to the application of this product. Fall treatments must be applied before a killing frost. Allow 3 or more days after application before tillage.

For suppression, apply 2 quarts of this product in 3 to 10 gallons of water per acre in the late summer or fall after harvest, mowing or tillage. Allow rosette regrowth to a minimum of 6 inches in diameter before treating. Applications can be made as long as leaves are still green and plants are actively growing at the time of application. Allow 3 or more days after application before tillage.

NOTE: Mixtures of 2,4-D amines with glyphosate products may result in reduced control of this weed. Users should consider local conditions and previous local recommendations when apply this product.

<u>Wheatgrass, Western</u>	3.5-5.5	3-40	2%
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For best results, apply when most plants have reached the boot-to head stage of growth.

**Hand-Held and High-Volume Equipment**

For best results, use a 2.5 % solution on harder-to-control perennials, such as bermudagrass, dock, field bindweed, hemp dogbane, milkweed and Canada Thistle. When using application methods resulting in less than complete coverage, use a 5 % solution for perennial weeds and a 5 to 10 % solution for woody brush and trees.

**NONCROP USES**

See "GENERAL INFORMATION" and "MIXING, ADDITIVES and APPLICATION INSTRUCTIONS" sections of this label for essential product performance information and the following "NONCROP" sections for specific recommended uses.

**HAND-HELD and HIGH-VOLUME EQUIPMENT**

Mix this product in clean water and apply to foliage of vegetation to be controlled. For applications made on a spray-to-wet basis, spray coverage should be uniform and complete. Do not spray to the point of runoff.

For control of annual weeds listed in the Non-Crop section of this label, apply a 0.6 percent solution of this product plus nonionic surfactant to weeds less than 6 inches in height or runner length. Apply prior to seedhead formation in grass or bud formation in broadleaf weeds. Allow three or more days before tillage or mowing.

For annual weeds over 6 inches tall, or when not using additional surfactant, or unless otherwise specified, use a 1.2 percent solution. For best results, use a 2.4 percent solution on harder-to-control perennials, such as bermudagrass, dock, field bindweed, hemp dogbane, milkweed and Canada thistle.

When using application methods which result in less than complete coverage, use a 6.2 percent solution for annual and perennial weeds and a 6 to 12 percent solution for woody brush and trees.

Prepare the desired volume of spray solution by mixing the amount of this product in water as shown in the following table:

**AMOUNT OF NUP 8D01 HERBICIDE**

Desired Volume	0.6%	1.2%	1.8%	2.4%	6.0%	12%
1 Gal.	0.80 oz.	1.6 oz.	2.4 oz.	3.2 oz.	7.8 oz.	15.6 oz.
25 Gal.	1.2 pt.	1.2 qt.	1.8 qt.	2.4 qt.	6 qt.	12 qt.
100 Gal.	2.4 qt.	1.2 gal.	1.8 gal.	2.4 gal.	6 gal.	12 gal.

2 tablespoons = 1 fluid ounce

For use in knapsack sprayers, it is suggested that the recommended amount of this product be mixed with water in a larger container. Fill sprayer with the mixed solution.

**EXTREME CARE MUST BE EXERCISED TO AVOID CONTACT OF SPRAY WITH FOLIAGE, GREEN STEMS, EXPOSED NON-WOODY ROOTS OR FRUIT OF CROPS, DESIRABLE TURFGRASSES, TREES, SHRUBS OR OTHER DESIRABLE VEGETATION SINCE SEVERE DAMAGE OR DESTRUCTION MAY RESULT.**

Repeat treatments may be necessary to control weeds regenerating from underground parts or seeds.

Where repeat applications are necessary, do not exceed 12.7 quarts of this product per acre per year.

This product does not provide residual weed control. For subsequent weed control, follow a label-approved herbicide program.

Read and carefully observe the cautionary statements and all other information appearing on the labels of all herbicides used.

**INDUSTRIAL, RECREATIONAL AND PUBLIC AREAS**

When applied as directed for "NONCROP USES", under conditions described, this product controls annual and perennial weeds listed on this label growing in areas such as airports, ditch banks, dry ditches, dry canals, fencerows, golf courses, highways, industrial plant sites, lumber yards, manufacturing sites, office complexes, parking areas, parks, petroleum tank farms and pumping installations, pipelines, power and telephone rights-of-way, railroads, roadsides, schools, storage areas, utility substations, warehouse areas, other public areas and similar industrial or non-crop areas.

For specific rates of application and instructions for control of various annual and perennial weeds and woody brush and trees, see the "WEEDS CONTROLLED" section of this label.

This product may be applied with recirculating sprayers, shielded applicators, or wiper applicators in any noncrop site specified on this label. See the Selective Equipment part of "APPLICATION EQUIPMENT and TECHNIQUES" section of this label for information on proper use and calibration of this equipment.

**Chemical mowing - Perennials**

This product will suppress perennial grasses listed in this section to serve as a substitute for mowing. Use 9.6 fluid ounces of this product per acre when treating tall fescue, fine fescue, orchardgrass or quackgrass covers. Use 7.2 fluid ounces of this product per acre when treating Kentucky bluegrass. Apply treatments in 10 to 40 gallons of spray solution per acre.

Use only in areas where some temporary injury or discoloration of perennial grasses can be tolerated.

