

228-385

11/19/2002

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U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Pesticide Programs
Registration Division (97505C)
401 "M" St., S.W.
Washington, D.C. 20460

EPA Reg. Number:
228-385

Date of Issuance:
NOV 19 2002

NOTICE OF PESTICIDE:
 Registration
 Reregistration

Term of Issuance:
Conditional

Name of Pesticide Product:
Riverdale Triclopyr 4
Herbicide

(under FIFRA, as amended)

Name and Address of Registrant (include ZIP Code):

Riverdale Chemical Company
1333 Burr Ridge Parkway, Suite 125 A
Burr Ridge, IL 60521-0866

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

On the basis of information furnished by the registrant, the above named pesticide is hereby registered/reregistered under the Federal Insecticide, Fungicide and Rodenticide Act.

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

This product is conditionally registered in accordance with FIFRA sec. 3(c)(7)(A) provided that you:

1. Submit and/or cite all data required for registration/reregistration of your product when the Agency requires all registrants of similar products to submit such data .
2. Change the registration number on the label to 228-385.
2. It is noted that "greater than or equal to" signs in the gloves statement on the electronic copy that was reviewed did not print properly. The final printed labeling must contain greater than or equal signs in the appropriate places in the gloves statement.
4. Submit two copies of the final printed label for the record.

If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA sec. 6(e). Your release for shipment of the product constitutes acceptance of these conditions.

Signature of Approving Official:

Date:

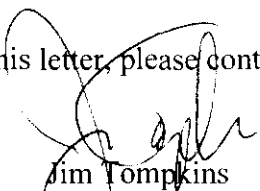
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A stamped copy of the label is enclosed for your records.

If you have any questions about this letter, please contact Tobi Colvin-Snyder at 703-305-7801.



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

RIVERDALE®

TRICLOPYR 4 HERBICIDE

For the control of woody plants and broadleaf weeds on rights-of-way, industrial sites, non-crop areas, non-irrigation ditch banks, forests, and wildlife openings, including grazed areas on these sites.

ACTIVE INGREDIENT:

Triclopyr: Butoxyethyl ester of 3,5,6-trichloro-2-pyridinyloxyacetic Acid..... 61.6%

INERT INGREDIENTS:..... 38.4%

Contains Petroleum Distillates TOTAL..... 100.0%

Acid equivalent:

3,5,6-trichloro-2-pyridinyloxyacetic Acid.....44.3%, 4 lb./gal.

Riverdale is a Registered Trademark of Riverdale Chemical Co.

KEEP OUT OF REACH OF CHILDREN

CAUTION - PRECAUCION

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 BOOKLET FOR ADDITIONAL PRECAUTIONARY AND FIRST AID STATEMENTS

EPA REG. NO. 228-GIL

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GALS

EPA EST. NO. 228-IL-1

**ACCEPTED
with COMMENTS
In EPA Letter Dated**

NOV 19 2002

Under the Federal Insecticide, Fungicide, and Rodenticide Act as amended, for the pesticide registered under EPA Reg. No. 228-385

MANUFACTURED BY

RIVERDALE CHEMICAL COMPANY

BURR RIDGE, ILLINOIS 60527-0866

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

Causes moderate eye irritation. Harmful if swallowed or absorbed through skin. Avoid contact with eyes, skin, or clothing. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

Personal Protective Equipment (PPE): Applicators and other handlers must wear: long-sleeved shirt, long pants, shoes plus socks, and chemical-resistant gloves such as butyl rubber .14 mils, or natural rubber .14 mils, or neoprene rubber >.14 mils, or nitrile rubber .14 mils.

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

USER SAFETY RECOMMENDATIONS

USERS SHOULD: Wash 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. Users should 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.

FIRST AID STATEMENT

Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

- IF ON SKIN:
OR CLOTHING** Take off contaminated clothing. Rinse skin immediately with plenty of water for 15 to 20 minutes. Call a poison control center or doctor for treatment advice.
- IF SWALLOWED:** Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person.
- NOTE TO PHYSICIAN:** Contains petroleum distillate - vomiting may cause aspiration pneumonia.

ENVIRONMENTAL HAZARDS

This pesticide is toxic to fish. 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 cleaning equipment or disposing of equipment washwaters.

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

PHYSICAL OR CHEMICAL HAZARDS

Combustible. Do not use or store near heat or open flame. Do not cut or weld container.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Read all Directions For Use carefully before applying. 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 regulations.

AGRICULTURAL USE REQUIREMENTS

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

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

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is: Coveralls, shoes plus socks, protective eyewear and chemical-resistant gloves such as Barrier Laminate, Nitrile Rubber, or Viton.

NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to all user sites on this label except for forestry uses.

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

GENERAL INFORMATION

Triclopyr 4 herbicide is recommended for the control of unwanted woody plants and annual and perennial broadleaf weeds in forests, on rangelands, permanent grass pastures, and conservation program (CRP) acres, and on non-crop areas including industrial manufacturing and storage sites, rights-of-way such as electrical power lines, communication lines, pipelines, roadsides and railroads, fence rows, non-irrigation ditch banks, and around farm

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buildings. Use on these sites may include application to grazed areas as well as establishment and maintenance of wildlife openings.

GENERAL USE PRECAUTIONS

Use Requirements for Non-cropland Areas: No Worker Protection Standard worker entry restrictions or worker notification requirements apply when this product is applied to non-cropland.

In Arizona: The state of Arizona has not approved Triclopyr 4 for use on plants grown for commercial production; specifically forests grown for commercial timber production, or on designated grazing areas.

Chemigation: Do not apply this product through any type of irrigation system.

Other Precautions: When applying this product in tank mix combination, follow all applicable use directions and precautions on each manufacturer's label.

Many forbs (herbaceous broadleaves) are susceptible to Triclopyr 4. Do not spray pastures containing desirable forbs, especially legumes such as clover, unless injury or loss of such plants can be tolerated. However, the stand and growth of established grasses usually is improved after spraying, especially when rainfall is adequate and grazing is deferred.

Established grasses are tolerant to this product, but newly seeded grasses may be injured until well established as indicated by tillering, development of a secondary root system and vigorous growth. Do not reseed treated areas for a minimum of three weeks after treatment.

Do not apply on ditches used to transport irrigation water for domestic purposes. Do not apply where runoff or irrigation water may flow onto agricultural land as injury to crops may result.

Do not apply this product using mist blowers.

Sprays applied directly to Christmas trees may result in conifer injury. When treating unwanted vegetation in Christmas tree plantations, care should be taken to direct sprays away from conifers.

Do not apply Triclopyr 4 directly to, or otherwise permit it to come into direct contact with cotton, grapes, peanuts, soybeans, tobacco, vegetable crops, flowers, citrus, or other desirable broadleaf plants and do not permit spray mists containing it to drift onto them.

It is permissible to treat non-irrigation ditch banks, seasonally dry wetlands, flood plains, deltas, marshes, swamps, bogs, and transitional areas between upland and lowland sites when surface water is not present. Do not apply to open water such as lakes, reservoirs, rivers, streams, creeks, salt water bays, or estuaries.

Maximum Use Rates: Apply no more than 2 lbs. a.e. (1/2 gal. of this product) per acre and only one application per growing season on range and pasture sites, including rights-of-way, fence rows, and any areas where grazing or harvesting is allowed.

Grazed areas on non-cropland and forestry sites may be spot treated if they comprise no more than 10% of the total area that can be grazed.

Apply no more than 6 lbs. a.e. (1-1/2 gals. of this product) per acre per year to forestry use sites.

For all use sites other than range, pasture, forestry sites and grazed areas, the maximum

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application rate is 8 lbs. a.e. (2 gals. of the product) per acre per year.

Avoid Injurious Spray Drift: Applications should be made only when there is little or no hazard from spray drift. Very small quantities of spray, which may not be visible may seriously injure susceptible plants. Do not spray when wind is blowing toward susceptible crops or ornamental plants near enough to be injured. It is suggested that a continuous smoke column at or near the spray site or a smoke generator on the spray equipment be used to detect air movement, lapse conditions, or temperature inversions (stable air). If the smoke layers or indicates a potential of hazardous spray drift, do not spray.

