



U.S. ENVIRONMENTAL PROTECTION AGENCY

Office of Pesticide Programs
Registration Division (7505P)
Ariel Rios Building
1200 Pennsylvania Ave., NW
Washington, D.C. 20460

EPA Reg. Number: 66222-220
Date of Issuance: JUL 27 2010

NOTICE OF PESTICIDE:

X Registration
Reregistration
(under FIFRA, as amended)

Term of Issuance: Conditional

Name of Pesticide Product: MANA 2,4-D Ester 6

Name and Address of Registrant (include ZIP Code):

Makhteshim Agan of North America, Inc.
4515 Falls of Neuse Road, Suite 300
Raleigh, NC 27609

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

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

This product is 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 review of your product when the Agency requires all registrants of similar products to submit data. If required, failure to submit acceptable data to fulfill these requirements may result in registration cancellation in accordance with FIFRA section 6(e).
2) Submit final printed labeling incorporating all changes specified in this Notice before releasing the product for shipment.
3) Add the phrase "EPA Reg. No. 66222-220" to the labeling and assure that the EPA Establishment Number and Net Contents are also on the label.
4) CHANGE "INERT" to "OTHER" in the INGREDIENT statement on page 1 for it to read "OTHER INGREDIENTS.....11.6%"
5) Assure the following text is in the Directions for Use section of the label:

"Use of this product in certain portions of California, Oregon, and Washington is subject to the January 22, 2004 Order for injunctive relief in Washington Toxics Coalition, et.al. v. EP, C01-0132C, (W.D. WA). For further information, please refer to http://www.epa.gov/espp/litstatus/wtc/qs-as.htm".

SEE NEXT PAGE FOR ADDITIONAL COMMENTS

Signature of Approving Official: Kathryn V. Montague
Product Manager 23
Herbicide Branch
Registration Division (7505P)

[Handwritten signature of Kathryn V. Montague]

Date: JUL 27 2010

6) Delete the following paragraph from page 2 that appears under the Engineering Controls Statements header and again at the bottom of the page that reads “For containers of 5 gallons or more: A mechanical system (such as probe and pump) must be used for transferring the contents of this container. If the contents of a non-refillable pesticide container 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.”

7) The Personal Protective Equipment requirements at the top of page 2 should read as follows:

“All mixers, loaders, applicators, flaggers, and other handlers must wear:

- Long-sleeved shirt and long pants
- Shoes and socks, plus
- Chemical resistant gloves when applying with any handheld nozzle or equipment, mixing, loading, cleaning up spills or equipment, or otherwise exposed to the concentrate.
- Chemical resistant apron when mixing or loading, cleaning up spills or equipment, or otherwise exposed to the concentrate.

See engineering controls for additional requirements.”

8) Per the RED, the bullets in the USER SAFETY RECOMMENDATIONS box on page 2 should read:

“Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. If pesticide gets on skin, wash immediately with soap and water.
- 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.”

9) Delete the redundant text appearing at the bottom of page 2 and at the top of page 3 that reads: “Pilots must use an enclosed cockpit that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides (40 CFR 170.240 (d) (4-6)].”. This language appears under the ENGINEERING CONTROL STATEMENT header.

10) The NON-AGRICULTURAL USE REQUIREMENTS on page 3 must appear in one box, not in two separate boxes.

11) Change “GENERAL” to “PRODUCT” in the header at the bottom of page 3 for it to read “PRODUCT INFORMATION”.

12) Per the RED, replace the current the SPRAY DRIFT MANAGEMENT section on pages 4-5 with the following text:

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“SPRAY DRIFT MANAGEMENT

A variety of factors including weather conditions (e.g., wind direction, wind speed, temperature, relative humidity) and method of application (e.g., ground, aerial, airblast) can influence pesticide drift. The applicator must evaluate all factors and make appropriate adjustments when applying this product.

Droplet Size

When applying sprays that contain 2,4-D as the sole active ingredient, or when applying sprays that contain 2,4-D mixed with active ingredients that require a Coarse or coarser spray, apply only as a Coarse or coarser spray (ASAE standard 572) or a volume mean diameter of 385 microns or greater for spinning atomizer nozzles.”

“When applying sprays that contain 2,4-D mixed with other active ingredients that require a Medium or more fine spray, apply only as a Medium or coarser spray (ASAE standard 572) or a volume mean diameter of 300 microns or greater for spinning atomizer nozzles.

Wind Speed

Do not apply at wind speeds greater than 15 mph. Only apply this product if the wind direction favors on-target deposition and there are not sensitive areas (including, but not limited to, residential areas, bodies of water, known habitat for nontarget species, nontarget crops) within 250 feet downwind. If applying a Medium spray, leave one swath unsprayed at the downwind edge of the treated field.

Temperature Inversions

If applying at wind speeds less than 3 mph, the applicator must determine if: a) conditions of temperature inversion exist, or b) stable atmospheric conditions exist at or below nozzle height. Do not make applications into areas of temperature inversions or stable atmospheric conditions.

Susceptible Plants

Do not apply under circumstances where spray drift may occur to food, forage, or other plantings that might be damaged or crops thereof rendered unfit for sale, use or consumption. Susceptible crops include, but are not limited to, cotton, okra, flowers, grapes (in growing stage), fruit trees (foliage), soybeans (vegetative stage), ornamentals, sunflowers, tomatoes, beans, and other vegetables, or tobacco. Small amounts of spray drift that might not be visible may injure susceptible broadleaf plants.

Other State and Local Requirements

Applicators must follow all state and local pesticide drift requirements regarding application of 2,4-D herbicides. Where states have more stringent regulations, they must be observed.

Equipment

All aerial and ground application equipment must be properly maintained and calibrated using appropriate carriers or surrogates.

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Additional requirements for aerial applications:

The boom length must not exceed 75% of the wingspan or 90% of the rotor blade diameter.

Release spray at the lowest height consistent with efficacy and flight safety. Do not release spray at a height greater than 10 feet above the crop canopy unless a greater height is required for aircraft safety. This requirement does not apply to forestry or rights-of-way applications.”

When applications are made with a crosswind, the swath will be displaced downwind. The applicator must compensate for this by adjusting the path of the aircraft upwind.”

Additional requirements for ground boom application:

“Do not apply with a nozzle height greater than 4 feet above the crop canopy.”

“2,4-D esters may volatilize during conditions of low humidity and high temperatures. Do not apply during conditions of low humidity and high temperatures.”

13) Change “recommended” to “specified” in the fifth sentence of second paragraph under the GENERAL INFORMATION header on page 3 for the sentence to read “For less susceptible species and under conditions where control is more difficult, use higher specified rates.”

14) Change “recommendations” to “specifications” in the last sentence of the second paragraph under the GENERAL INFORMATION header starting at the bottom of page 3 for the sentence to read “Consult your State Agricultural Experiment stations or Extension Service Weed Specialists for specifications from this label that best fit local conditions.”

15) Change “recommended” to “specified” in the second bullet in the middle of page for the sentence to read “Do not exceed specified application rates. Do not tank mix.....”.

16) Change “recommendations” to “directions” on page 6 under the Mixing with Liquid Nitrogen Fertilizer header for the sentence to read “Use MASA 2,4-D Ester 4 in accordance with directions for these crops provided in this label.”

17) Change “recommended” to “specified” under Spray Volume on page 7 for the sentence to read “For broadcast application, apply the specified rate of this product in a spray volume of 2 or more gallons per acre.....”