**Chemical mowing - Annuals**

For growth suppression of some annual grasses, such as annual ryegrass, wild barley and wild oats growing in coarse turf on roadsides or other industrial areas, apply 4.8 to 6.0 fluid ounces of this product in 10 to 40 gallons of spray solution per acre. Applications should be made when annual grasses are actively growing and before the seedheads are in the boot stage of development. Treatments may cause injury to the desired grasses.

**RAILROADS**

**Bare ground, Ballast and Shoulders, Crossings, and Spot treatment**

This product may be used to maintain bare ground on railroad ballast and shoulders. Repeat applications of this product may be used, as weeds emerge, to maintain bare ground. This product may be used to control tall-growing weeds to improve line-of-sight at railroad crossings and reduce the need for mowing along rights-of-way, wayside structures, and other similar areas. For crossing applications, up to 80 gallons of spray solution per acre may be used. This product may be tank mixed with the following products for ballast, shoulder, spot, bare ground crossing treatments and other similar areas:

- |          |             |         |
|----------|-------------|---------|
| ARSENAL  | GARLON 4    | SAHARA  |
| DICAMBA  | HYVAR™ X    | SPIKET™ |
| DIURON   | KROVAR I DF | TELAR   |
| ESCORT   | OUST        | 2,4-D   |
| VANQUISH | GARLON™ 3A  |         |

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**Brush control**

This product may be used to control woody brush and trees on railroad rights-of-way.

Apply 4.8 to 12 quarts of this product per acre as a broadcast spray, using boom-type or boom-less nozzles. Up to 80 gallons of spray solutions per acre may be used. Apply a 0.9 to 2.4 percent solution of this product when using high-volume spray-to-wet applications. Apply a 6 to 12 percent solution of this product when using low volume directed sprays for spot treatment.

This product may be mixed with the following products for enhanced control of woody brush and trees:

ARSENAL	GARLON 3A	GARLON 4
ESCORT	TORDON™ K	

**Bermudagrass release**

This product may be used to control or partially control many annual and perennial weeds for effective release of actively growing bermudagrass. Apply 1.2 to 3.6 pints of this product in up to 80 gallons of spray solutions per acre. Use the lower rate when treating annual weeds below 6 inches in height (or runner length). Use the higher rate as weeds increase in size or as they approach flower or seedhead formation. These rates will also provide partial control of the following perennial species:

Bahiagrass	Fescue, tall	Trumpet creeper
Bluestem, silver	Johnsongrass	Vaseygrass

This product may be tank-mixed with Oust. If tank-mixed, use no more than 1.2 to 3.6 pints of this product with 1 to 2 ounces of Oust per acre. Use the lower rates of each product to control annual weeds less than 6 inches in height (or runner length) that are listed in this label and the Oust label. Use the higher rates as annual weeds increase in size and approach the flower or seedhead stages. These rates will also provide partial control of the following perennial weeds:

Bahiagrass	Dewberry	Poorjoe
Blackberry	Dock, Curly	Raspberry
Bluestem, silver	Dog Fennel	Trumpet creeper
Broomsedge	Fescue, tall	Vaseygrass
Dallisgrass	Johnsongrass	Vervain, blue

Use only on well-established bermudagrass. Bermudagrass injury may result from the treatment, but regrowth will occur under moist conditions. Repeat applications in the same season are not recommended, since severe injury may occur.

**ROADSIDES**

**Shoulder treatments**

This product may be used on road shoulders. It may be applied with boom sprayers, shielded boom sprayers, high-volume off-center nozzles, hand-held equipment, and similar equipment.

**Guardrails and other obstacles to mowing**

This product may be used to control weeds growing under guardrails and around signposts and other objects along the roadside.

**Spot treatment**

This product may be used as a spot treatment to control unwanted vegetation growing along roadsides.

**Tank mixtures**

This product may be tank-mixed with the following products for shoulder, guardrail, spot and bare ground treatments:

DICAMBA	PENDULUM 3.3 EC	SAHARA
DIURON	PENDULUM WDG	SIMAZINE
ENDURANCE	PRINCEP DF	SURFLAN
ESCORT	PRINCEP LIQUID	TELAR
KROVAR I DF	RONSTAR 50 WP	VANQUISH
OUST	2,4-D	

See the "GENERAL NONCROP AREAS AND INDUSTRIAL SITES" section of this label for general instructions for tank mixing.

**Release of Bermudagrass or Bahiagrass**

**Dormant applications**

This product may be used to control or partially control many winter annual weeds and tall fescue for effective release of dormant bermudagrass or bahiagrass. Treat only when turf is dormant and prior to spring greenup. This product may also be tank-mixed with Oust for residual control. Tank mixtures of this product with Oust may delay greenup.

For best results on winter annuals, treat when plants are in an early growth stage (below 6 inches in height) after most have germinated. For best results on tall fescue, treat when fescue is at or beyond the 4 to 6-leaf stage.

Apply 9.6 to 76.8 fluid ounces of this product per acre alone or in a tank mixture with 0.25 to 1 ounce per acre of Oust. Apply the recommended rates in 10 to 40 gallons of water per acre. Use only in areas where bermudagrass or bahiagrass are desirable ground covers and where some temporary injury or discoloration can be tolerated. To avoid delays in greenup and minimize injury, add no more than 1.0 ounce of Oust per acre on bermudagrass and no more than 0.5 ounce of Oust per acre on bahiagrass and avoid treatments when these grasses are in semi-dormant condition.