Aerial Application: This product may be aerially applied by fixed wing aircraft or

helicopter. For aerial application, use an agriculturally registered spray thickening drift control additive as recommended by the manufacturer or apply through the Microfoil* boom, Thru-Valve* boom, or equivalent drift control system. Thickened sprays prepared by using high viscosity invert systems or other drift reducing systems may be utilized if they are made as drift-free as are mixtures containing an agriculturally registered thickening agent or applications made with the Microfoil boom or Thru-Valve boom. If a spray thickening agent is used, follow all use recommendations and precautions on the product label. Do not use a thickening agent with the Microfoil boom, Thru-Valve boom, or other systems that cannot accommodate thick sprays.

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 rice patties.

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 shall be observed.

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

Information On 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

Volume - Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.

Pressure - Do not exceed the nozzle manufacturer's recommended pressures. For many nozzle types lower pressure produces larger droplets. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.

Number of nozzles - Use the minimum number of nozzles that provide uniform coverage.

Nozzle Orientation - Orienting nozzles so that the spray is released parallel to the

airstream produces larger droplets than other orientations and is the recommended practice. Significant deflection from horizontal will reduce droplet size and increase drift potential.

Nozzle Type - Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. Solid stream nozzles oriented straight back produce the largest droplets and the lowest drift.

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 2-10 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 spray drift.

Temperature And Humidity

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

Temperature Inversions

Applications should not occur during a temperature inversion because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning.

Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward 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).

Ground Equipment: To aid in reducing spray drift potential when making ground applications near susceptible crops or other desirable broadleaf plants, Triclopyr 4 should be applied through large droplet producing equipment, such as the Radiarc sprayer or in thickened spray

mixtures using an agriculturally registered drift control additive, or high viscosity invert systems. When using a spray thickening or inverting additive, follow all use directions and precautions on the product label. With ground equipment spray drift can be reduced by keeping the spray boom as low as possible; by applying 20 gallons or more of spray per acre; and by spraying when wind velocity is low (Follow State regulations). Do not apply with nozzles that produce a fine droplet spray. Keep operating spray pressures at the lower end of the manufacturer's recommended pressures for the specific nozzle type used. Low pressure nozzles are available from spray equipment manufacturers. Select nozzle pressures which provide adequate plant coverage, but minimize the production of fine spray particles. Avoid calm conditions which may be conducive to air inversions. In hand-gun applications, select the minimum spray pressure that will provide adequate plant coverage (without forming a mist). Do not apply with hollow cone-type insecticide or other nozzles that produce a fine-droplet spray. Do not use a mistblower.

Spray volume should be sufficient to obtain complete and uniform foliar coverage. For aerial application apply at least 2 gallons of total spray volume per acre. For ground application, apply 10 or more gallons of total spray volume per acre. Use higher spray volumes for ground or aerial application to ensure adequate coverage with increased depth and density of foliage, particularly for treatment of woody plants or as indicated in the "Treatment Recommendations" section of this label.

This product may be foliar applied by diluting with water or by preparing an oil-water emulsion. For woody plant control, an oil-water emulsion will perform more dependably under a broader range of conditions than a straight water dilution and is especially recommended for aerial applications.

Oil-Water Emulsions

Oil-water emulsions may be prepared using diesel fuel, fuel oil, or kerosene plus an emulsifier such as Sponto 712 or Triton X-100. Use a jar test to check spray mix compatibility before preparing oil-water emulsion sprays in the mixing tank.

Ground Application: Add oil to the spray mix at a rate of 5 to 10% of the total mix, up to a maximum of 1 gallon of oil per acre, using agricultural spray emulsifiers according to mixing instructions below.

Aerial Application: Use oil and water in the spray mixture in a 1:5 ratio (1 part oil to 5 parts water), up to a maximum of 1 gallon of oil per acre according to mixing instructions below.

Water Dilutions

For water dilutions, an agricultural surfactant at the manufacturer's recommended rate may be added to the spray mixture to provide improved wetting of foliage. To help minimize spray drift, a drift control and deposition aid cleared for application to growing crops is recommended.

Tank Mixing

Triclopyr 4 may be applied in tank mix combination with labeled rates of other herbicides provided (1) the tank mix product is labeled for the timing and method of application for the use site to be treated; and (2) tank mixing is not prohibited by the label of the tank mix product.

Tank Mixing Precautions:

- Read carefully and follow all applicable use directions, precautions, and limitations on the respective product labels.
- Do not exceed recommended application rates. If products containing the same active ingredient are tank mixed, do not exceed the maximum allowable active ingredient use rates.

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- For direct injection or other spray equipment where the product formulations will be mixed in undiluted form, special care should be taken to ensure tank mix compatibility.
- Always perform a (jar) test to ensure the compatibility of products to be used in tank mixture.

Tank Mix Compatibility Testing: A jar test is recommended prior to tank mixing to ensure compatibility of Triclopyr 4 and other herbicides or spray carriers. Use a clear glass quart jar with lid and mix the tank mix ingredients in their relative proportions. Invert the jar containing the mixture several times and observe the mixture for approximately 1/2 hour. If the mixture balls-up, forms flakes, sludges, jels, oily films or layers, or other precipitates, it is not compatible and the tank mix combination should not be used.

Mixing Order:

1. Add half the needed water to the mixing tank and start agitation.
2. Add water soluble herbicide (if used).
3. Prepare a premix of oil, emulsifier (if oil-water emulsion), and Triclopyr 4 plus other oil-soluble herbicide (if used), e.g. 2,4-D ester. Continue agitation and add premix to the spray tank. **Note:** Do not allow water or mixtures containing water to get into the premix or Triclopyr 4 since a thick "invert" (water in oil) emulsion may be formed that will be difficult to break. Such an emulsion may also be formed if the premix or Triclopyr 4 is put in the mixing tank before the addition of water.
4. Add the remaining water. Also during final filling of the tank add a drift control and deposition aid cleared for application to growing crops (if used), plus an agricultural surfactant (if a water dilution rather than an oil-water emulsion spray is used).

Mixing with Liquid Fertilizer for Broadleaf Weed Control

Triclopyr 4 may be combined with liquid nitrogen fertilizer suitable for foliar application to accomplish weed control and fertilization of grass pastures in one operation. Use Triclopyr 4 in accordance with recommendations for weed control in grass pastures as given on this label. Use liquid fertilizer at rates recommended by supplier or Extension Service Specialist. **Note:** Triclopyr 4 is not recommended for use with liquid fertilizer on woody plants (brush). Foliage burn caused by liquid fertilizer may reduce herbicide effectiveness on woody plants.

Compatibility with Liquid Fertilizer: Prior to mixing in spray tank, conduct a "jar test" for spray mixture compatibility by mixing each component in the required order and proportion in a clear glass jar. See procedure for Tank Mixing Compatibility Testing, above. A compatibility aid such as Unite or Compex may be needed in some situations. **Compatibility is best with straight liquid nitrogen fertilizer solutions. Mixing with N-P-K solutions or suspensions may not be satisfactory even with the addition of compatibility aid.** Premixing Triclopyr 4 with 1 to 4 parts water may help in difficult situations.

Fill in the spray tank about half-full with the liquid fertilizer, then add the herbicide with agitation and complete filling the tank with fertilizer. Apply immediately and continue agitation in the spray tank during application.

Precautions: Do not store liquid fertilizer spray mixtures. Application with liquid fertilizer during very cold weather (near freezing) is not advisable. The likelihood of mixing or compatibility problems with liquid fertilizer increases under cold conditions.

Note: Do not use broadcast spray equipment used for application of Triclopyr 4 for other applications to susceptible crops or desirable plants, or land planted to such plants, unless it has been determined that all phytotoxic herbicide residue has been removed by thorough cleaning of the equipment.