18) Change “recommended” to “specified” in the Application Rates section on page 7 for the sentence to read “Generally, lower rates in specified rate ranges will be satisfactory for more sensitive weed species, when weeds.....”

19) Change “recommended” to “specified” under Application Rates on page 7 for the sentence to read “Use higher rates in the specified rate range for less sensitive species and under less favorable growing conditions.”

20) The maximum allowable application rate and maximum allowable rate per crop cycle must be listed as pints, pounds, or gallons of formulated product per acre, not just as pounds acid equivalent per acre.

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21) Per the 2,4-D RED, the following restrictions must be on the product label and **any conflicting text must be removed from the label:**

a) In the **CEREAL GRAINS (WHEAT, BARLEY, MILLET, OATS, RYE)** section on page 9 the following must be addressed:

1. The restriction statement "Do not apply more than 2 1/3 pt/acre of MANA 2,4-D Ester 6 per use season." must be changed to read "Do not apply more than 2 1/2 pt/acre (1.75 lbs ae/acre) of MANA 2,4-D Ester 6 per crop cycle".

2. The following restrictions must also be added to this section:

"Postemergence:

Limited to one postemergence application per crop cycle.
Maximum of 1.8 pt/acre (1.25 lbs ae/acre) per application.

Preharvest:

Limited to one preharvest application per crop cycle.
Maximum of 0.7 pt/acre (0.5 lbs ae/acre) per application."

b) In the **CORN (FIELD CORN, POPCORN AND SWEET CORN)** section on page 10, the following must be addressed:

1. **Corn, field and pop** restrictions:

Per the RED, the restriction statement "Do not apply more than 4.0 pt/acre of MANA 2,4-D Ester 6 per use season." must be changed to read "Do not apply more than 4.3 pt/acre (3.0 lbs ae/acre) of MANA 2,4-D Ester 6 per crop cycle".

Per the RED, the following restrictions for corn, field and pop must also be added to the label:

"Preplant or preemergence:

Limited to one preplant or preemergence application per crop cycle.
Maximum of 1.4 pt/acre (1.0 lb ae/acre) per application.

Postemergence:

Limited to one postemergence application per crop cycle.
Maximum of 0.7 pt/acre (0.5 lb ae/acre) per application.

Preharvest:

Limited to one preharvest application per crop cycle.
Maximum of 2.1 pt/acre (1.5 lbs ae/acre) per application."

2. The following restrictions for **corn, sweet** must be addressed:

Per the RED, the restriction statement "Do not apply more than 2.0 pt/acre of MANA 2,4-D Ester 6 per use season." must be changed to read "Do not apply more than 2.1 pt/acre (1.5 lbs ae/acre) of MANA 2,4-D Ester 6 per crop cycle".

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Per the RED, the following restrictions for corn, sweet must also be added to the label:

“Do not use treated crop as fodder for 7 days following application.

Preplant or preemergence:

Limited to one preplant or preemergence application per crop cycle.
Maximum of 1.4 pt/acre (1.0 lb ae/acre) per application.

Postemergence:

Limited to one postemergence application per crop cycle.
Maximum of 0.7 pt/acre (0.5 lb ae/acre) per application.”

c) In the **FALLOWLAND AND CROP STUBBLE** section on page 11, the following must be addressed:

“Do not apply more than 2.9 pt/acre (2.0 lbs ae/acre) of MANA 2,4-D Ester 6 per application.”

Per the RED, the following restrictions for fallowland and crop stubble must also be added to the label: “Limited to 2 applications per year.”

d) In the **POTATOES (FRESH MARKET ONLY)** section on page 12, the following must be added:

“Maximum of 0.1 pt/acre (0.07 lb ae/acre) per application.”

e) In the **SORGHUM** section the following must be added to the label:

“Do not apply more than 0.7 pt/acre (0.5 lb ae/acre) per application.”

“Limited to 1 application per crop cycle.”

f) In the **SOYBEANS** section, assure the following item is addressed:

Per the RED, the restriction statement “Do not apply more than 1 1/3 pt/acre of MANA 2,4-D Ester 6 per use season” must be changed to read “Do not apply more than 1.4 pts/acre (1.0 lb ae/acre) of MANA 2,4-D Ester 6 per crop cycle.”

g) In the **FORESTRY** section, add the following text

Maximum of 5.8 pts/acre (4.0 lbs ae/acre) per application”

Per the RED, the following restrictions for forestry must also be added to the restrictions for FORESTRY:

“Basal Spray, Cut Surface - Stumps, and Frill:

Limit of one basal spray or cut surface application per year.

Maximum of 8.0 lbs ae per 100 gallons of spray solution.

Injection:

Limit to one injection application per year.

Maximum of 2 ml of 4.0 lbs ae formulation per injection site.”

h) Per the RED, in the **RANGELAND, ESTABLISHED GRASS PASTURES NOT IN AGRICULTURAL PRODUCTION** section on page 15-16 assure the following restrictions are on the product label:

“Postemergence:

Limited to 2 applications per year.

Maximum of 2.9 pts/acre (2.0 lbs ae/acre) per application.

If grass is to be cut for hay, Agricultural Use Requirements for the Worker Protection Standard are applicable.”

i) Per the RED, in the **NON-CROPLAND** section, assure the following restrictions are on the product label:

“Postemergence (annual and perennial weeds):

Limited to 2 applications per year.

Maximum of 2.9 pt/acre (2.0 lbs ae/acre) per application.

Postemergence (woody plants):

Limited to 1 application per year.

Maximum of (5.8 pt/acre) 4.0 lbs ae/acre per year.

Applications to non-cropland areas are not applicable to treatment of commercial timber or other plants being grown for sale or other commercial use, or for commercial seed production, or for research purposes.”

j) Per the RED, in the **TURF/GRASSES GROWN FOR SEED OR SOD** section, add the following restrictions to the product label:

“Limited to 2 applications per year.

Maximum of 2.9 pts/acre (2.0 lbs ae/acre) per application.”

k) Per the RED, in the **ORNAMENTAL TURF** section, the following restrictions must be addressed”

Change “Do not apply more than 2 pt/acre of MANA 2,4-D Ester 6 per application.” to “Do not apply more than 2.1 pts/acre (1.5 lbs ae/acre) of MANA 2,4-D Ester 6 per application.”

22) Per the Label Review Manual, change the “STORAGE” header to “PESTICIDE STORAGE” in the STORAGE AND DISPOSAL box on page 19.

23) NOTE: While no additional data is being requested at this time, marketing claims made on the pesticide label must be substantiated by data maintained in your files. If data supporting marketing claims made on the product label is not available then those claims must be removed.

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

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MANA 2,4-D Ester 6

Concentrated – Effective – Low Volatile

Contains 2 –Ethylhexyl Ester of 2,4-D

For selective control of many broadleaf weeds in certain crops, including, cereal grains (wheat, barley, millet, oats and rye), corn (field corn, popcorn and sweet corn), fallow land and crop stubble, potatoes, sorghum (grain and forage sorghum), and soybeans (preplant burndown application only), forests, rangeland and established grass pastures, including Conservation Reserve Program (CRP) acres, non-cropland, grasses grown for seed or sod, and ornamental turf.

ACTIVE INGREDIENT

2,4-Dichlorophenoxyacetic Acid, 2-Ethylhexyl Ester* 88.4%

INERT INGREDIENTS:..... 11.6%

TOTAL 100.0%

*2,4-Dichlorophenoxyacetic Acid Equivalent: 59.2% - 5.5 lb/gal

ACCEPTED
with COMMENTS
In EPA Letter Dated:
JUL 27 2010
Under the Federal Insecticide, Fungicide, and Rodenticide Act as amended, for the pesticide registered under EPA Reg. No.