**Actively growing bermudagrass**

This product may be used to control or partially control many annual and perennial weeds for effective release of actively growing bermudagrass. Apply 1.2 to 3.6 pints of this product in 10 to 40 gallons of spray solution per acre. Use the lower rate when treating annual weeds below 6 inches in height (or runner length). Use the higher rate as weeds increase in size or as they approach flower or seedhead formation. These rates will also provide partial control of the following perennial species:

Bahiagrass	Fescue, tall	Trumpetcreeper
Bluestem, silver	Johnsongrass	Vaseygrass

This product may be tank-mixed with Oust. If tank-mixed, use no more than 1.2 to 2.4 pints of this product with 1 to 2 ounces of Oust per acre. Use the lower rates of each product to control annual weeds less than 6 inches in height (or runner length) that are listed in this label and the Oust label. Use the higher rates as annual weeds increase in size and approach the flower or seedhead stages. These rates will also provide partial control of the following perennial weeds:

Bahiagrass	Dock, curly	Poorjoe
Bluestem, silver	Dogfennel	Trumpetcreeper
Broomsedge	Fescue, tall	Vaseygrass
Dallisgrass	Johnsongrass	Vervain, blue

Use only on well-established bermudagrass. Bermudagrass injury may result from the treatment, but regrowth will occur under moist conditions. Repeat applications of the tank mix in the same season are not recommended, since severe injury may occur.

**Actively growing bahiagrass**

For suppression of vegetative growth and seedhead inhibition of bahiagrass for approximately 45 days, apply 7.2 fluid ounces of this product in 10 to 40 gallons of water per acre. Apply 1 to 2 weeks after full greenup or after mowing to a uniform height of 3 to 4 inches. This application must be made prior to seedhead emergence.

For suppression up to 120 days, apply 4.8 fluid ounces of this product per acre, followed by an application of 2.4 to 4.8 fluid ounces per acre about 45 days later. Make no more than 2 applications per year.

**TANK MIXTURES FOR INDUSTRIAL SITES AND FORESTRY SITE PREPARATIONS**

**NUP 8D01 Herbicide plus OUST™**

Use on industrial sites including airports, industrial plants, lumberyards, petroleum tank farms, pumping stations, railroads, roadsides, storage areas or other similar sites where bare ground is desired.

This tank mixture may also be used as a site preparation treatment for sites to be planted to jack pine, loblolly pine, red pine, slash pine and Virginia pine. When applied as directed for "NONCROP USES" under the conditions described, this product plus Oust provides control of annual weeds listed in the "WEEDS CONTROLLED" section of the label for this product and Oust, and control or partial control of the perennial weeds listed below.

Apply 1.2 to 2.4 quarts of this product with 2.4 to 4.8 ounces of Oust in 10 to 40 gallons of spray solution per acre as a broadcast spray to actively growing weeds.

This mixture may be applied by aerial equipment in site prep operations. When applied by air, use the recommended rates in 5 to 15 gallons of spray solution per acre.

This product plus Oust tank mixtures may not be applied by air in California.

For control of annual weeds, use the lower rates of these products.

For control of the listed perennial weeds, use the higher rates of both products. For partial control, use the lower rates.

<b>Bahiagrass</b>	<b>Dogfennel</b>	<b>Poorjoe**</b>
<i>Paspalum notatum</i>	<i>Eupatorium capillitiorum</i>	<i>Diodia teres</i>
<b>Bermudagrass*</b>	<b>Fescue, tall</b>	<b>Trumpetcreeper*</b>
<i>Cynodon dactylon</i>	<i>Festuca arundinacea</i>	<i>Campsis radicans</i>
<b>Broomsedge</b>	<b>Johnsongrass**</b>	<b>Vaseygrass</b>
<i>Andropogon virginicus</i>	<i>Sorghum halepense</i>	<i>Paspalum urvillei</i>
<b>Dock, curly</b>	<b>Quackgrass</b>	<b>Vervain, blue</b>
<i>Rumex crispus</i>	<i>Agropyron repens</i>	<i>Verbena hastata</i>

\*Suppression at the higher rates only.

\*\*Control at the lower rates.

Read and carefully observe the cautionary statements and all other information appearing on the labels of all herbicides used.

**TANK MIXTURES NONCROP SITES**

When applied as a tank mixture, this product provides control of the emerged annual weeds and partial control of the emerged perennial weeds listed in this label. When applied as a tank mixture, the following residual herbicides will provide preemergence control of the weeds listed in the individual product labels.



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Riverdale Razor plus DIURON

PRINCEP™ CALIBER™ 90

Riverdale Razor plus KROVAR™ I

Riverdale Razor plus SIMAZINE 4L

Riverdale Razor plus KROVAR II

Riverdale Razor plus SIMAZINE 80W

Riverdale Razor plus RONSTAR™ 50WP

Riverdale Razor plus SURFLAN™ 75W

Riverdale Razor plus SIMAZINE,

Riverdale Razor plus SURFLAN AS

When tank mixing with residual herbicides, add an agriculturally approved nonionic surfactant at 0.5 to 1 percent by volume of spray solution. See the "MIXING, ADDITIVES and APPLICATION INSTRUCTIONS" section of this label before preparing these tank mixtures. Read and carefully observe the label claims, cautionary statements, recommended use rates and all other information on the labels of all products used in these tank mixtures. Use according to the most restrictive label directions for each product in the mixture.