Oil Mixture Sprays for Basal Treatment: When preparing oil-based spray mixtures, use either diesel fuel, No. 1 or No. 2 fuel oil, kerosene or a commercially available basal oil.

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Substitute other oils or diluent's only as recommended by the oil or diluent's manufacturer. When mixing with a basal oil or other oils or diluents, read and follow the use directions and precautions on the manufacturer's product label. Add Triclopyr 4 to the required amount of oil in the spray tank or mixing tank and mix thoroughly. If the mixture stands over 4 hours, reagitiation is required.

High Volume Leaf-Stem Treatment: To minimize spray drift, keep sprays no higher than brush tops and keep spray pressures low enough to provide coarse spray droplets. A spray thickening agent may be used to reduce spray drift.

GRAZING AND HAYING RESTRICTIONS

Grazing or harvesting green forage:

- 1) Lactating dairy animals
 - Two quarts per acre or less: Do not graze or harvest green forage from treated area for 14 days after treatment.
 - Greater than 2 to 6 quarts per acre: Do not graze or harvest green forage until the next growing season.
- 2) Other livestock
 - Two quarts per acre or less: No grazing restrictions.
 - Greater than 2 to 6 quarts per acre: Do not graze or harvest green forage from treated area for 14 days after treatment.

Haying (harvesting of dried forage):

- 1) Lactating dairy animals
 - Do not harvest hay until the next growing season.
- 2) Other Livestock
 - Two quarts per acre or less: Do not harvest hay for 7 days after treatment.
 - Greater than 2 to 4 quarts per acre: Do not harvest hay for 14 days after treatment.
 - Greater than 4 quarts per acre: Do not harvest hay until the next growing season.

Slaughter Restrictions:

Withdraw livestock from grazing treated grass or consumption of treated hay at least 3 days before slaughter. This restriction applies to grazing during the season following treatment or hay harvested during the season following treatment.

PLANTS CONTROLLED BY TRICLOPYR 4

Woody Plant Species

Alder	Gallberry	Poison Oak
Arrowwood	Gorse	Poplar
Ash	Granjeno	Salmonberry
Aspen	Guajillo	Salt-bush(<i>Baccharis spp.</i>) ²
Bear Clover (bearmat)	Guara ²	Salt-cedar ¹
Beech	Hawthorn	Sassafras
Birch	Huisache (suppressium)	Scotch broom
Blackberry	Hazel	Sumac

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Blackbush	Hickory	Sweetbay magnolia
Blackgum	Hornbean	Sweetgum
Boxelder ¹	Kudzu ³	Sycamore
Brazilian pepper	Lantana ²	Tanoak
Buckthorn	Locust	Thimbleberry
Cascara	Madrone	Tree-of-heaven(Ailnthus) ¹
Ceanothus	Maples (except bigleaf and Vine ²)	Trumpet creeper ²
Cherry ²	Milkweed vine ²	Tulip poplar
Chinquapin	Mulberry	Twisted acacia
Choke Cherry	Oaks	Virginia creeper ²
Cottonwood	Osage orange	Waxmyrtle
Crataegus (hawthorn)	Peppervine ²	Wild rose
Dogwood	Persimmon	Willow
Douglas-fir	Pine	Willow primrose
Elderberry	Poison Ivy	Winged elm
Elm		

¹For best control, use either a basal bark or cut stump treatment.

²Basal or dormant stem applications only.

³For complete control, retreatment may be necessary.

Annual and Perennial Broadleaf Weeds Controlled

Black medic	Dog fennel	Purple loosestrife
Bull thistle	Field bindweed	Ragweed
Burdock	Goldenrod	Smartweed
Canada thistle	Ground ivy	Sweet clover
Chicory	Lambsquarters	Tropical soda apple
Cinquefoil	Lespedeza	Vetch
Clover	Matchweed	Wild carrot (Queen Anne's lace)
Creeping beggarweed	Mustard	Wild lettuce
Curly dock	Oxalis	Wild violet
Dandelion	Plantain	Yarrow

Table 1 (Maximum Application Rate): The following table is provided as a guide to the user to achieve the proper rate of Triclopyr 4 without exceeding the maximum use rate of 8 quarts per acre.

NOTE: See "GENERAL USE PRECAUTIONS" section to find maximum use rate listed by sites.

Spray Volume Per Acre	Quarts of Triclopyr 4 Per 100 Gallons of Spray (Not to Exceed 8 qts/Acre)
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400	2
300	2.7
200	4
100	8
50	16
20	40
10	80

APPLICATION METHODS AND TREATMENT RECOMMENDATIONS

Foliar Applications

Use Triclopyr 4 at rates of 1 to 8 quarts per acre to control broadleaf weeds and woody plants. In all cases use the amount specified in enough water to give uniform and complete coverage of the plants to be controlled. The recommended order of addition to the spray tank is water, spray thickening agent *(if used), surfactant (if used), additional herbicide (if used), and Triclopyr 4. If a standard agricultural surfactant is used, use at a rate of 1 to 2 quarts per acre. Use continuous adequate agitation.

Before using any recommended tank mixtures, read the directions and all precautions on both labels.

For best results applications should be made when woody plants and weeds are actively growing. When hard-to-control species such as Ash, Blackgum, Choke cherry, Elm, Maples (other than vine or big leaf), Oaks, Pines, or Winged elm are prevalent, and during applications made during late summer when the plants are mature, or during drought conditions, use the higher rates of Triclopyr 4 alone or in combination with Tordon* 101 Mixture herbicide.

When using Triclopyr 4 in combination with 3.8 pounds per gallon 2,4-D low volatile ester herbicide generally the higher rates should be used for satisfactory brush control. Use the higher dosage rates when brush approaches an average of 15 feet in height or when the brush covers more than 60% of the area to be treated. If lower rates are used on hard-to-control species, resprouting may occur the year following treatment.

On sites where easy to control brush species dominate, rates less than those recommended may be effective. Consult state or local extension personnel for such information.

FOLIAR TREATMENT WITH GROUND EQUIPMENT

High Volume Foliar Treatment

For control of woody plants, use Triclopyr 4 at the rate of 1 to 3 quarts per 100 gallons of spray mixture, or Triclopyr 4 at 1 to 3 quarts may be tank mixed with labeled rates of 2,4-D low volatile ester herbicide, Tordon 101 Mixture herbicide, or Tordon K herbicide and diluted to make 100 gallons of spray. Apply at a volume of 100 to 400 gallons of total spray per acre depending on size and density of woody plants. Coverage should be thorough to wet all leaves, stems, and root collars. See Table 1 for relationship between spray volume and

maximum application rate. When tank mixing, follow applicable use directions and precautions on each manufacturer's label.

Low Volume Foliar Treatment

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To control susceptible woody plants, mix up to 20 quarts of Triclopyr 4 in 10 to 100 gallons of finished spray. The spray concentration of Triclopyr 4 and total spray volume per acre should be adjusted according to the size and density of target woody plants and kind of spray equipment used. With low volume sprays, use sufficient spray volume to obtain uniform coverage of target plants including the surfaces of all foliage, stems, and root collars (See General Use Precautions). For best results, a surfactant should be added to all spray mixtures. Match equipment and delivery rate of spray nozzles to height and density of woody plants. When treating tall, dense brush, a truck mounted spray gun with spray tips that deliver up to 2 gallons per minute at 40 to 60 psi may be required. Backpack or other types of specialized spray equipment with spray tips that deliver less than 1 gallon of spray per minute may be appropriate for short, low to moderate density brush. See Table 1 for relationship between mixing rate, spray volume and maximum application rate.

Tank Mixing: As a low volume foliar spray, up to 12 quarts of Triclopyr 4 may be applied in tank mix combination with labeled rates of Tordon K or Tordon 101 Mixture in 10 to 100 gallons of finished spray.

BROADCAST APPLICATIONS WITH GROUND EQUIPMENT

Make application using equipment that will assure thorough and uniform coverage at spray volumes applied.