KEEP OUT OF REACH OF CHILDREN
CAUTION

PA Reg. No. 66222-xxx

EPA Establishment No.

Manufactured for:

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

66222-220

NET CONTENTS: ___ Gallons

FIRST AID	
IF SWALLOWED:	<ul style="list-style-type: none"> • 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 the poison control center or doctor. • Do not give anything by mouth to an unconscious person.
IF IN EYES:	<ul style="list-style-type: none"> • Hold eye open and rinse slowly and gently with water for 15-20 minutes. • Remove contact lenses, if present, after the first 5 minutes; then continue rinsing eye. • Call a poison control center or doctor for treatment advice.
Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact PROSAR at 1-877-250-9291 for emergency medical treatment information.	

PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS AND DOMESTIC ANIMALS
CAUTION

Prolonged or frequent repeated skin contact may cause allergic reactions in some individuals. Harmful if swallowed. Causes moderate eye irritation. Avoid contact with skin, eyes, or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco. Wear protective eyewear.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

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

All mixers, loaders, applicators, flaggers, and other handlers must wear:

- Long-sleeved shirt and long pants
- Shoes plus socks
- Chemical-resistant gloves, when applying postharvest dips or sprays to citrus, applying with any handheld nozzle or equipment, mixing or loading, cleaning up spills or equipment, or otherwise exposed to the concentrate.
- Chemical resistant apron when applying postharvest dips or sprays to citrus, mixing or loading, cleaning up spills or equipment, or otherwise exposed to the concentrate.

See **ENGINEERING CONTROLS STATEMENTS** for additional requirements.

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

ENGINEERING CONTROLS STATEMENTS

For containers of 5 gallons or more: A mechanical system (such as probe and pump) must be used for transferring the contents of this container. If the contents of a non-refillable pesticide container 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.

Pilots must use an enclosed cockpit that meets the requirements listed in the Worker Protections Standard (WPS) for agricultural pesticides [40 CFR 170.240 (d) (4-6)].

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.

ENVIRONMENTAL HAZARDS

This product may be toxic to fish and aquatic invertebrates. Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark except as noted on appropriate labels. Drift or runoff may be hazardous to aquatic organisms in water adjacent to treated areas. Do not contaminate water when disposing of equipment wash waters or rinsate.

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. Application around a cistern or well may result in contamination of drinking water or groundwater.

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 groundwater contamination.

For containers of 5 gallons or more: A mechanical system (such as probe and pump) must be used for transferring the contents of this container. If the contents of a non-refillable pesticide container 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.

Pilots must use an enclosed cockpit that meets the requirements listed in the Worker Protections Standard

(WPS) for agricultural pesticides (40 CFR 170.240 (d) (4-6)].

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 regulation.

AGRICULTURAL USE REQUIREMENTS

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

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

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

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

NON-AGRICULTURAL USE REQUIREMENTS

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

Entry Restrictions for Non-WPS Uses: When this product is applied to rangeland and established pastures not harvested for hay or seed: non-cropland areas, ornamental turf or grown for sod or seed, and when applied by tree injection method only in forest sites, do not enter or allow people or pets to enter the treated area until sprays have dried.

GENERAL INFORMATION

MANA 2,4-D Ester 6 herbicide is intended for selective control of many broadleaf weeds in certain crops, including, cereal grains (wheat, barley, millet, oats and rye), corn (field corn, popcorn and sweet corn), fallow land and crop stubble, potatoes, sorghum (grain and forage sorghum), and soybeans (preplant burndown application only), forests, rangeland and established grass pastures including Conservation Reserve Program (CRP) acres, non-cropland, grasses grown for seed or sod, and ornamental turf.

Apply MANA 2,4-D Ester 6 as a water or oil-water spray during warm weather when weeds or woody plants are actively growing. Application under drought conditions will often give poor results. Use low spray pressure to minimize drift. Generally, the lower dosages recommended on this label will be satisfactory for young, succulent growth of susceptible weed species. For less susceptible species and under conditions where control is more difficult, use higher recommended rates. Deep-rooted perennial weeds such as Canada thistle and field bindweed and many woody plants usually require repeated applications for satisfactory control. Consult your State Agricultural Experiment stations or Extension Service Weed Specialists for

recommendations from this label that best fit local conditions.

USE PRECAUTIONS AND RESTRICTIONS

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

Excessive amounts of 2,4-D in the soil may temporarily inhibit seed germination and plant growth.

SPRAY DRIFT MANAGEMENT

A variety of factors including weather conditions, (e.g., wind direction, wind speed, temperature, relative humidity) and method of application (e.g., ground, aerial, airblast, chemigation) can influence pesticide drift. The applicator must evaluate all factors and make appropriate adjustments when applying this product. Spray drift produced during application is the responsibility of the applicator and care should be taken to minimize off-target movement of spray during application. A drift control agent suitable for agricultural use may be used with this product to aid in reducing spray drift. If used, follow all use recommendations and precautions on the product label.

Do not apply where spray drift may occur to food, forage, or other plantings that might be damaged or crops thereof rendered unfit for sale, use consumption. Do not apply MANA 2,4-D Ester 6 directly to, or otherwise permit contact with cotton, okra, flowers, fruit trees, grapes (in growing stage), ornamentals, soybeans (vegetative stage), sunflowers, tomatoes, beans, and other vegetables, tobacco or other desirable plants that are susceptible to 2,4-D herbicides. Do not permit spray mist containing 2,4-D to contact susceptible plants since even very small quantities of the spray, which may not be visible, can cause severe injury during both active growth and dormant periods. Do not use in greenhouses. At high temperatures vapors from this injure susceptible plants growing nearby. Avoid product volatilization that may occur when applying, 2,4-D esters during conditions of low humidity an high temperatures.

Ground Equipment: All aerial and ground application equipment must be properly maintained and calibrated using appropriate carriers or surrogates. Spray drift can be lessened by keeping the spray boom as low as possible, with a nozzle height not greater than 4 feet above the crop canopy; by applying 10 gallons or more of spray per acre; by using no more than 20 pounds spraying pressure and large droplet producing nozzle tips; by spraying when wind velocity is low; and by stopping all spraying when wind exceeds 15 miles per hour. Only apply this product if the wind direction favors on-target deposition and there are not sensitive areas (including but not limited to, residential areas, bodies of water, known habitat for non-target species, non-target crops) within 250 feet downwind. If applying a Medium spray, leave one swath unsprayed at the downwind edge of the treated field.

Droplet Size: Do not apply with hollow cone-type insecticide or other nozzles that produce a fine-droplet spray. For medium or more fine spray: apply only as a Medium or coarser spray (ASAE standard 572) or a volume mean diameter of 300 microns or greater for spinning atomizer nozzles. For coarse spray: apply only as a Coarse or coarser spray (ASAE standard 572) or a volume mean diameter of 385 microns or greater for spinning atomizer nozzles.

Temperature Inversions: When wind speed less than 3 mph, do not make applications if conditions of temperature inversion exist, or stable atmospheric conditions exist at or below nozzle height.

Avoid Movement of Treated Soil: Avoid conditions under which soil from treated areas may be moved or blown to areas containing susceptible plants. Wind-blown dust containing 2,4-D may produce visible symptoms when deposited on susceptible plants, however, serious plant injury is unlikely. To minimize potential movement of 2,4-D on wind-blown dust, avoid treatment of powdery dry or light sandy soils until soil is settled by rainfall or irrigation or irrigate soon after application.