**CONTROL OF EMERGED WEEDS**

Note: For backpack sprayer and handgun applications, see the "HAND-HELD AND HIGH VOLUME EQUIPMENT" section for recommended rates.

**Annual Weeds** - Apply 1.2 quarts per acre of this product in these tank mixtures when weeds are less than 6 inches tall and 1.8 quarts per acre when weeds are more than 6 inches tall.

**Perennial Weeds** - For partial control of perennial weeds using these tank mixtures, apply 2.4 to 6 quarts per acre of this product. Follow the recommendations in the "WEEDS CONTROLLED" section of this label for stage of growth and rate of application for specific perennial weeds.

**PREEMERGENCE WEED CONTROL**

For preemergence weed control, refer to the individual product labels for specific noncrop sites, rates, carrier volumes and precautionary statements.

Mix only the quantity of spray solution which can be used during the same day. Do not allow these tank mixtures to stand overnight as this may result in reduced weed control.

**FARMSTEAD WEED CONTROL**

When applied as directed for "NONCROP USES", under conditions described, this product controls undesirable vegetation listed on this label around farmstead building foundations, along and in fences, shelterbelts and for general nonselective farmstead weed control.

For specific rates of application and instructions for control of various annual and perennial weeds, see the "WEEDS CONTROLLED" section of this label.

**FARM DITCHES**

This product will suppress perennial grasses along farm ditches. Apply this product at a rate of 7.2 to 9.6 fluid ounces per acre. Use 9.6 fluid ounces per acre when treating tall (coarse) fescue, fine fescue, orchardgrass or quackgrass covers. For best suppression of these species, add ammonium sulfate at a rate of 1.7 pounds per 10 gallons of spray solution. Use 7.2 fluid ounces per acre without ammonium sulfate when treating Kentucky bluegrass.

Apply treatments in 10 to 20 gallons of spray solution per acre to actively growing perennial grass covers. For best spray distribution and coverage, use flat fan nozzles.

Add a nonionic surfactant at a rate of 0.5 percent of the spray solution.

Where broadleaf weed control or suppression is desired, tank mix this product with an appropriate, labeled broadleaf weed herbicide.

**CONSERVATION RESERVE PROGRAM (CRP ACRES)**

This product can be used to control undesirable vegetation when rotating out of CRP acres or to suppress competitive growth and seed production of undesirable vegetation in CRP acres.

For specific rates of application for various annual and perennial weeds, see the "WEEDS CONTROLLED" section of this label.

CRP applications may be made with wiper applicators or conventional spray equipment.

For selective applications with broadcast spray equipment, apply 14.4 to 21.3 ounces per acre of this product in early spring before desirable CRP grasses, such as crested and tall wheatgrass, break dormancy and initiate green growth. Late fall applications can be made after desirable perennial grasses have reached dormancy. Some stunting of CRP perennial grasses will occur if applications are made when plants are not dormant.

#### DORMANT RANGELAND

This product will control or suppress many weeds, including downy brome, cheat grass, cereal rye, medusahead rye and jointed goatgrass in dormant rangeland.

Apply 9.6 to 21.3 ounces per acre of this product in the early spring when the weeds have greened up, but desirable grasses, such as crested and tall wheatgrass are still truly dormant.

Slight discoloration of the desirable grasses may occur, but they will regreen and regrow under moist soil conditions as effects of this product wear off.

Do not use additional surfactant or ammonium sulfate when spraying dormant rangeland grasses with NUP 8D01.

#### HABITAT MANAGEMENT

This product is recommended for the restoration and/or maintenance of native habitats and in wildlife management areas. Apply as recommended in the "NONCROP USES" section of this label.

**Habitat Restoration and Maintenance** – When applied as directed, exotic and other undesirable vegetation may be controlled in habitat management areas. Applications can be made to allow recovery of native plant species, prior to planting desirable native species, and for similar broad spectrum vegetation control requirements in habitat management areas. Spot treatments can be made to selectively remove unwanted plants for habitat maintenance and enhancement. For spot treatments, care should be exercised to keep spray off of desirable plants.

**Wildlife Food Plots** – This product may be used as a site preparation treatment prior to planting wildlife food plots. Any wildlife food species may be planted after applying this product, or native species may be allowed to repopulate the area. If tillage is needed to prepare a seedbed, wait 7 days after applying this product before tilling.

#### SILVICULTURAL SITES and RIGHTS-OF-WAY

NOTE: NOT RECOMMENDED FOR USE AS AN OVER-THE-TOP BROADCAST SPRAY IN SILVICULTURAL NURSERIES.

When applied as directed for "NONCROP USES" under conditions described, this product controls undesirable vegetation listed on this label. This product also suppresses or controls undesirable vegetation listed on this label when applied at recommended rates for release of established coniferous species listed on this label.

For specific rates of application and instructions for control of various brush, annual and perennial weeds, see the "WEEDS CONTROLLED" section of this label. For specific rates of application for release of listed coniferous species, see the "CONIFER RELEASE" part of this section of the label.

Where repeat applications are necessary, do not exceed 12.7 quarts of this product per acre per year.