Woody Plant Control

Foliage Treatment: Use 4 to 8 quarts of Triclopyr 4 in enough water to make 5 or more gallons per acre of total spray, or Triclopyr 4 at 1-1/2 to 3 quarts may be combined with labeled rates of 2,4-D low volatile ester, Tordon 101 Mixture, or Tordon K in sufficient water to make 5 or more gallons per acre of total spray.

Broadleaf Weed Control

Use Triclopyr 4 at rates of 1 to 4 quarts in a total volume of 5 or more gallons per acre as a water spray mixture. Apply at any time weeds are actively growing. Triclopyr 4 at 0.25 to 3 quarts may be tank mixed with labeled rates of 2,4-D amine or low volatile ester, Tordon K, or Tordon 101 Mixture to improve the spectrum of activity. For thickened (high viscosity) spray mixtures, Triclopyr 4 can be mixed with diesel oil or other inverting agent. When using an inverting agent, read and follow the use directions and precautions on the product label.

AERIAL APPLICATION

Aerial sprays should be applied using suitable drift control (See "General Use Precautions").

Foliage Treatment (Utility and Pipeline Rights-of-Way)

Use 4 to 8 quarts of Triclopyr 4 alone, or 3 to 4 quarts Triclopyr 4 in a tank mix combination with labeled rates of 2,4-D low volatile ester, Tordon 101 Mixture or Tordon K and apply in a total spray volume of 10 to 30 gallons per acre. Use the higher rates and volumes when plants are dense or under drought conditions.

SPOT TREATMENT TO CONTROL CLUMPS OF RESPROUTING HARDWOODS SUCH AS BIG LEAF MAPLE USING A HOVERING HELICOPTER IN FORESTS

Stem Treatment Before Leaf-Out: Mix 1 to 2 gallons of Triclopyr 4 with about 20 gallons diesel oil and enough water to make 100 gallons of solution. Apply as an invert emulsion by means of a hovering helicopter equipped with a nozzle system to direct sufficient spray to cover the stems to the ground line of the sprouted trees, usually 3/4 to 1-1/2 gallon per clump.

Note: Conifers contacted by this spray may be seriously injured; in existing plantations,

drift control systems, such as invert emulsions, should be used to minimize injury to adjacent conifers. A dye or other marking system to designate treated trees may be used.

FOR "CHEMICAL MOWING" ON NON-CROPLAND SITES INFESTED WITH ANNUAL AND PERENNIAL BROADLEAF WEEDS OR WOODY PLANTS

Triclopyr 4 may be applied to the cut surfaces of weed or brush stubble under the deck of a rotary mower such as the Lucas "64" System or other Riverdale approved equipment that is designed to uniformly apply the herbicide. This method of application may be used for control of annual and perennial broadleaf weeds and for suppression and stem density reduction of woody plants that occur on rights-of-way, airport grounds, petroleum tank farms or other industrial sites. Apply when growing conditions are favorable and there is active plant growth. Follow directions on the label for Triclopyr 4 for approved sites, and weed species controlled or suppressed.

Broadleaf Weed Control: Apply at labeled rates for Triclopyr 4 under the section "Broadcast Applications with Ground Equipment - Broadleaf Weed Control". Apply the recommended rate in a minimum spray volume of 3 gallons per acre. Follow label recommendations for herbicides that may be applied in tank mix combination with Triclopyr 4 to improve weed control or broaden the spectrum of weeds controlled.

Woody Plant Control: For suppression and stem density reduction of woody species, use 3 to 6 quarts of Triclopyr 4 in a minimum spray volume of 5 gallons per acre. Follow label recommendations for herbicides that may be applied in tank mix combination with Triclopyr 4 to improve woody plant control or broaden the spectrum of woody plants controlled.

BASAL BARK AND DORMANT BRUSH TREATMENT

To control susceptible woody plants in rights-of-way, and other non-crop areas, and in forests and forest roadsides, use Triclopyr 4 in oil or oil-water mixtures prepared and applied as described below. When preparing mixtures, use as oils either a commercially available basal oil, diesel fuel, No. 1 or No. 2 fuel oil, or kerosene. Substitute other oils or diluents only as recommended by the oil or diluent's manufacturer. When mixing with a basal oil or other oils or diluents, read and follow the use directions and precautions on the product label prepared by the oil or diluent's manufacturer.

Oil Mixture Sprays

Add Triclopyr 4 to the required amount of oil in the spray tank or mixing tank and mix thoroughly. If the mixture stands over 4 hours, reagitation is required.

Oil Mixtures of Triclopyr 4 and Tordon K: Tordon K and Triclopyr 4 may be used in tank mix combination for basal bark treatment of woody plants. These herbicides are incompatible and will not form a stable mixture when mixed together directly in oil. Stable tank mixtures for basal bark application can be made if each product is first combined with a compatibility agent prior to final mixing in the desired ratio. (See product bulletin for mixing instructions.)

Oil-Water Mixture Sprays

First, premix the Triclopyr 4, oil and surfactant in a separate container. Do not allow any water or mixtures containing water to get into the Triclopyr 4 or the premix. Fill the spray tank about half full with water, then slowly add the premix. Fill the spray tank about half full with water, then slowly add the premix with continuous agitation and complete filling the tank with water. Continue moderate agitation.

Note: If the premix is put in the tank without any water, the first water added may form a thick "invert" (water in oil) emulsion which will be hard to break.

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Basal Bark Treatment

To control susceptible woody plants with stems less than 6 inches in basal diameter, mix 1 to 5 gallons of Triclopyr 4 in enough oil to make 100 gallons of spray mixture. Apply with knapsack sprayer or power spraying equipment using low pressure (20 to 40 psi). Spray the basal parts of brush and tree trunks to a height of 12 to 15 inches from the ground. Thorough wetting of the indicated area is necessary for good control. Spray until runoff at the ground line is noticeable. Old or rough bark requires more spray than smooth young bark. Apply at any time, including the winter months, except when snow or water prevent spraying to the ground line.

Low Volume Basal Bark Treatment

To control susceptible woody plants with stems less than 6 inches in basal diameter, mix 20 to 30 gallons of Triclopyr 4 in enough oil to make 100 gallons of spray mixture. Apply with a backpack or knapsack sprayer using low pressure and a solid cone or flat fan nozzle. Spray the basal parts of brush and tree trunks in a manner which thoroughly wets the lower stems, including the root collar area, but not to the point of runoff. Herbicide concentration should vary with size and susceptibility of species treated. Apply at any time, including the winter months, except when snow or water prevent spraying to the ground line.

Triclopyr 4 Plus Tordon K in Oil Tank Mix: Triclopyr 4 and Tordon K may be applied as a low volume basal bark treatment to improve control of certain woody species such as Ash, Elm, Maple, Poplar, Aspen, Hackberry, Oak, Oceanspray, Birch, Hickory, Pine, Tanoak, Cherry, Locust, Sassafras, and Multiflora rose. (See product bulletin for mixing instructions.)

Streamline Basal Bark Treatment (Southern States)

To control or suppress susceptible woody plants for conifer release, mix 20 to 30 gallons of Triclopyr 4 in enough oil to make 100 gallons of spray mixture. Apply with a backpack or knapsack sprayer using equipment which provides a directed straight stream spray. Apply sufficient spray to one side of stems less than 3 inches in basal diameter to form a treated zone that is 6 inches in height. When the optimum amount of spray mixture is applied, the treated zone should widen to encircle the stem within approximately 30 minutes. Treat both sides of stems which are 3 to 5 inches in basal diameter. Direct the spray at bark that is approximately 12 to 24 inches above ground. Pines (Loblolly, Slash, Shortleaf, and Virginia) up to 2 inches in diameter breast height (dbh) can be controlled by directing the spray at a point approximately 4 feet above ground. Vary spray mixture concentration with size and susceptibility of the species being treated. Best results are achieved when applications are made to young vigorously growing stems which have not developed the thicker bark characteristic of slower growing, understory trees in older stands. This technique is not recommended for scrub and live oak species, including Blackjack, Turkey, Post, Live, Bluejack and Laurel oaks, or Bigleaf maple. Apply from approximately 6 weeks prior to hardwood leaf expansion in the spring until approximately 2 months after leaf expansion is completed. Do not apply when snow or water prevent spraying at the desired height above ground level.