Other State and Local Requirements: Applicators must follow all state and local pesticide drift requirements regarding application of 2,4-D herbicides. Where states have more stringent regulations, they must be observed.

SPRAY DRIFT MANAGEMENT - AERIAL APPLICATION

The following additional drift management requirements must be followed to avoid off-target drift movement from aerial applications. These requirements do not apply to forestry or rights of way applications, public health

uses or to applications using dry formulations. The applicator should be familiar with and take into account the information covered in the following Aerial Drift Advisory Information section.

Aerial Drift Advisory Information

Importance of 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 Inversion section of this label).

Controlling Droplet Size:

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

Pressure-Use the lower spray pressures recommended for the nozzle. Higher pressure reduces droplet size and does not improve canopy penetration. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.

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

Nozzle Orientation-Orienting nozzles so that the spray is released backwards, parallel to the airstream will produce larger droplets than other orientations. Significant deflection from the horizontal will reduce droplet size and increase drift potential.

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

Boom Length-The boom length must not exceed 75% of the wingspan or 90% of the rotor blade diameter.

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 drift.

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

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

smoke generator, Smoke that layers and moves laterally in a connected cloud (under low wind conditions) indicates an inversion, while smoke that moves upwards and rapidly dissipates indicates good vertical air mixing.

Sensitive Areas: The pesticide should only be applied when the potential for drift to adjacent sensitive areas (e.g., residential areas, bodies of water, known habitat for threatened or endangered species, non-target crops) is minimal (e.g., when wind is blowing away from the sensitive areas).

MIXING INSTRUCTIONS

1. Fill the spray tank about 1/2 full with water, then add the required amount of MANA 2,4-D Ester 6 with agitation, and finally the rest of the water.

Note: MANA 2,4-D Ester 6 in water forms an emulsion, which tends to separate unless agitation is maintained.

2. If oil is added, first mix the MANA 2,4-D Ester 6 and the oil and then add this mixture to the water.

However, with adequate agitation, the oil can be added after MANA 2,4-D Ester 6 is mixed in the water.

3. If straight oil is used, a solution is formed and separation does not occur. Do not allow any water to get into the oil-herbicide mixture to avoid formation of an invert emulsion.

Note: Adding oil, wetting agent, or other surfactant to the spray mixture may increase effectiveness on weeds, but also may reduce selectivity in crops resulting in crop damage.

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. Do not tank mix with another pesticide product that contains the same active ingredient as this product unless the label of either tank mix partner specifies the maximum dosages that may be used.

Tank Mix Compatibility Testing: A jar test is recommended prior to tank mixing to ensure compatibility of this product and other pesticides. 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 with Liquid Nitrogen Fertilizer

This product may be combined with liquid nitrogen fertilizer suitable for foliar application to accomplish broadleaf weed control and fertilization of corn, small grains or pastures in a single operation. Use MANA 2,4-D Ester 6 in accordance with recommendations for these crops provided in this label. Use liquid fertilizer at rates recommended by the supplier or Extension Service Specialist. Test for mixing compatibility by mixing spray ingredients in correct proportions in a clear glass jar before mixing in spray tank. A compatibility aid such as Unite or Compex may be needed in some situations. Compatibility is best with liquid fertilizer solutions containing only nitrogen. Mixing with N-P-K solutions may not be satisfactory, even with the addition of a compatibility aid. Pre-mixing MANA 2,4-D Ester 6 with 1 to 4 parts water may help in situations when mixing difficulty occurs.

Sprayer Clean-Out

To avoid injury to desirable plants, equipment used to apply this product should be thoroughly cleaned before re-use or applying other chemicals.

1. Rinse and flush application equipment thoroughly after use at least three times with water. Dispose of all rinse water by application to treatment area or apply to non-cropland area away from water supplies.
2. During the second rinse, add 1 qt of household ammonia for every 25 gallons of water. Circulate the solution through the entire system so that all internal surfaces are contacted (15-20 min). Let the solution stand for several hours, preferably overnight.
3. Flush the solution out of the spray tank through the boom.

4. Rinse the system twice with clean water, recirculating and draining each time.
5. Remove nozzles and screens and clean separately.
6. If equipment is to be used to apply another pesticide or agricultural chemical to a 2,4-D susceptible crop, additional steps may be required to remove all traces of 2,4-D, including cleaning of disassembled parts and replacement of hoses or other fittings that may contain absorbed 2,4-D.

APPLICATION INSTRUCTIONS

Spray Volume: Apply with calibrated air or ground equipment using sufficient spray volume to provide adequate coverage of target weeds or as otherwise directed in specific use directions. For broadcast application, apply the recommended rate of this product in a spray volume of 2 or more gallons per acre by air and 10 or more gallons per acre for ground equipment. Use low-pressure sprays to minimize drift. Where states have regulations, that specify minimum spray volumes, they should be observed. In general, spray volume should be increased as crop canopy, height and weed density increase in order to obtain adequate spray coverage. **Do not apply less than 2 gallons total spray volume per acre.**

Application Rates: Generally, lower rates in recommended rate ranges will be satisfactory for more sensitive weeds species, when weeds are small, and when environmental conditions are favorable for rapid growth. Use higher rates in the recommended rate range for less sensitive species and under less favorable growing conditions. For crop uses, do not mix with oil or other adjuvants unless specifically recommended on this label. Deep-rooted perennial weeds such as Canada thistle and field bindweed and many woody plants usually require repeated applications for effective control.

Spot Treatments

To prevent misapplication, spot treatments should be applied with a calibrated boom or with hand sprayers using a fixed spray volume per 1,000 sq ft as indicated below.

Hand-Held Sprayers: Hand-held sprayers may be used for spot applications of MANA 2,4-D Ester 6. Care should be taken to apply the spray uniformly and at a rate equivalent to a broadcast application. Application rates in the table are based on the application rate for an area of 1,000 sq ft. Mix the amount of MANA 2,4-D Ester 6 (fl oz or ml) corresponding to the desired broadcast rate in 1 to 3 gallons of spray. To calculate the amount of MANA 2,4-D Ester 6 required for larger areas, multiply the table value (fl oz or ml) by the thousands of sq ft to be treated. An area of 1000 sq ft is approximately 10.5 X 10.5 yards (strides) in size.

Rate Conversion Table for Spot Treatment:

Label Broadcast Rate (pt/acre)							
1/3	1/2	2/3	1	1 1/3	2	2 2/3	5 1/3
Equivalent Amount of MANA 2,4-D Ester 6 per 1000 sq ft							
1/8 fl oz * (3.7 ml)	1/5 fl oz (5.9 ml)	1/4 fl oz (7.4 ml)	3/8 fl oz (11 ml)	1/2 fl oz (15 ml)	3/4 fl oz (22 ml)	1 fl oz (30ml)	2 fl oz (60 ml)

Conversion factors: 1 pt - 16 fl oz; 1fl oz = 29.6 (30) ml

Band Application: MANA 2,4-D Ester 6 may be applied as a band treatment. Use the formulas below to determine the appropriate rate and volume per treated acre.

$$\frac{\text{Band width in inches}}{\text{Row width in inches}} \times \text{Broadcast rate per acre} = \text{Band rate per treated acre}$$

$$\frac{\text{Band width in inches}}{\text{Row width in inches}} \times \text{Broadcast volume per acre} = \text{Band volume per treated acre}$$