**Aerial Application** – This product may be applied using aerial spray equipment for silvicultural site preparation, conifer release and rights-of-way treatments. See the "APPLICATION EQUIPMENT and TECHNIQUES" part of the "MIXING, ADDITIVES and APPLICATION INSTRUCTIONS" section of this label for information on how to apply this product by air.

DO NOT APPLY THIS PRODUCT BY AIR TO RIGHTS-OF-WAY SITES IN THE STATE OF CALIFORNIA.

#### SITE PREPARATION

Following preplant applications of this product, any silvicultural species may be planted.

#### POSTDIRECTED SPRAY

In established silvicultural sites, use as a spray on the foliage of undesirable vegetation. Care must be exercised to avoid contact of spray, drift or mist with foliage or green bark of desirable species.

#### CONIFER RELEASE

For release, apply only where conifers have been established for more than one year. Vegetation should not be disturbed prior to treatment or until visual symptoms appear after treatment. Symptoms of treatment are slow to appear, specially in woody species treated in late fall. Injury may occur to conifers treated for release, especially where spray patterns overlap or the higher rates are applied or when applications are made during periods of active conifer growth. Do not use additional surfactant with conifer release applications.

Applications must be made after formation of final conifer resting buds in the fall or prior to initial bud swelling in spring. Some autumn colors on undesirable deciduous species are acceptable provided no major leaf drop has occurred. Use the following rates for conifer release to control or partially control the weeds listed in the "WEEDS CONTROLLED" section of this label.

For release of the following conifer species:

<b>Douglas fir</b>	<b>Hemlock</b>	<b>Spruce</b>
<i>Pseudotsuga menziesii</i>	<i>Tsuga spp.</i>	<i>Picea spp.</i>
<b>Fir</b>	<b>Pines*</b>	
<i>Abies spp.</i>	<i>Pinus spp.</i>	

Apply 1.8 to 2.4 quarts of this product per acre except in Washington and Oregon, west of the crest of the Cascade Mountains. For spring treatments west of the crest of the Cascade Mountains, apply 1.2 quarts of this product per acre before conifer bud swell for control of annual weeds. For fall treatments in Washington and Oregon, west of the crest of the Cascade Mountains, apply 1.2 to 1.8 quarts of this product per acre before any major leaf drop of deciduous species.

For release of western hemlock, apply 1.2 quarts of this product per acre.

For release of the following conifer species:

<b>Eastern white pine</b> <i>Pinus strobus</i>	<b>Loblolly pine</b> <i>Pinus Taeda</i>	<b>Slash pine</b> <i>Pinus elliotti</i>
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**Late Season Application** – Apply 1.8 to 2.4 quarts of this product in a minimum of 5 gallons of spray solution per acre during early autumn. Applications made prior to September 1 or when conditions are conducive to rapid growth of conifers will create the potential for increased injury in the form of tip and/or needle burn. Injury may decrease with later applications. Some autumn colors are acceptable at time of application. Apply prior to frost or leaf drop of undesirable plants. Applications made according to label directions will release loblolly pine, eastern white pine and slash pine by reducing competition from the following species:

<p><b>Ash</b> <i>Fraxinus spp.</i></p> <p><b>Cherry: Black</b> <i>Prunus serotina</i></p> <p><b>Elm</b> <i>Ulmus spp.</i></p> <p><b>Hawthorn</b> <i>Crataegus spp.</i></p> <p><b>Locust, black</b> <i>Robinia pseudoacacia</i></p> <p><b>Maple, red</b> <i>Acer rubra</i></p> <p><b>Oak: Black</b> <i>Quercus velutina</i></p>	<p><b>Pin</b> <i>Prunus pensylvanica</i></p> <p><b>Persimmon</b> <i>Diospyros spp.</i></p> <p><b>Poplar, yellow</b> <i>Liriodendron tulipifera</i></p> <p><b>Post</b> <i>Quercus stellata</i></p> <p><b>Sassafras</b> <i>Sassafras albidum</i></p> <p><b>Smooth</b> <i>Rhus glabra</i></p> <p><b>Sourwood</b> <i>Oxydendrum arboreum</i></p>	<p><b>Southern Red</b> <i>Quercus falcata</i></p> <p><b>Sumac: Poison</b> <i>Rhus vernix</i></p> <p><b>Sweetgum</b> <i>Liquidambar styraciflua</i></p> <p><b>White</b> <i>Quercus alba</i></p> <p><b>Winged</b> <i>Rhus copallina</i></p>
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Apply only to those sites where woody brush and trees listed in this level constitute the majority of the undesirable species.

**NUP 8D01 PLUS OUST TANK MIXTURES FOR CONIFER RELEASE FROM HERBACEOUS WEEDS**

To release loblolly pines from herbaceous weeds, tank mixtures of this product with Oust will provide control of annual weeds listed in the "WEEDS CONTROLLED" section of this and the Oust label, and partial control of the perennial weeds listed below.

Apply 21.3 to 28.8 fluid ounces of this product with 2 to 4 ounces of Oust in 10 to 30 gallons of spray solution per acre. Make application to actively growing weeds as a broadcast spray over the top of the young loblolly pines.

This product plus Oust tank mixtures may not be applied by air in California.

This tank mixture may be applied by using aerial equipment. When applying by air, use the recommended rate in 5 to 15 gallons of spray solution per acre.