Low Volume Stem Bark Band Treatment (North Central and Lake States)

To control susceptible woody plants with stems less than 6 inches in basal diameter, mix 20 to 30 gallons of Triclopyr 4 in enough oil to make 100 gallons of spray mixture. Apply with a backpack or knapsack sprayer using low pressure and a solid cone or flat fan nozzle. Apply the spray in a 6 to 10 inch wide band that completely encircles the stem. Spray in a manner that completely wets the bark, but not to the point of runoff. The treatment band may be positioned at any height up to the first major branch. For best results apply the band as low as possible. Spray mixture concentration should vary with size and susceptibility of species to be treated. Applications may be made at any time, including winter months.

Thinline Basal Bark Treatment

To control susceptible woody plants with stems less than 6 inches in diameter, apply Triclopyr 4 either undiluted or mixed at 50 to 75% v/v with oil in a thin stream to all sides of the lower stems. The stream should be directed horizontally to apply a narrow band around

each stem or clump. Use a minimum of 2 to 15 milliliters of Triclopyr 4 or oil mixture with Triclopyr 4 to treat single stems and from 25 to 100 milliliters to treat clumps of stems. Use an applicator metered or calibrated to deliver the small amounts required.

Dormant Stem Treatment

Dormant stem treatments will control susceptible woody plants and vines with stems less than 2 inches in diameter. Plants with stems greater than 2 inches in diameter may not be controlled and resprouting may occur. This treatment method is best suited for sites with dense, small diameter brush. Dormant stem treatments of Triclopyr 4 can also be used as a chemical sidetrim for controlling lateral branches of larger trees that encroach onto roadside, utility, or other rights-of-way.

Mix 4 to 8 quarts of Triclopyr 4 in 2 to 3 gallons of crop oil concentrate or other recommended oil and add this mixture to enough water to make 100 gallons of spray solution. Use continuous adequate agitation. Apply with Radiarc, OC or equivalent nozzles, or handgun using 70 to 100 gallons of spray per acre to ensure uniform coverage of stems. Triclopyr 4 may be mixed with 4 quarts of Patron 170 herbicide to improve the control of black cherry and broaden the spectrum of herbicidal activity. In western states, apply anytime after woody

plants are dormant. In other areas apply anytime within 10 weeks of budbreak, generally February through April. Do not apply to wet or saturated bark as poor control may result.

Cut Stump Treatment

To control resprouting of cut stumps of susceptible species, mix 2 to 30 gallons of Triclopyr 4 in enough oil to make 100 gallons of spray mixture. Apply with a backpack or knapsack sprayer using low pressures and a solid cone or flat fan nozzle. Spray the root collar area, sides of the stump, and the outer portion of the cut surface including the cambium until thoroughly wet, but not to the point of runoff. Spray mixture concentration should vary with size and susceptibility of species treated. Apply at any time, including in winter months, except when snow or water prevent spraying to the ground line.

Treatment of Cut Stumps in Western States

To control resprouting of salt-cedar and other Tamarix species, Bigleaf maple, Tanoak, Oregon myrtle, and other susceptible species, apply undiluted Triclopyr 4 to wet the cambium and adjacent wood around the entire circumference of the cut stump. Treatments may be applied throughout the year; however, control may be reduced with treatment during periods of moisture stress as in late summer. Use an applicator which can be calibrated to deliver the small amounts of material required.

Note: All basal bark and dormant brush treatment methods may be used to treat susceptible woody species on range and permanent pasture land provided that no more than 1.5 quarts of Triclopyr 4 are applied per acre. Large plants or species requiring higher rates of Triclopyr 4 may not be completely controlled.

FOREST MANAGEMENT APPLICATIONS

For broadcast applications apply the recommended rate of Triclopyr 4 in a total spray volume of 5 to 25 gallons per acre by air or 10 to 100 gallons per acre by ground. Use spray volumes sufficient to provide thorough coverage of treated foliage. Use application systems designed to prevent spray drift to off-target sites. Nozzles or additives that produce larger droplets may require higher spray volumes to provide adequate coverage.

Plant Back Interval for Conifers: Conifers planted sooner than 1 month after treatment with Triclopyr 4 at less than 4 quarts per acre or sooner than 2 months after treatment at 4 to 6 quarts per acre may be injured. When tank mixtures of herbicides are used for forest site preparation, labels for all products in the mixture should be consulted and the longest recommended waiting period observed.

Broadcast Treatments for Forest Site Preparation (Not For Conifer Release)

Southern States Including Alabama, Arkansas, Delaware, Florida, Georgia, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, and Virginia: To control susceptible woody plants and broadleaf weeds, apply Triclopyr 4 at a rate of 4 to 8 quarts per acre. To broaden the spectrum of woody plants and broadleaf weeds controlled, apply 2 to 4 quarts per acre of Triclopyr 4 in tank mix combination with labeled rates of Tordon 101 Mixture or Tordon K. Tordon 101 Mixture and Tordon K are not registered for use in the states of California and Florida. Where grass control is also desired, Triclopyr 4, alone or in combination with Tordon K or Tordon 101 Mixture, may be tank mixed with labeled rates of other herbicides registered for grass control in forests. Use of tank mix products must be in accordance with the most restrictive of label limitations and precautions. No label application rates may be exceeded. Triclopyr 4 cannot be tank mixed with any product containing a label prohibition against such mixing.

In Western, Northeastern, North Central, and Lake States (States Not Listed Above As Southern States): To control susceptible woody plants and broadleaf weeds, apply Triclopyr 4 at a rate of 3 to 6 quarts per acre. To broaden the spectrum of woody plants and broadleaf weeds controlled, apply 1.5 to 3.0 quarts per acre of Triclopyr 4 in tank mix combination with labeled rates of Tordon 101 Mixture, Tordon K, or 2,4-D low volatile ester. Tordon 101 Mixture and Tordon K are not registered for use in the states of California and Florida. Where grass control is also desired, Triclopyr 4, alone or in combination with Tordon K or Tordon 101 Mixture, may be tank mixed with labeled rates of other herbicides registered for grass control in forests. When applying tank mixes, follow applicable use directions and precautions on each product label.

Applications for Site Preparation in Southern Coastal Flatwoods: To control susceptible broadleaf weeds and woody species such as Gallberry and Wax-myrtle, and for partial control of Saw-palmetto, apply 2 to 4 quarts per acre of Triclopyr 4. To broaden the spectrum of species controlled to include Fetterbush, Staggerbush, Titi, and grasses, apply 2 to 3 quarts per acre of Triclopyr 4 in tank mix combination with labeled rates of Arsenal Applicator's Concentrate herbicide. Where control of Gallberry, Wax-myrtle, broadleaf weeds, and grasses is desired, 2 to 3 quarts per acre of Triclopyr 4 may be applied in tank mix combination with labeled rates of Accord herbicide.

These treatments may be broadcast during site preparation of flat planted or bedded sites or, on bedded sites, applied in bands over the top of beds. For best results, make applications in late summer or fall. Efficacy may not be satisfactory when applications are made in early season prior to August.

Note 1: Do not apply after planting pines.

Note 2: Conifers planted sooner than one month after treatment with Triclopyr 4 at less than gallon per acre or sooner than two months after treatment at 1 to 2 gallons per acre may be injured. When tank mixtures of herbicides are used for forest site preparation, labels for all products in the mixture should be consulted and the longest recommended waiting period observed.

Applications for Conifer Release

Note: Applications for conifer release may cause temporary damage and growth suppression where contact with conifers occur; however, injured conifers should recover and grow normally. Over-the-top spray applications can kill pines.