WEEDS CONTROLLED

Annual or Biennial Weeds

beggarticks ¹
 bittercress, smallflowered²
 bitterweed
 broomweed, common ¹
 burdock, common
 buttercup, smallflowered^{1, 2}
 carpetweed
 cinquefoil, common²
 cinquefoil, rough ²
 cocklebur, common
 coffeeweed
 copperleaf, Virginia ²
 croton, Texas
 croton, woolly
 flixweed
 galinsoga
 geranium, Carolina ²
 hemp, wild
 horseweed (marestail) ²
 jewelweed
 jimsonweed
 knotweed²
 kochia
 lambsquarters, common
 lettuce, prickly ^{1, 2}
 lettuce, wild
 lupines
 mallow, little ¹
 mallow, Venice ¹
 marshelder
 morningglory, annual
 morningglory, ivy
 morningglory, woolly

mousetail ²
 mustards (except blue mustard)
 parsnip, wild
 pennycress (fanweed)
 pepperweeds (*Lepidium* spp.)^{1, 2}
 pigweeds (*Amaranthus* spp.) ¹
 poorjoe
 primrose, common
 purslane, common ²
 pusley, Florida
 radish, wild
 ragweed, common
 ragweed, giant
 rape, wild
 rocket, yellow
 salsify, common ¹
 salsify, western ¹
 shepherdspurse
 sicklepod
 smartweed (annual species)^{1, 2}
 sneezeweed, bitter
 sowthistle, annual
 sowthistle, spiny
 spanishneedles
 sunflower
 sweetclover
 tansymustard
 thistle, bull
 thistle, musk ¹
 thistle, Russian (tumbleweed) ¹
 velvetleaf
 vetches

Perennial Weeds

Alfalfa ^{1, 2}
 artichoke, Jerusalem ¹
 aster, many-flower ¹
 Austrian fieldcress ¹
 bindweed (hedge, field and European) ^{1, 2}
 blue lettuce
 blueweed, Texas
 broomweed
 bullnettle ^{1, 2}
 carrot, wild ¹
 catnip

evening primrose, cutleaf ²
 garlic, wild ¹
 hawkweed, orange ¹
 healal
 ironweed, western ²
 ivy, ground ¹
 Jerusalem-artichoke
 loco, bigbend
 nettles (including stinging) ¹
 onion, wild ¹
 pennywort
 plantains

chicory
 clover, red ^{1, 2}
 coffeeweed
 cress, hoary ¹
 dandelion ¹
 docks ¹
 dogbanes ¹
 goldenrod

ragwort, tansy ¹
 sowthistle, perennial
 thistle, Canada ^{1, 2}
 vervains ¹
 wormwood

¹ These weeds are only partially controlled and may require repeat applications and/or use of higher recommended rates of this product even under ideal conditions of application.

² This product may not be used to control this weed species in the state of California.

CROP USES

Agricultural Use Requirements for Crops: For the following crop uses, follow PPE and Re-entry instructions in the "Agricultural Use Requirements" section of this label.

**CEREAL GRAINS (WHEAT, BARLEY, MILLET, OATS, RYE)
 (Not Underseeded with Legumes)**

Crop/Application Timing	MANA 2,4-D Ester 6 (pt/acre)	Specific Use Directions
Wheat, Barley, Millet, Rye Annual and biennial broadleaf weeds Perennial broadleaf weeds	1/3 to 1 1/3 ¹ 2/3 to 1 1/3 ¹	Apply after crop is fully tillered, but before boot stage of growth (usually 4 to 8 inches tall) but not forming joints in the stem. Do not apply before tillering or from early boot through the milk stage of growth.
Oats (Spring Seeded) (Fall Seeded Southern)	1/3 1/2 to 1 ¹	Apply after crop is fully tillered, but before boot stage of growth (usually 4 to 8 inches tall) and weeds are small. Do not apply before tillering or from early boot through the milk stage of growth. Do not apply during or immediately following cold weather.
Preharvest application (all cereals)	2/3	Apply using air or ground equipment to control weeds that could interfere with harvest, or to suppress perennial weeds. Apply when grain is in dough stage. Do not apply from early boot through the milk stage of growth.

¹ Use the lower rate in the rate range if small annual or biennial weeds are the major problem. Use the higher rate if perennial weeds or annual or biennial weeds are present which are considered to be hard-to-kill as determined by local experience. Higher rates increase the risk of crop injury and should be used only where weed control justifies such risk. Do not apply MANA 2,4-D Ester 6 at the crop seedling stage of growth. Consult state agricultural experiment station or extension service weed specialists for recommendations or suggestions to fit local conditions.

Restrictions:

- **Preharvest Interval:** Do not harvest within 14 days of application.
- Do not apply more than 2 1/3 pt/acre of MANA 2,4-D Ester 6 per use season.
- Use 2 or more gallons of spray solution per acre.

CORN (FIELD CORN, POPCORN AND SWEET CORN)

Application Timing/ Stage of Growth	MANA 2,4-D Ester 6 (pt/acre)	Specific Use Directions
Preplant (Burndown) Preemergence (Field corn, popcorn, and sweet corn)	2/3 to 1 1/3	General: For best results, growth conditions should be favorable for active weed growth. Use high rate in rate range for less susceptible weeds, cover crops such as alfalfa, weeds in advanced stages of development, or under less favorable growth conditions. Preplant: Apply 7 to 14 days before planting corn to control emerged broadleaf weed seedlings or existing cover crops. Preemergence: Apply any time after planting, but before corn emerges to control broadleaf weed seedlings or existing cover crops. Do not use on light sandy soils.
Postemergence (Field corn, popcorn, and sweet corn) Annual broadleaf weeds Crop up to 8 inches tall Crop 8 inches tall to tasseling (directed spray only) Perennial broadleaf weeds	1/3 to 2/3 2/3 2/3	Apply when weeds are small and corn is less than 8 inches tall (to top of canopy). If corn is more than 8 inches tall, use drop nozzles to keep spray off foliage. Treat perennial weeds when they are in bud to bloom stage. Do not tank mix with atrazine, oil or other adjuvants. Do not apply from tasseling to hard dough stage. Note: Corn treated with 2, 4-D may become temporarily brittle. Wind or cultivation may cause stem breakage during the period of time that corn is brittle. Sweet Corn: To minimize potential for crop injury, use only lowest rate in rate range.
Preharvest (Field corn or popcorn only)	up to 2	Apply after corn is in hard dough (or denting) stage. Do not apply to sweet corn.

Precautions:

- Preplant or preemergence applications to light sandy soils is not recommended.
- Corn hybrids vary in tolerance to 2,4-D. Some are easily injured. Apply only to varieties know to be tolerant to 2,4-D. Consult the seed company or your Agricultural Experiment Station or Extension Service Weed Specialist for this information.
- **Note:** Corn treated with 2,4-D may exhibit stem brittleness for 8-10 days following application. During this period, the crop is more susceptible to stem breakage from cultivation or wind.

Restrictions (Field Corn and Popcorn):

- **Preharvest interval:** Do not harvest for grain or fodder within 7 days after application.
- Do not apply more than 4.0 pt/acre of MANA 2,4-D Ester 6 per use season.
- Use 2 or more gallons of spray solution per acre.

Restrictions (Sweet Corn):

- **Preharvest interval:** Do not harvest ears within 45 days after application.
- Do not make a postemergence application any less than 21 days after a prior application.
- Do not apply more than 2.0 pt/acre of MANA 2,4-D Ester 6 per use season.
- Use 2 or more gallons of spray solution per acre.

FALLOWLAND AND CROP STUBBLE

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Fallowland is idle land, postharvest to crops or between crops.