For control of annual weeds below 12 inches in height (or runner length on annual vines), use the lower rates of both products. Use the higher rates of both products when annual weeds are in more advanced stages of growth and approaching flower or seed formation.

Use the higher rates of both products for partial control of the following perennial weeds. Use the lower rates for suppression of growth.

<p><b>Bahiagrass</b> <i>Paspalum notatum</i></p> <p><b>Broomsedge</b> <i>Andropogon virginicus</i></p> <p><b>Dock, curly</b> <i>Rumex crispus</i></p> <p><b>Dogfennel</b> <i>Eupatorium capilloforium</i></p>	<p><b>Fescue, tall</b> <i>Festuca arundinacea</i></p> <p><b>Johnsongrass*</b> <i>Sorghum halepense</i></p> <p><b>Poorjoe*</b> <i>Diodia teres</i></p> <p><b>Trumpetcreeper**</b> <i>Campsis radicans</i></p>	<p><b>Vaseygrass</b> <i>Paspalum urvillei</i></p> <p><b>Vervain, blue</b> <i>Verbena hastata</i></p>
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\*Control at the higher rates.

\*\*Suppression at the higher rates only.

Pine damage may occur or can be accentuated if treatment takes place when young trees are under stress from drought, flood water, insects or disease.

Read and observe the cautionary statements and all other information appearing on the labels of all herbicides used.

**NOTE TO USER**

This product must not be used in areas where adverse impact on federally designated endangered/threatened plant or aquatic species is likely.

Prior to making applications, the user of this product must determine that no such species are located in or immediately adjacent to the area to be treated.

**CUT STUMP TREATMENTS**

Woody vegetation may be controlled by treating freshly cut stumps of trees and re-sprouts with this product. Apply this product using suitable equipment to ensure coverage of the entire cambium. Cut vegetation close to the soil surface. Apply a 50 to 100 percent solution of this product to the freshly-cut surface immediately after cutting. Delays in application may result in reduced performance. For best results, applications should be made during periods of active growth and full leaf expansion.

When used according to directions for cut stump application, this product will CONTROL, PARTIALLY CONTROL or SUPPRESS many types of woody brush and tree species, some of which are listed below:

<b>Alder</b> <i>Alnus spp.</i>	<b>Oak</b> <i>Quercus spp.</i>	<b>Sweetgum</b> <i>Liquidambar styraciflua</i>
<b>Eucalyptus</b> <i>Eucalyptus spp.</i>	<b>Reed, giant</b> <i>Arundo donax</i>	<b>Tan Oak</b> <i>Lithocarpus densiflorus</i>
<b>Madrone</b> <i>Arbutus menziesii</i>	<b>Saltcedar</b> <i>Tamarisk spp.</i>	<b>Willow</b> <i>Salix spp.</i>

**INJECTION AND FRILL APPLICATIONS**

Woody vegetation may be controlled by injection or frill application of this product. Apply this product using suitable equipment which must penetrate into the living tissue. Apply the equivalent of 1.2 ml of this product per each 2 to 3 inches of trunk diameter (DBH). This is best achieved by applying a 50 to 100 percent concentration of this material either to a continuous frill around the tree or as cuts evenly spaced around the tree below all branches. As tree diameter increases in size, better results are achieved by applying diluted material to a continuous frill or more closely spaced cuttings. Avoid application techniques that allow runoff to occur from frill or cut areas in species that exude sap freely after frills or cutting. In species such as this, make frill or cut at an oblique angle so as to produce a cupping effect and use undiluted material. For best results, application should be made during periods of active growth and after full leaf expansion.

This treatment WILL CONTROL the following woody species:

<b>Oak</b> <i>Quercus spp.</i>	<b>Sweetgum</b> <i>Liquidambar styraciflua</i>
<b>Poplar</b> <i>Populus spp.</i>	<b>Sycamore</b> <i>Platanus occidentalis</i>

This treatment WILL SUPPRESS the following woody species:

<b>Black gum</b> <i>Nyssa sylvatica</i>	<b>Hickory</b> <i>Carya spp.</i>
<b>Dogwood</b> <i>Cornus spp.</i>	<b>Maple, red</b> <i>Acer rubrum</i>

**TURFGRASSES AND GRASSES FOR SEED PRODUCTION**

**PREPLANT AND RENOVATION**

When applied as directed for "NONCROP USES", under conditions described, this product controls most existing vegetation prior to the planting or renovation of either turfgrasses or grass seed production areas.

For specific rates of application and instructions for control of various annual and perennial weeds, and woody brush and trees, see the "WEEDS CONTROLLED" section of this label.

For maximum control of existing vegetation, delay planting to determine if any regrowth from escaped underground plant parts occurs. Where repeat treatments are necessary, sufficient regrowth must be attained prior to application. For warm-season grasses, such as bermudagrass, summer or fall applications provide best control.

DO NOT DISTURB SOIL OR UNDERGROUND PLANT PARTS BEFORE TREATMENT. Tillage or renovation techniques such as vertical mowing, coring or slicing should be delayed for 7 days after application to allow proper translocation into underground plant parts.

**TURFGRASSES**

Where existing vegetation is growing in a field or unmowed situation, to actively growing weeds at the stages of growth listed in the of this label.

Where existing vegetation is growing under mowed turfgrass management in such sites as apartment complexes, residential areas and sod farms, apply this product after omitting at least one regular mowing to allow sufficient growth for good interception of the spray.