Directed Sprays

To release conifers from competing hardwoods and brush such as Red maple, Sugar maple, Striped maple, Sweetgum, Red and White oaks, Ash, Hickory, Alder, Birch, Aspen, Pin cherry, Ceanothus spp., Blackberry, Chinquapin, and Poison oak, mix 4 to 20 quarts of Triclopyr 4 in enough water to make 100 gallons of spray mixture. This spray should be directed onto

foliage of competitive hardwoods using knapsack or backpack sprayers with flat fan nozzles or equivalent any time after the hardwoods and brush have reached full leaf size, but before autumn coloration. The majority of treated hardwoods and brush should be less than 6 feet in height to ensure adequate spray coverage. Care should be taken to direct spray solutions away from conifer foliage, particularly foliage of desirable pines. See Table 1 for relationship between mixing rate, spray volume and maximum application rate.

Broadcast Applications for Mid-Rotation Understory Brush Control in Southern Coastal Flatwoods Pine Stands (Ground Equipment Only) For control of susceptible species such as Gallberry and Wax-myrtle and broadleaf weeds, apply 2 to 4 quarts per acre of Triclopyr 4. To broaden the spectrum of woody plants controlled to include Fetterbush, Staggerbush, and Titi, apply 2 to 3 quarts per acre of Triclopyr 4 in tank mix combination with labeled rates of Arsenal Applicator's Concentrate. Saw-palmetto will be partially controlled by use of Triclopyr 4 at 4 quarts per acre or by mixtures of Triclopyr 4 at 2 to 3 quarts per acre in tank mix combination with labeled rates of either Arsenal Applicator's Concentrate or Escort herbicide.

These mixtures should be broadcast applied over target understory brush species, but to prevent injury to pines, make applications underneath the foliage of pines. It is recommended that sprays be applied in 30 or more gallons per acre of total volume. For best results, make applications in late summer or fall. Efficacy may not be satisfactory when applications are made in early season prior to August.

Broadcast Applications for Conifer Release in the Pacific Northwest and California

On Dormant Conifers Before Bud Swell (Excluding Pines): To control or suppress deciduous hardwoods such as Vine maple, Bigleaf maple, Alder, Scotch broom, or Willow before leaf-out or evergreen hardwoods such as Madrone, Chinquapin, and Ceanothus ssp., use Triclopyr 4 at 1 to 2 quarts per acre. Diluents used may be diesel or fuel oil. Or, water plus 1 to 2 gallons per acre of diesel oil or a suitable surfactant or oil substitute at manufacturer's recommended rates may be used.

On Conifer Plantations (Excluding Pines) After Hardwoods Begin Growth and Before Conifer Bud Break ("Early Foliar" Hardwood Stage): Use Triclopyr 4 at 1.0 to 1.5 quarts alone or plus 2,4-D low volatile ester herbicide in water carrier to provide no more than 3 pounds acid equivalent per acre from both products. After conifer bud break, these sprays may cause more serious injury to the crop trees. Use of a surfactant may cause unacceptable injury to conifers especially after bud break.

On Conifer Plantations (Excluding Pines) After Conifers Harden Off In Late Summer and While Hardwoods Are Still Growing Actively: Use Triclopyr 4 at rates of 1.0 to 1.5 quarts per acre alone or plus 2,4-D low volatile ester to provide no more than 3 pounds acid equivalent per acre from both products. Treat as soon after conifer bud hardening as possible so that hardwoods and brush are actively growing. Use of oil, oil substitute, or surfactant may cause unacceptable injury to the conifers.

Note: Sprays may cause discolored needles and temporary growth suppression of some conifers, but they should recover and grow normally.

Broadcast Applications for Conifer Release in the Eastern United States

To release Spruce, Fir, Red pine, and White pine from competing hardwoods such as Red maple, Sugar maple, Striped maple, Alder, Birch (white, yellow, and grey), Aspen, Ash, Pin cherry, and Rubus spp. and perennial and annual broadleaf weeds, use Triclopyr 4 at rates of 1.5 to 3.0 quarts per acre alone or plus 2,4-D amine or low volatile ester to provide no more than 4 pounds acid equivalent per acre from both products. Applications should be made in late summer or early fall after conifers have formed their overwintering buds and hardwoods are in full leaf and prior to autumn coloration.

Note: Sprays may cause discolored needles and temporary growth suppression of some conifers, but they should recover and grow normally.

Broadcast Applications for Conifer Release in the Lake States Region

To release Spruce, Fir and Red pine from competing hardwoods such as Aspen, Birch, Maple, Cherry, Willow, Oak, Hazel, and Rubus spp. and Perennial and annual broadleaf weeds, use Triclopyr 4 at rates of 1.5 to 3.0 quarts per acre. Applications should be made in late summer or early fall after conifers have formed their overwintering buds and hardwoods are in full leaf and prior to autumn coloration.

Rangeland and Permanent Grass Pasture

High-volume Foliar Treatment of Individual Plants Using Ground Equipment:

For control of susceptible woody plants, use Triclopyr 4 alone or in tank-mix combination at the recommended rate to make 100 gallons of spray mixture. To control a broader spectrum of woody plants and broadleaf weeds, Triclopyr 4 may be tank-mixed with recommended rates of other herbicides (see application rates table below). When tank-mixing, follow all applicable use directions, precautions, and limitations on the respective product labels. (See Tank-Mixing Precautions under "Mixing Directions".)

Application Rates per 100 Gallons of Spray

Triclopyr 4		Tank-Mix Product	Rate
1-2 qt	--	--	--
1-2 qt	plus	Grazon P+D herbicide	2 qt
1-2 pt	plus	2,4-D low volatile ester herbicide	1-2 qt
1-2 qt	plus	Tordon* 22K herbicide	1-2 qt
2 qt	plus	Reclaim* ¹ / ² herbicide	2 qt

¹Reclaim is registered for use only in Texas, Oklahoma and New Mexico.

²See directions for Mesquite control using high volume foliar (also called leaf spray) application" below.

Depending on the size and density of the woody plants involved, apply sufficient spray volume

to thoroughly wet all leaves, stems, and root collars. To minimize spray drift, select the minimum spray pressure that will provide adequate plant coverage without forming a mist and direct sprays no higher than tops of target woody plants. A drift control additive cleared for application to growing crops is recommended to reduce spray drift. Before using any recommended tank mixture read the directions and all use precautions on both labels.

For best results, foliar spray applications should be made when woody plants and weeds are actively growing. **Note:** See "Foliar Broadcast Treatment" section for information on environmental factors influencing control results as well as recommendations concerning application timing.

Mesquite control using high volume foliar (also called leaf spray) application:

For control of mesquite infestations of low to moderate density, Triclopyr 4 and Reclaim may be applied in tank-mixture to individual plants with backpack or hand-held sprayers or a vehicle-mounted sprayer with hand-held spray wand or spray gun. For individual plant treatment, use 2 quarts of Triclopyr 4 in combination with 2 quarts of Reclaim per 100

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gallons of total spray solution (1/2% v/v of each product). Apply in water or as an oil-water emulsion as described in "Mixing Directions". If using an oil-water emulsion, add the oil at a rate of 5% of the total spray volume. Apply as a complete spray-to-wet foliar application, including all leaves. Thorough coverage is necessary for good results, but it is not necessary to spray to the point of runoff. Do not apply when mesquite foliage is wet. The total amount of Reclaim applied should not exceed 1-1/3 pints per acre. For best results, follow information given below concerning effect of environmental conditions and application timing on control. This application method works best for brush less than 8 feet tall, since efficient treatment and thorough coverage of taller brush is difficult to achieve with this method. To minimize drift, select a spray nozzle and pressure that will provide good coverage while forming a coarse spray. Additionally, drift may be reduced by using the minimum pressure necessary to obtain plant coverage without forming a mist and by directing sprays no higher than tops of target plants. If desired, a spray dye may be added to the spray mixture to mark the treated plants.