Type of Weeds	MANA 2,4-D Ester 6 (pt/acre)	Specific Use Directions
Annual broadleaf weeds	2/3 to 1 1/3	Use lower rate in rate range when weeds are small (2 to 3 inches tall) and actively growing. Use a higher rate range when weeds are larger and under less favorable growth conditions.
Biennial broadleaf weeds	1 1/3 to 2 2/3	Apply when musk thistles or other biennial species are in the seedling to rosette stage and before development of flower stalks. The lower rate can be used in the spring during the rosette stage. Use the highest rate in the fall or after flower stalks have developed.
Perennial broadleaf weeds	1 1/3 to 2 2/3	Apply when perennial weeds are in bud to early bloom stage or while in good vegetative growth.
Wild garlic and onion in crop stubble	2 2/3	Apply to new regrowth of wild garlic or onion that occurs in the fall after harvest of other crops.

Precaution: For best weed control results, do not cultivate for at least 2 weeks after application or until top growth is dead.

Restrictions:

- **Preharvest interval:** Do not cut forage or hay within 7 days of application.
- Do not apply within 30 days of a previous application.
- Do not apply more than 2 2/3 pt/acre of MANA 2,4-D Ester 6 per use season.

Planting in Treated Areas

Labeled Crops: Within 29 days after an application of this product, plant only those crops listed on this or other registered 2,4-D labels. Follow more stringent limitations, if any, provided in directions for specific crops. Labeled crops may be at risk of crop injury or loss if planted soon after application, especially during the first 14 days. Degradation factors described below should be considered in weighing this risk.

Other Crops: All other crops may be planted 30 or more days after application without concern for illegal residues in the planted crop. However, under certain conditions, there may be a risk of injury to susceptible crops. Degradation factors described below should be considered in weighing this risk. Under normal conditions, any crop may be planted without risk of injury if at least 90 days of soil temperatures above freezing have elapsed since application.

Degradation Factors: When planting into treated areas, the risk of crop injury is less if lower rates of product were applied and conditions following application have included warm, moist soil conditions that favor rapid breakdown of 2,4-D. Risk is greater if higher rates of product were applied and soil temperatures have been cold and/or soils have been excessively wet or dry in the days following application. Consult your local agricultural extension service or information about susceptible crops and typical conditions in your area.

POTATOES (FRESH MARKET ONLY)

Application Timing/ Stage of Growth	MANA 2,4-D Ester 6	Specific Use Directions
Postemergence	1/10 pt (1.6 oz)/acre	Make first application when potatoes are in the pre-bud stage (about 7 to 10 inches high) and make a second application about 10 to 14 days later.

Restrictions:

- **Preharvest interval:** Do not harvest within 45 days of application.
- Do not exceed two applications per crop.
- Do not apply more than 0.14 lbs. a.e. (1/5 pt/acre) of MANA 2,4-D Ester 6 per growing season.

SORGHUM (GRAIN SORGHUM (MILO) AND FORAGE SORGHUM)

Application Timing/ Stage of Growth	MANA 2,4-D Ester 6 (pt/acre)	Specific Use Directions
Postemergence* Crop 6-8 inches tall Crop 8-15 inches tall (directed spray only)	1/3 to 2/3 1/2 to 2/3	Apply when sorghum is 6 to 15 inches tall. If sorghum is more than 8 inches tall (top of canopy), use drop nozzles to keep spray off foliage. Do not use with oil or other adjuvants. Do not treat during boot, flowering or dough stage.

Precautions:

- **Note:** Temporary crop injury can be expected under conditions of high soil moisture and high air temperatures. If it is necessary to apply MANA 2,4-D Ester 6 under these conditions, use no more than 1/2 pint per acre.
- **Do not apply during boot, or later stages of growth.**
- Sorghum hybrids vary in tolerance to 2,4-D. Some are easily injured. Apply only to varieties known to be tolerant to 2,4-D. Consult the seed company or your agricultural experiment station or extension service weed specialist for this information.

Restrictions:

- **Preharvest interval:** Do not harvest grain for 30 days after application.
- Do not permit meat or dairy animals to consume treated crop as fodder or forage within 30 days after application.
- Do not apply more than 2/3 pt/acre of MANA 2,4-D Ester 6 per use season.
- Use 2 or more gallons of spray solution per acre.

SOYBEANS – FOR USE IN CROP RESIDUE MANAGEMENT SYSTEMS.

(Preplant Burndown Application Only)

Application Timing	MANA 2,4-D Ester 6 (pt/acre)	Specific Use Directions
Preplant (Burndown)	1/2 to 2/3	Apply not less than 7 days before planting soybeans. See Use Precautions and Restrictions below.
	2/3 to 1 1/3	Apply not less than 15 days before planting soybeans. See Use Precautions and Restrictions below.

General Use Directions: Use MANA 2,4-D Ester 6 to control emerged broadleaf weeds or existing cover crops. For best results, apply when weeds are small and actively growing. Use the higher rate in the respective rate range for larger weeds and when perennials are present. Compatible crop oil concentrates, agricultural surfactants and fluid fertilizers approved for use on growing crops may be added to spray mixtures to increase the herbicidal effectiveness on certain weeds. Read and follow all directions and precautions on this label and on the label of each product added to the spray mixture.

Use Precautions, Restrictions and Limitations:

Important Notice: Unacceptable injury to soybeans planted in treated fields may occur. Whether or not soybean injury occurs and the extent of such injury will depend on weather (temperature and rainfall) from herbicide application until soybean emergence and agronomic factors such as the amount of weed vegetation and previous crop residue present at the time of application. Injury is more likely under cool rainy conditions and where there is less weed vegetation and crop residue present.

- Do not disturb treated soil through tillage between application and planting of soybeans.
- Do not use on sandy soils with less than 1.0% organic matter.
- In treated fields, plant soybean seed as deep as practical, but not less than 1.0 inch deep. Adjust the planter, if necessary, to ensure that planted seed is adequately covered.
- Do not make more than one application per season regardless of the application rate used.
- **Do not apply MANA 2,4-D Ester 6 as a preplant application in soybeans unless you are prepared to accept the results of soybean injury, including possible stand loss and/or yield reduction.**
- During the growing season following application, do not replant treated fields with crops other than those labeled for use with MANA 2,4-D Ester 6.
- Do not apply more than 1 1/3 pt/acre of MANA 2,4-D Ester 6 per use season.
- Use 2 or more gallons of spray solution per acre.

FORESTRY, RANGELAND, ESTABLISHED PASTURE, AND NON-CROPLAND USES

Agricultural Use Requirements for Forests (Except Tree Injection Use): For use in forests, follow PPE and Reentry instructions in the "Agricultural Use Requirements" section under the "Directions for Use" heading of this label

Agricultural Use Requirements for Rangeland, Pasture, Forest (Tree Injection Only) and Non-cropland Areas: When this product is applied to rangeland and established pastures not harvested for hay or seed; non-cropland areas, and when applied by tree injection in forest sites, follow reentry requirements given in the "Non-Agricultural Use Requirements" section under the "Directions for Use" heading of this label.