Desirable turfgrasses may be planted following the above procedures.

**GRASSES FOR SEED PRODUCTION**

Apply this product to actively growing weeds at the stages of growth recommended in the "WEEDS CONTROLLED" section of this label prior to planting or renovation of turf or forage grass areas grown for seed production.

DO NOT feed or graze treated areas within 8 weeks after application.

**ANNUAL WEED CONTROL IN DORMANT BERMUDAGRASS AND BAHIAGRASS TURF**

When applied as directed for "NONCROP USES" under the conditions described, this product will provide control or suppression of many winter annual weeds and tall fescue for effective release of dormant bermudagrass and bahiagrass turf. Refer to the rate table for NUP 8D01 alone under the "RELEASE OF BERMUDAGRASS and BAHIAGRASS" section of this label for recommended rates and volumes on the species to be suppressed or controlled. Treat only when turf is dormant and prior to spring greenup. Spot treatments or broadcast applications of this product in excess of 21.3 fluid ounces per acre may result in injury or delayed greenup in highly maintained turfgrass areas; i.e., golf courses, lawns, etc. DO NOT APPLY TANK MIXTURES of this product plus Oust in highly maintained turfgrass areas.

**RELEASE OF BERMUDAGRASS OR BAHIAGRASS**

NOTE: Use only in areas where bermudagrass or bahiagrass are desirable ground covers and where some temporary injury or discoloration can be tolerated. Use tank mixtures of this product plus Oust only on railroads, highways, utility plant sites, or other right-of-way areas.

When applied as directed for "NONCROP USES" under the conditions described, this product will provide control or suppression of many winter annual weeds and tall fescue for effective release of dormant bermudagrass or bahiagrass. This product may be tank-mixed with Oust as recommended for residual control. Make applications to dormant bermudagrass or bahiagrass. Tank mixtures of this product plus Oust may delay greenup. To avoid delays in greenup and minimize injury, do not add more than 1 ounce per acre of Oust on bermudagrass or more than 0.5 ounces per acre on bahiagrass, or treat when these grasses are in a semi-dormant condition.

For best results on winter annuals, treat when plants are in an early growth stage (below 6 inches in height) after most have germinated. For best results on tall fescue, treat when fescue is in or beyond the 4 to 6-leaf stage.

**WEEDS CONTROLLED**

Rate recommendations for control or suppression of winter annuals and tall fescue are listed below:

Apply the recommended rates of this product alone or as a tank mixture in 10 to 25 gallons of water, plus 0.5 to 1.0 percent nonionic surfactant by total spray volume per acre.

For the best recommendation for the mixture of weeds within your geographic area, contact your Nufarm sales representative.

**WEEDS CONTROLLED OR SUPPRESSED WITH NUP 8D01 ALONE\***

NOTE: C = Control  
S = Suppression

WEED SPECIES	NUP 8D01 FLUID OZ/ACRE					
	9.6	14.4	21.3	28.8	38.4	76.8
Barley, little <i>Hordeum pusillum</i>	S	C	C	C	C	C
Bedstraw; catchweed <i>Galium aparine</i>	S	C	C	C	C	C
Bluegrass, annual <i>Poa annua</i>	S	C	C	C	C	C
Chervil <i>Chaerophyllum tainturieri</i>	S	C	C	C	C	C
Chickweed, common <i>Stellaria media</i>	S	C	C	C	C	C
Clover, crimson <i>Trifolium incarnatum</i>	•	S	S	C	C	C
Clover, large hop <i>Trifolium campestre</i>	•	S	S	C	C	C
Fescue, tall <i>Festuca arundinaceae</i>	•	•	•	•	S	S
Geranium, Carolina <i>Geranium carolinianum</i>	•	•	S	S	C	C
Henbit <i>Lamium amplexicaule</i>	•	S	C	C	C	C
Ryegrass Italian <i>Lolium multiflorum</i>	•	•	S	C	C	C
Speedwell, corn <i>Veronica arvensis</i>	S	C	C	C	C	C
Vetch, common <i>Vicia sativa</i>	•	•	S	C	C	C

\*These rates apply only to sites where an established competitive turf is present.

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## ORCHARDS AND VINEYARDS

Rates of application for orchards and vineyards: Apply 1-2 qts NUP 8D01 in 15 to 100 gallons of water per acre for control of annual grasses, broadleaves and perennials. Use the higher rate for larger weeds, dense stands or when weeds are under drought stress. Control will be best when weeds are actively growing and applications are made in the bud to early bloom stage. For difficult to control perennials, refer to the weeds controlled section of this label for specific rates of application up to a maximum of 5 quarts per acre. For band or spot treatment, calculate rates according to the actual portion of an acre treated.

If weeds have been recently mowed, allow to regrow before application for maximum control. In cases of extreme drought stress and weeds are not actively growing, irrigate to promote weed growth prior to application.

GRAPE VINEYARDS: Established at least 3 years - Apply after shatter following bloom and before grape shoots reach the ground or during dormant season. Use a hooded boom and low pressure flooding nozzles to deliver coarse droplets.

USE PRECAUTIONS: Grapes are extremely sensitive to 2,4-D. Use a directed application so no spray contacts grape leaves and young shoots or stems.