FOLIAR BROADCAST TREATMENT USING AERIAL OR GROUND EQUIPMENT

Environmental conditions and application timing influence brush and weed control results.

General: For best results, foliar applications should be made when woody plants and weeds are actively growing. For woody species, make applications after the rapid growth period of early spring when leaf tissue is fully expanded and terminal growth has slowed. Brush regrowth should be at least 4 ft. in height prior to treatment to insure adequate foliage for herbicide absorption. Adequate soil moisture before and after treatment as well as the presence of healthy foliage at the time of application are important factors contributing to optimal herbicidal activity.

Mesquite: The herbicidal response of mesquite is strongly influenced by foliage condition, stage of growth and environmental conditions. For best results, apply when new growth foliage has turned from light to dark green, when the soil temperature is above 75°F at a depth of 12 to 18 inches, and soil moisture is adequate for plant growth. Application should be made within 60 days after the 75°F minimum soil temperature at the 12 to 18 inch depth has been reached. Product performance may be adversely affected if application is made before mesquite foliage has turned from light to dark green or if foliage has been injured or removed by late frost, insects, hail or plant diseases. Do not treat if mesquite exhibits new (light green) terminal growth in response to recent heavy rainfall during the growing season. Rate of soil warm-up at the 12 to 18-inch depth may vary with soil texture and drainage. Coarse-textured (sandy) soils warm up sooner than fine-textured (clay) soils and dry soils warm up more quickly than wet soils. Mesquite regrowth should be at least 4 ft. in height prior to treatment to insure adequate foliage for herbicide absorption.

Mesquite Only

Apply Triclopyr 4 at 1/2 to 1 pint per acre in combination with 2/3 to 1-1/3 pints per acre of Reclaim. See label for Reclaim for additional treatment recommendations and information on mesquite control. Apply aerially as a oil:water emulsion in 4 or more gallons total volume per acre or in 10 or more gallons total volume per acre using ground equipment. Use a maximum of 1 gallon of oil per acre for aerial or ground application.

Mesquite and Pricklypear Cactus

Where Pricklypear cactus is a target species in association with mesquite, apply a tank mix of 1/2 to 1 pint of Triclopyr 4 with 1 to 2 pints of Tordon 22K per acre. (The 2 pint per acre rate of Tordon 22K will provide a higher and more uniform plant kill of pricklypear.) Tordon 22K may also be applied in combination with Triclopyr 4 to control pricklypear while providing improved control of mesquite. See labels for Tordon 22K and Reclaim for additional information and treatment recommendations. Apply aerially as a oil:water emulsion in 4 or more gallons total volume per acre or in 10 or more gallons total volume per acre using ground equipment. If mesquite canopy is dense, use higher spray volumes. Use a maximum of 1 gallon of oil per acre for aerial or ground application.

South Texas Mixed Brush (Mesquite, Pricklypear Cactus, Blackbrush, Twisted Acacia and Granjeno)

Use 1 to 2 pints of Triclopyr 4 in a tank mix with 2 pints of Tordon 22K per acre where pricklypear is a problem or with 2/3 to 1-1/3 pints of Reclaim per acre where mesquite is the prevalent species. Triclopyr 4 will contribute to control of non-legume species such as granjeno and oaks. However, where woody legume species are predominate Tordon 22K at 2 pints per acre may be applied in combination with Reclaim at 2/3 to 1-1/3 pints per acre for improved control. See labels for Tordon 22K and Reclaim for additional information and recommendations. Apply aerially in a oil:water emulsion in 4 or more gallons total volume per acre or in 15 or more gallons total volume per acre using ground equipment. Use a maximum of 1 gallon of oil per acre for aerial or ground application. The use of an oil:water emulsion is critical and good spray coverage is essential for acceptable brush control.

Sand Shinnery Oak Suppression

In Texas, New Mexico and Oklahoma, apply Triclopyr 4 alone at a rat of 1/2 to 2 pints per acre for suppression of shinnery oak growing on sandy soils. Grass response following suppression may be impressive where rainfall is adequate. Grazing deferment following application together with proper grazing management is recommended to allow for the reestablishment of grass stands.

Post Oak and Blackjack - Regrowth Stands

Apply in the late spring (May) to early summer (June-July) when oak leaves are fully developed (expanded). Use 2.0 quarts of Triclopyr 4 alone or in tank mix combination with 0.5 to 1.0 pints of 2,4-D low-volatile ester herbicide per acre. Apply in an oil:water emulsion or water surfactant dilution (see mixing instructions) in sufficient total volume per acre to assure thorough coverage; usually 5 gallons per acre or more by fixed-wing aircraft or helicopter or 15 to 25 gallons per acre by ground equipment. Use a maximum of 1 gallon of oil per acre for aerial or ground application. Lower rates may be used for suppression only. Control will require at least 3 consecutive treatments.

Note: Regrowth plants have a large root mass relative to top growth when compared to undisturbed plants. In order for top growth to intercept and translocate enough herbicide to control the roots, broadcast treatment should be delayed until top growth is at least four feet tall.

High volume foliar treatment: For regrowth less than four feet tall, apply 2 quarts of Triclopyr 4 per 100 gallons of water and 2 quarts of Ag surfactant alone or in tank mix combination with 1 gallon of Grazon P+D or 1 quart of Tordon 22K. Apply as a high volume leaf-stem treatment to individual plants using ground equipment.

Post Oak and Blackjack Oak-Mature Stands

For control of mature stands (greater than 5 feet tall), apply Triclopyr 4 at 2 quarts per acre in late spring (May) to early summer (June-July) when oak leaves are fully developed (expanded). Understory species such as winged elm, buckbrush, tree huckleberry and ash occurring in some areas will not be controlled (only suppressed or defoliated) by Triclopyr 4 alone. Where these understory species occur, control may be improved by tank mixing 2 quarts of Triclopyr 4 with 1 quart of Tordon 22K or 4 quarts of Grazon P+D per acre. For best results, apply as a oil:water emulsion in a total volume of 5 gallons per acre or more by fixed-wing aircraft or helicopter.

Other Susceptible Woody Plants

(See Listing of Woody Plants Controlled by Triclopyr 4)

Use 2 to 4 pints of Triclopyr 4 alone or in combination with 2 to 3 quarts of 3.89 lb/gal 2,4-D low volatile ester or amine formulation. When difficult-to-control species such as

ash, choke cherry, elm, maple or oaks are prevalent, and during applications made when plants are mature late in the summer or during drought conditions, use the higher rates of Triclopyr 4, alone or with 2,4-D. Triclopyr 4 may also be applied in tank mixture with Grazon P+D or Tordon 22K for increased control of certain information and treatment recommendations. Apply aurally in 4 or more gallons total volume per acre or in 10 or more gallons total volume per acre using ground equipment. For best results on blackberry, apply during or after bloom. For management of kudzu, apply Triclopyr 4 at 1 quart per acre. Repeat application may be necessary to achieve desired level of control

Susceptible Broadleaf Weeds

(See Listing of Annual, Biennial and Perennial Broadleaf Weeds Controlled by Triclopyr 4)

General: Use Triclopyr 4 at 2 pints per acre in a water spray. Apply as a broadcast spray in a total volume of 10 or more gallons per acre by ground equipment or aurally in a total volume of 2 or more gallons per acre. Apply at anytime the weeds are actively growing. Triclopyr 4 at 1/2 to 3 pints may be tank-mixed with 1 to 2 quarts of 3.8 lb/gal 2,4-D amine or low volatile ester.