FORESTRY USES

Forest site preparation, forest roadsides, brush control, established conifer release (including Christmas trees and reforestation areas)

Treatment Site Method of Application	MANA 2,4-D Ester 6	Specific Use Directions
Annual Weeds	1 1/3 to 2 2/3 pt/acre	Apply when weeds are small and growing actively before the bud stage. Apply when biennial and perennial species are in the seedling to rosette stage and before flower stalks appear. For difficult to control perennial broadleaf weeds and woody species, use up to 2 2/3 qt of MANA 2,4-D Ester 6 and 1 to 4 qt of Garlon 3A herbicide per acre. For conifer release, make application in early spring before budbreak of conifers when weeds are small and actively growing.
Biennial and perennial broadleaf weeds and susceptible woody plants	2 2/3 to 5 1/3 pt/acre	

Spot Treatment to control broadleaf weeds	See Instructions for "Spot Treatment"	Note: To control broadleaf weeds in small areas with a hand sprayer, use an application rate equivalent to the recommended broadcast rate and spray to thoroughly wet all foliage. See rate conversion table and instructions for "Spot Treatment" and use of hand-held sprayers under "Application Instructions".
Conifer Release: Species such as white pine, ponderosa pine, jack pine, red pine, black spruce, white spruce, red spruce, and balsam fir	1 to 2 qt/acre	To control competing hardwood species such as alder, aspen, birch, hazel and willow, apply from mid to late summer when growth of conifer trees has hardened off and woody plants are still actively growing. Apply with ground or air equipment, using sufficient spray volume to ensure complete coverage. Because this treatment may cause occasional conifer injury, do not apply if such injury cannot be tolerated.
Directed Spray: Conifer plantations including pine	2 2/3 qt/100 gal	Apply when brush or weeds are actively growing by directing the spray so as to avoid contact with conifer foliage and injurious amounts of spray. Apply in oil, oil-water, or water carrier in a spray volume of 10 to 100 gallons per acre.
Basal Spray (May also be used in rangeland, pastures and noncropland)	5 1/3 qt/100 gal	Thoroughly wet the base and root collar of all stems until the spray begins to accumulate around the root collar at the ground line. Wetting stems also with the mixture may aid in control.
Surface of Cut Stumps (May also be used in rangeland, pastures, and noncropland)	or 1.75 fl oz/gal of water	Apply as soon as possible after cutting trees. Thoroughly soak the entire stump with the 2,4-D mixture including cut surface, bark and exposed roots.
Frill and Girdle (May also be used in rangeland, pastures, and noncropland)		Cut frills (overlapping V-shaped notches cut downward through the bark in a continuous ring around the base of the tree) using an axe or other suitable tool. Saturate the freshly cut frills with the 2,4-D mixture.
Tree Injection Application (May also be used in rangeland, pastures, and noncropland)	(1 to 2 ml per injection site)	To control and prevent resprouting of unwanted hardwood trees such as elm, hickory, oak, and sweetgum in forests and other non-crop areas, apply by injecting at a rate of 1 ml of undiluted MANA 2,4-D Ester 6 per inch of trunk diameter as measured at breast height (DBH), approximately 4 1/2 ft above the ground. Injection sites, however, should be as close to the root collar as possible and the injection bit must penetrate the inner bark. Applications may be made throughout the year, but for best results apply between May 15 and October 15. Maples should not be treated during the spring sap flow. For hard to control species such as ash, maple, and dogwood use 2 ml of undiluted MANA 2,4-D Ester 6 per injection site or double the number of 1 ml injections. Note: No Worker Protection Standard worker entry restrictions or worker notification requirements apply when this product is directly injected into agricultural plants.

Precautions and Restrictions:

- Do not allow sprays to contact conifer shoot growth (current year's new growth) or injury may occur.
- Do not apply to nursery seedbeds.

- For conifer release, do not use on plantations where pine or larch are among the desired species.
- **Grazing and Haying Restrictions:** If grazing or haying is anticipated, do not apply more than 2 2/3 pt/acre of MANA 2,4-D Ester 6 per application. Do not harvest forage or hay from treated areas for 7 days after application.
- For broadcast applications, do not apply more than 5 1/3 pt/acre of MANA 2,4-D Ester 6 per 12-month period.

RANGELAND, ESTABLISHED GRASS PASTURES (INCLUDING PERENNIAL GRASSLANDS NOT IN AGRICULTURAL PRODUCTION SUCH AS CONSERVATION RESERVE PROGRAM ACRES)

Target Weeds or Woody Plants	MANA 2,4-D Ester 6 (pt/acre)	Specific Use Directions
Annual broadleaf weeds Biennial and perennial broadleaf weeds	1 1/3 1 1/3 to 2 2/3	For best results, apply when weeds are small and growing actively before the bud stage. Apply when musk thistles or other biennial species are in the seedling to rosette stage and before flower stalks appear. Refer to the "Weeds Controlled" section for a listing of susceptible weed species and weeds that may be only partially controlled and require repeat applications and/or use of higher recommended rates, even under ideal conditions of application.
Spot Treatment to control broadleaf weeds	See Instructions for "Spot Treatment"	Note: To control broadleaf weeds in small areas with a hand sprayer, use an application rate equivalent to the broadcast rate recommended for this treatment site and spray to thoroughly wet all foliage. See rate conversion table and instructions for "Spot Treatment" and use of hand-held sprayers under "Application Instructions".
Tree Injection Application		See instructions for tree injections application in "Forestry Uses" section.
Wild garlic and wild onion	2 2/3	Make three applications (fall-spring-fall or spring-fall-spring) starting in late fall or early spring.
Broadleaf weed control in newly sprigged coastal bermudagrass	1 1/3 to 2 2/3	Applications may be made either preemergence of postemergence. Follow "Specific Use Directions" for annual, biennial and perennial broadleaf weed control above.
Sand shinnery oak Sand sagebrush	1 1/3	Sand shinnery oak: Apply by aircraft between May 15 and June 15. Sand sagebrush: Apply by ground or aircraft when foliage is fully expanded and plants are actively growing. Use a 1:4 oil-water emulsion as carrier and a spray volume of 3 to 5 gallons per acre.
Big sagebrush Rabbitbrush	4	Apply by ground or aircraft when foliage is fully expanded and plants are actively growing. Use a 1:4 oil-water emulsion as carrier and a spray volume of 3 to 5 gallons per acre. Retreatment may be needed.

Chamise, manzanita, buckbrush, coastal sage, coyotebrush, and chaparral species	2 2/3	Apply by ground or aircraft when foliage is fully expanded and plants are actively growing. Use water or 1:4 oil-water emulsion as carrier and a spray volume of 5 to 10 gallons per acre. Retreatment may be needed.
Southern wild rose Broadcast application Spot treatment	up to 2 2/3 2/3 gal/100 gal of spray	Broadcast: Apply in a spray volume of 5 or more gallons per acre by aircraft or 10 or more gallons per acre by ground equipment. Spot treatment: Apply when foliage is well developed. Thorough coverage is required. Use 2/3 gallon of MANA 2,4-D Ester 6 plus 4 to 8 fluid ounces of an agricultural surfactant per 100 gallons of water. Two or more treatments may be required. Do not exceed 2 2/3 pt per acre per application.
CRP Acres	For program lands such as CRP, consult program rules to determine whether grass or hay may be used. The more restrictive requirements of the program rules or this label must be followed.	

Precautions and Restrictions:

- Do not use on bentgrass, alfalfa, clover, or other legumes.
- Do not use on newly seeded areas until grass is well established.
- Do not use from early boot to milk stage where grass seed production is desired.
- Do not apply within 30 days of a previous application.
- **Grazing and Haying Restrictions:** In grazed areas, do not apply more than 2 2/3 pt/acre of MANA 2,4-D Ester 6 per application. Do not harvest forage or hay from treated areas for 7 days after application.
- Do not apply more than 5 1/3 pt/acre of MANA 2,4-D Ester 6 per use season.