APPLE AND PEAR ORCHARDS: NON-BEARING TREES (well established - one year or older), and BEARING TREES before and after bloom. A maximum of two applications per season are allowed. The minimum retreatment interval period is 75 days. The pre-harvest interval is 14 days.

STONE FRUIT, PISTACHIOS, AND NUT ORCHARDS: Make up to two applications through the dormant or growing seasons as needed. Do not harvest stone fruits within 40 days of application. Do not harvest nuts within 60 days of application. Do not graze or feed cover crops from treated orchards to livestock.

PRECAUTIONS IN APPLYING IN ORCHARDS AND VINEYARDS: Apply only after irrigation and allow maximum time before the next irrigation. Do not apply around fruit trees or vines with hand gun. Use only flat-fan type nozzles and low pressures - 20 to 25 pounds. Use a lined or shielded boom applicator which can be calibrated and which will deposit the spray uniformly. Avoid contact with fruit, foliage, stems or lower limbs of trees or vines. Apply precisely and uniformly to prevent damage to the trees or vines and to obtain satisfactory weed control. Do not apply during windy periods or extremely high temperatures. Do not spray bare ground. To avoid leaching, do not apply to dry soils. Apply when soil is moist and do not irrigate for 5 to 7 days after application.

**RELEASE OF ACTIVELY GROWING BERMUDAGRASS**

When applied as directed, this product will aid in the release of bermudagrass by providing control of annual species listed in the "WEEDS CONTROLLED" section of this and the Oust label, and suppression or partial control of certain perennial weeds.

For control or suppression of those annual species listed on this label, use 1.2 to 3.6 pints of this product as a broadcast spray in 10 to 25 gallons of spray solution per acre. Use the lower rate when treating annual weeds below 6 inches in height (or length of runner in annual vines). Use the higher rate as weeds increase in size or as they approach flower or seedhead formation.

Use the higher rate of this product for partial control of the following perennial species. Use the lower rates for suppression of growth. For best results, see the "WEEDS CONTROLLED" section of this label for proper stage of growth.

<b>Bahiagrass</b> <i>Paspalum notatum</i>	<b>Fescue, tall</b> <i>Festuca arundinacea</i>	<b>Trumpet creeper**</b> <i>Campsis radicans</i>
<b>Bluestem, silver</b> <i>Andropogon saccharoides</i>	<b>Johnsongrass*</b> <i>Sorghum halepense</i>	<b>Vaseygrass</b> <i>Paspalum urvillei</i>

\*Control at the higher rates.  
\*\*Suppression at higher rates only.

This product may be tank-mixed with Oust. If tank-mixed, use no more than 1.2 to 2.4 pints per acre of this product with 1 to 2 ounces of Oust per acre.

Use the lower rates of both mixtures to control annual weeds below 6 inches in height (or runner length in annual vines) that are listed in the "WEEDS CONTROLLED" section of this booklet and the Oust label. Use the higher rates as annual weeds increase in size and approach the flower or seedhead stages.

Use the higher rates of this product to provide partial control of the following perennial weeds. Use the lower rates for suppression of growth.

<b>Bahiagrass</b> <i>Paspalum notatum</i>	<b>Dogfennel</b> <i>Eupatorium capilliflorum</i>	<b>Trumpet creeper**</b> <i>Campsis radicans</i>
<b>Bluestem, silver</b> <i>Andropogon saccharoides</i>	<b>Fescue, tall</b> <i>Festuca arundinacea</i>	<b>Vaseygrass</b> <i>Paspalum urvillei</i>
<b>Broomsedge</b> <i>Andropogon virginicus</i>	<b>Johnsongrass*</b> <i>Sorghum halepense</i>	<b>Vervain, blue</b> <i>Verbena hastata</i>
<b>Dock, curly</b> <i>Rumex crispus</i>	<b>Poorjoe**</b> <i>Diodia teres</i>	

\*Suppression at higher rates only.  
\*\*Control at the higher rates.

**WARRANTY LIMITATIONS AND DISCLAIMER**

Seller warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the label when it is used in strict accordance with the "Directions For Use" when used under normal conditions. THIS IS THE ONLY WARRANTY MADE ON THIS PRODUCT. NO OTHER EXPRESS AND NO IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE IS MADE OUTSIDE OF THIS LABEL. Therefore, neither this warranty nor any other warranty of merchantability or fitness for a particular purpose, express or implied, extends to the use of this product contrary to label instructions (including conditions noted on the label, such as unfavorable temperatures, soil conditions, etc.), under abnormal conditions (such as excessive rainfall, drought, tornadoes, hurricanes, etc.), or under conditions not reasonably foreseeable to or beyond the control of Seller.

When Buyer or User suffers losses or damages resulting from the use or handling of this product (including claims based on contract, negligence, strict liability, or other legal theories), Buyer or User must promptly notify Seller, in writing, of any claims to be eligible to receive either remedy given below. The EXCLUSIVE REMEDY OF THE BUYER OR USER and the LIMIT OF LIABILITY of Seller will be one of the following, at the election of the Seller:

1. Refund of purchase price paid by Buyer or User for product bought
- or
2. Replacement of amount of product used.

The Seller will not be liable for consequential or incidental damages or losses. The terms of this Warranty Limitations and Disclaimer cannot be varied by any written or verbal statements or agreements. Any employee or sales agent of the Seller is not authorized to vary or exceed the terms of this Warranty Limitations and Disclaimer in any manner.

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