Recommendations for Specific Broadleaf Weeds:

Weeds Controlled	Rate per Acre	Specific Use Recommendations
sericea lespedeza	1 to 2 pt	For best results, apply after maximum foliage development in the late spring to early summer, but prior to bloom
sulfur cinquefoil	1 to 2 pt	For best results, apply to plants in the rosette stage
tropical soda apple	2 pt	Apply when tropical soda apple plants reach the first

flower stage. For best results, apply in a total spray volume of 40 gallons per acre using ground equipment. An agricultural surfactant may be added at the manufacturer's recommended rate to provide more complete wetting and coverage of the foliage. Spot treatments may be used to control sparse plant stands. For spot treatment use a 1 to 1.5% solution of Triclopyr 4 in water (1 to 1-1/2 gallons of Triclopyr 4 in 100 gallons total spray mixture) and spray the entire plant to completely wet the foliage.

In Florida, control of tropical soda apple may be improved by using the following management practices:

- Mow plants to a height of 3 inches every 50 to 60 days or whenever they reach flowering. Continue the mowing operation through April.
- In late May to June (50 to 60 days after the April mowing) apply Triclopyr 4A as a broadcast treatment as recommended above.
- Use spot treatment as recommended above to control any remaining plants or thin stands of plants that germinate following a broadcast treatment.

Individual Plant Treatment Non-Foliar Applications

Low Volume Basal Bark Treatment (Also called Stem Spray Method) Susceptible woody plants such as mesquite, hassock, red maple, red and white oak, birches and aspen, with stems less than 6 inches in basal diameter, can be controlled by low volume basal applications of Triclopyr 4 spray mixture. Mix 20 to 30 gallons of Triclopyr 4 Herbicide in enough oil to make 100 gallons of total spray mixture. Apply with a backpack or knapsack (but not with a mistblower) using low pressure and a solid cone or flat-fan nozzle. Spray the basal parts of the brush

and tree trunks to a height of 12 to 15 inches from the ground in a manner which thoroughly wets the lower stem, including the root collar area, but not to the point of runoff. Herbicide concentration should vary with size and susceptibility of species treated. Apply at any time, including the winter months, except when snow or water prevent spraying to the ground line.

Streamline Basal Bark Treatment

To control or suppress susceptible woody plants such as mesquite, hassock, red maple, white and red oak, elbowbush, greenbriar hackberry pricklyash, yaupon and wild grape, mix 25 to 30 gallons of Triclopyr 4 with 10% penetrant such as Cidekick in enough oil to make 100 gallons of spray mixture. Streamline basal bark treatments are most effective on stems less than 4 inches in basal diameter. Apply with a backpack or knapsack sprayer using equipment which provides a directed straight stream spray. Apply the spray in a 2 to 3 inch wide band to one side of stems less than 3 inches in basal diameter. Direct the spray to a point approximately 12 to 24 inches above the ground. Treat both sides of stems which are 3 or more inches in basal diameter. Better control is achieved when spray is applied to thin juvenile bark and above susceptibility of the brush being treated. Apply at any time, including winter months, except when snow or water prevents spraying to the desired height above the ground level. Note: Best results with some hardwood species occur when applications are made from approximately 6 weeks prior to leaf expansion in the spring until approximately 2 months after leaf expansions is completed.

Treatment of Cut Stumps in California

To control resprouting, apply undiluted Triclopyr 4 to wet the area adjacent to the cambium and bark around the entire circumference of freshly cut stumps.

Treatments may be applied throughout the year; however, control may be reduced with treatment during periods of moisture stress as in late summer. Stumps should be cut so that they are approximately level to facilitate uniform Triclopyr 4 coverage. Use an applicator which can be calibrated to deliver the small amounts of material required.

Cut Stump Treatment

To control resprouting of freshly cut stumps of susceptible species, mix 20 to 30 gallons of Triclopyr 4 in enough oil to make 100 gallons of spray mixture. Apply with a backpack or knapsack sprayer using low pressures and a solid cone or flat fan nozzle. Spray the sides of the stump and the outer portion of the cut surface, including the cambium in a manner which thoroughly wets the stem and root collar area, but not to the point of runoff. Spray mixture concentration should vary with the size and susceptibility of species treated. Apply at any time, including in winter months, except when snow or water prevent spraying to the ground line.

Dormant Stem Treatment

Mix 3 to 6 quarts of Triclopyr 4 in enough oil to make 100 gallons of spray. Apply with knapsack or power spraying equipment, using low pressure (20 to 40 psi). Treat anytime when brush is dormant and most of the foliage has dropped. Do not apply when snow or water prevent spraying to the ground line. Thoroughly wet the upper parts of the stems and use the remainder needed to wet the lower 12 to 15 inches above the ground to the point of run-off. For root suckering species such as sumac, sassafras and locust, also spray the ground under the plant to cover small root suckers which may not be visible above the soil surface. For oil-water mixture application, mix 6 quarts of Triclopyr 4, 25 gallons of oil and 1.5 gallons of an approved agricultural spray emulsifier such as Sponto 712 or Triton X-100 as indicated in the mixing directions. Treat as above.

Thinline Basal Bark Treatment

Control of susceptible woody plants such as red maple, blackberry, dogwood, red and white oak, with stems less than 6 inches in diameter, can be achieved with applications of undiluted Triclopyr 4 in a thin stream to all sides of the stems about 6 inches above the

base of the plants. The stream should be directed horizontally to apply a narrow band of Triclopyr 4 around each stem or clump. From 2 to 15 ml of chemical is required for treatment of single stems and from 25 to 100 ml to treat clumps of stems. Use an applicator metered or calibrated to deliver the small amounts required.

Growing Point and Leaf Base (Crown) Treatment of Yucca

Prepare a 2% v/v solution of Triclopyr 4 in diesel or fuel oil (13 oz of Triclopyr 4 in 5 gallons of spray mixture). Thoroughly wet the center of the plant including growing point and leaf bases to the soil surface. Complete coverage of leaves is not necessary.

Treatment of Conservation Reserve Program (CRP) Acres (Established Permanent Grass Stands)

Use Triclopyr 4 on CRP acres only after perennial grasses are well established (see precaution for newly seeded grasses under "GENERAL USE PRECAUTIONS").

Restrictions: When applying to CRP lands, follow all applicable state and federal regulations. Follow the most severe grazing restriction imposed by the pesticide label or by the USDA Acreage Conservation Reserve Program. After that time period, follow local (CRP) guidelines damage or loss of existing legumes or other desirable broadleaf plants cannot be tolerated.

Broadcast Application (Ground or Air): For control of listed broadleaf weeds, apply Triclopyr 4 as a broadcast spray at 1 to 2 pints/acre or up to 1-1/2 quarts per acre for deep-rooted perennial broadleaf and susceptible woody species. Use a total spray volume of 10 or more gallons per acre for ground broadcast or 2 or more gallons per acre by air. For other woody plant treatment methods, including high volume foliar, basal bark or cut stump treatment, refer to the preceding "Application Methods and Treatment Recommendations" for appropriate use directions.

STORAGE AND DISPOSAL

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

PESTICIDE STORAGE: Store above 28°F or agitate before use.

PESTICIDE DISPOSAL: Open dumping is prohibited. If container is damaged or if pesticide has leaked, contain all spillage. Absorb and clean up all spilled material with granules or sand. Place in a closed, labeled container for proper disposal. Improper disposal of excess pesticide, spray mixtures, 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: 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 are also disposable by incineration, or if allowed by State and local authorities, by burning. If burned, stay out of smoke.

CONTAINER DISPOSAL FOR REFILLABLE CONTAINERS: Close all openings which have been opened during use and replace all caps. Contact Riverdale Chemical's Customer Service Department at 1-708/754-3330, to arrange for return of the empty refillable container.

WARRANTY

Seller warrants that the product conforms to its chemical description and is reasonably fit

for the purpose stated on the label when used in accordance with directions under normal conditions of use, but neither this warranty nor any other warranty of merchantability or fitness for a particular purpose, expressed or implied, extends to the use of this product contrary to label instructions, or under abnormal conditions or under conditions not reasonably foreseeable to seller, and buyer and the limit of liability of any such use. The exclusive remedy of user or buyer and the limit of liability of Riverdale Chemical Company is the purchase price paid for the quantity of product involved.

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