NON-CROPLAND AREAS

Such as fencerows, hedgerows, roadsides, rights-of way, utility power lines, railroads, airports and other non-crop areas

Treatment Site Method of Application	MANA 2,4-D Ester 6 (pt/acre)	Specific Use Directions
Annual broadleaf weeds Biennial and perennial broadleaf weeds and susceptible woody plants	1 1/3 to 2 2/3 2 2/3 to 5 1/3	Apply when annual weeds are small and growing actively before the bud stage. Biennial and perennial weeds should be rosette to bud stage, but not flowering at the time of application. For difficult to control perennial broadleaf weeds and woody species, tank mix up to 2 2/3 qt of MANA 2,4-D Ester 6 plus 1 to 4 qt of Garlon 3A herbicide per acre. Oil or wetting agent may be added to the spray, if needed for increased effectiveness. For ground application: (High volume) apply a total spray volume of 100 to 400 gallons per acre; (low volume) apply a total spray volume of 10 to 100 gallons per acre. For helicopter: Apply a total spray volume of 5 to 30 gallons per acre.

Spot Treatment to control broadleaf weeds	See Instructions for "Spot Treatment"	Note: To control broadleaf weeds in small areas with a hand sprayer, use an application rate equivalent to the broadcast rates recommended for this treatment site and spray to thoroughly wet all foliage. See rate conversion table and instructions for "Spot Treatment" and use of hand-held sprayers under "Application Instructions".
Tree Injection Application		See instructions for tree injection application in "Forestry Uses" section.
Southern wild rose Broadcast application	up to 2 2/3	Broadcast: Apply in a spray volume of 5 or more gallons per acre by aircraft or 10 or more gallons per acre by ground equipment.
Spot treatment	2/3 gal/100 gal of spray	Apply when foliage is well developed. Thorough coverage is required. Use 2 2/3 qt of MANA 2,4-D Ester 6 plus 4 to 8 fluid ounces of an agricultural surfactant per 100 gallons of water. Two or more treatments may be required.

Precautions and Restrictions:

- Do not apply to newly seeded areas until grass is well established.
- **Bentgrass, St. Augustine, clover, legumes and dichondra may be severely injured or killed by this treatment.**
- When multiple applications of up to 2.0 lbs a.e. per acre are utilized to reach the maximum seasonal use rate, do not reapply to a treated area within 30 days of a previous application.
- **Grazing and Haying Restrictions:** If grazing or haying is anticipated, do not apply more than 2 2/3 pt/acre of MANA 2,4-D Ester 6 per application. Do not harvest forage or hay from treated areas for 7 days after application.
- Do not apply more than 5 2/3 pt/acre of MANA 2,4-D Ester 6 per use season.
- Use 2 or more gallons of spray solution per acre.

TURF USES

GRASSES GROWN FOR SEED OR SOD FARMS

Agricultural Use Requirements: When used in grass grown for seed or sod farms, follow PPE and reentry instructions in the "Agricultural Use Requirements" section of this label.

Treatment Site (Application Timing)	MANA 2,4-D Ester 6 (pt/acre)	Specific Use Directions
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Grasses Grown for Seed (Postemergence Use) Seedling grass (five-leaf stage or later) Well-established grasses	1/2 to 2/3	Apply when weeds are small and actively growing. For best results, apply when soil moisture is adequate for active weed growth. Do not apply to newly seeded grasses until well established (five-leaf stage or later) and then use a maximum of 2/3 pt/acre. Cool season grasses are more tolerant to higher rates. Do not apply to grass in the early boot through milk stage if seed production is desired. When grass is well established, higher rates of up to 2 2/3 pints/acre may be applied for control of hard-to-kill annual or perennial weeds.
	2/3 to 2 2/3	
Sod Farms (Postemergence)	1 1/3 to 2 2/3	Deep-rooted perennials such as bindweed and Canada thistle may require repeat applications. Avoid mowing sod farms for 1 to 2 days before or after application. Delay irrigation until the day following application.

Precautions and Restrictions:

- Do not use on creeping grasses such as bentgrass except as a spot treatment.
- Do not use on injury-sensitive southern grasses such as St. Augustine grass.
- Do not use on dichondra or other herbaceous ground covers. Legumes may be damaged or killed.
- **Preharvest interval:** Do not cut forage for hay within 7 days of application.
- Do not apply within 21 days of a previous application.
- **Reseeding:** Delay reseeding at least 30 days following application. Preferably, with spring application, reseed in the fall and with fall application, reseed in the spring.
- **Grazing and Haying Restrictions:** If grazing or haying is anticipated, do not apply more than 2 2/3 pt/acre of MANA 2,4-D Ester 6 per application. Do not harvest grass for hay from treated areas for 7 days after application.
- Do not apply more than 5 1/3 pt/acre of MANA 2,4-D Ester 6 per use season.
- Use sufficient spray solution for thorough and uniform coverage, and no less than 2 gallons per acre.

ORNAMENTAL TURF (EXCLUDING GRASSES GROWN FOR SEED OR SOD FARMS)
 (includes lawns, golf courses, cemeteries and parks, airfields, roadsides, and vacant lots)

Use Requirements for Ornamental Turf Areas: When this product is applied to ornamental turf areas, follow PPE and reentry instructions in the "Non-agricultural Use Requirements" section of this label.

Treatment Site (Application Timing)	MANA 2,4-D Ester 6 (pt/acre)	Specific Use Directions
Ornamental Turf (Postemergence) Seedling grass (five-leaf stage or later)	1/2 to 2/3	Apply when weeds are small and actively growing. For best results, apply when soil moisture is adequate for active weed growth. Deep-rooted perennial weeds such as bindweed and Canada thistle may require repeat applications. Do not apply to newly seeded grasses until well established (five-leaf stage or later) and then use a maximum of 2/3 pt/acre. Cool season grasses are tolerant of higher rates.
Well-established grasses	1 1/3 to 2	
Biennial and perennial broadleaf weeds	2	

Precautions and Restrictions:

- Do not use on creeping grasses such as bentgrass except as a spot treatment.
- Do not use on injury-sensitive southern grasses such as St. Augustine grass.
- Do not use on dichondra or other herbaceous ground covers. Legumes may be damaged or killed.
- Do not reapply within 21 days of a previous application.
- **Reseeding:** Delay reseeding at least 30 days following application. Preferably, with spring application, reseed in the fall and with fall application, reseed in the spring.
- Do not apply this product in a way that will contact any person or pet, either directly or through drift. Keep people and pets out of the area during application.
- **Turf Reentry:** Do not allow people or pets to enter the treated area until sprays have dried.
- Do not apply more than 2 broadcast applications per year per treatment site (excluding spot treatments).
- Do not apply more than 3.0 lb a.e. per year (excluding spot treatments).
- Do not apply more than 2 pt/acre of MANA 2, 4-D Ester 6 per application.

STORAGE AND DISPOSAL

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

STORAGE: Keep container tightly closed when not in use. If exposed to subfreezing temperatures, the product should be warmed to at least 40°F and mixed thoroughly before using.

PESTICIDE DISPOSAL: Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or

rinsate is a violation of Federal law and may contaminate groundwater. 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 HANDLING:

Nonrefillable Container (five gallons or less): Nonrefillable container. Do not reuse or refill this container. Offer for recycling, if available. Clean container promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. 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.

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

Refillable Container: Refillable container. Refill this container with 2,4-D Ester only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water

with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. 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.

LIMITATION OF WARRANTY AND LIABILITY

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

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

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

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

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

File name: MANA 2,4-D Ester 4 (to EPA 4-2-10)