



ACTIVE INGREDIENT:	
2,4-Dichlorophenoxyacetic Acid	19.6%
OTHER INGREDIENTS	80.4%
TOTAL	100.0%
Equivalent to 19.6% 2,4-D Acid or 1.74 lbs./gal. Isomer specific by AOAC Method 6.D01-5 (12th Ed.) Patent No. 5,877,112 – Other Patents Pending	

KEEP OUT OF REACH OF CHILDREN DANGER – PELIGRO

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.)

FIRST AID

IF IN EYES: 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 immediately for advice. **IF SWALLOWED:** Call a poison control center or doctor immediately for advice. Have person sip a glass of water. Do not induce vomiting unless instructed to do so by poison control center or doctor. Do not give anything by mouth to an unconscious or convulsing person. **IF INHALED:** Move victim to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration preferably mouth-to-mouth, if possible. Call a poison control center or doctor immediately for further treatment advice. **IF ON SKIN OR CLOTHING:** Take off contaminated clothing. Rinse immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

HOT LINE NUMBER: Have the product container or label with you when calling a poison control center or doctor, or going for treatment. For emergency assistance call toll-free, 1-800-424-9300 (ChemTrec).

NOTE TO PHYSICIAN: Probable mucosal damage may contraindicate the use of gastric lavage. Causes irreversible eye damage.

PRECAUTIONARY STATEMENTS

Hazards To Humans and Domestic Animals DANGER – PELIGRO

Corrosive. Causes irreversible eye damage. Harmful if swallowed. Harmful if inhaled. Do not get in eyes or on clothing. Avoid breathing spray mist or vapor. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

DIRECTIONS FOR USE

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

Manufactured For
HELENA CHEMICAL COMPANY
225 SCHILLING BOULEVARD, SUITE 300
COLLIERVILLE, TENNESSEE 38017

NET CONTENTS:

STORAGE AND DISPOSAL

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

PESTICIDE STORAGE: Do not store below temperature of 0°F. If frozen, warm to 40°F and re-dissolve before using by rolling or shaking container. This product can be stored in an unheated building. Store in a safe manner. Store in original container only. Keep container tightly closed when not in use. Reduce stacking height where local conditions can affect package strength. Do not store under conditions which might adversely affect the container or its ability to function properly.

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 DISPOSAL: NONREFILLABLE METAL CONTAINER (EQUAL TO OR LESS THAN 5 GALLONS): Do not reuse or refill this container. Triple rinse container (or equivalent) 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 1/4 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. Offer for recycling, if available, or puncture and dispose of in a sanitary landfill, or by other procedures approved by State and local authorities. **NON-REFILLABLE METAL CONTAINER (GREATER THAN 5 GALLONS):** Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 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. Offer for recycling, if available, or puncture and dispose of in a sanitary landfill, or by other procedures approved by State and local authorities. **NONREFILLABLE PLASTIC CONTAINER (EQUAL TO OR LESS THAN 5 GALLONS):** Do not reuse or refill this container. Triple rinse container (or equivalent) 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 1/4 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. Offer for recycling, if available, or puncture and dispose of in a sanitary landfill, or incineration if allowed by State and local authorities, by burning. If burned, stay out of smoke. **NONREFILLABLE PLASTIC CONTAINER (GREATER THAN 5 GALLONS):** Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 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. Offer for recycling, if available, or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke. **REFILLABLE CONTAINER:** Refill this container with pesticide only. Do not reuse this container for any other purpose. Prior to refilling, inspect thoroughly for damage such as cracks, punctures, abrasions, and damaged or worn-out threads on closure devices. Do not refill or transport damaged or leaking containers. Check for leaks after refilling and before transportation. 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. If the container is not being refilled, return to the point of purchase or designated location.

SEE INSIDE LABEL FOR ADDITIONAL PRECAUTIONARY STATEMENTS AND COMPLETE DIRECTIONS FOR USE.

EPA Reg. No. 5905-549 AD 081512
EPA Est. No.: First letters of product batch code indicate producing establishment. 5905-AR-1=WA • 5905-GA-1=C6 • 5905-IA-1=D1 • 5905-CA-1=K6

PEEL BACK BOOK HERE AND RESEAL AFTER OPENING

OPM #110224



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Patent No. 5,877,112 – Other Patents Pending

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DANGER – PELIGRO

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EPA Est. No.: First letters of product batch code indicate producing establishment.
5905-AR-1=WA • 5905-GA-1=CG • 5905-IA-1=DI • 5905-CA-1=KC

EPA Reg. No.: 5905-549
AD 081512

Manufactured For
HELENA CHEMICAL COMPANY
225 SCHILLING BOULEVARD, SUITE 300 • COLLIERVILLE, TENNESSEE 38017

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

DANGER – PELIGRO

Corrosive. Causes irreversible eye damage. Harmful if swallowed. Harmful if inhaled. Do not get in eyes or on clothing. Avoid breathing spray mist or vapor. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Some materials that are chemical resistant are made of barrier laminate, nitrile rubber, neoprene rubber or viton. If you want more options, follow the instructions for category *F* on an EPA chemical-resistance category selection chart.

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

- long-sleeved shirt and long pants,
- shoes and socks, plus
- face shield or goggles,
- chemical-resistant gloves when applying with any handheld equipment, mixing or loading, cleaning up spills or equipment, or otherwise exposed to the concentrate, and
- chemical-resistant apron when mixing or loading, cleaning up spills or equipment, or otherwise exposed to the concentrate.

See "Engineering Controls" for additional requirements.

User Safety 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 Control Statements

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

USER SAFETY RECOMMENDATIONS

- Users should wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Users should 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.
- 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.

ENVIRONMENTAL HAZARDS

For terrestrial uses: 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 and 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.

Aquatic Weed Control: Fish breathe dissolved oxygen in the water and decaying weeds also use oxygen. When treating continuous, dense weed masses, it may be appropriate to treat only part of the infestation at a time. For example, apply the product in lanes separated by untreated strips that can be treated after vegetation in treated lanes has disintegrated. During the

growing season, weeds decompose in a 2- to 3-week period following treatment. Begin treatment along the shore and proceed outwards in bands to allow fish to move into untreated areas. Waters having limited and less dense weed infestations may not require partial treatments.

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

This product may cause injury to desirable plants by contacting foliage, stems or roots. Use care in all applications to avoid surface water or soil transport to non-target plant areas. Avoid contamination of irrigation or domestic water supplies. Avoid applications in the vicinity of susceptible plants or when winds are blowing toward nearby susceptible plants or when temperature inversions are expected. Avoid direct application or spray drift to susceptible plants since very small quantities of this herbicide can cause severe injury in the growing or dormant period. Plants contacted may be killed or suffer significant injury resulting in grade or yield losses. Do not apply in greenhouses.

Use an agriculturally-accepted drift retardant designed to increase droplet size.

CHEMIGATION PROHIBITION

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

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 48 hours.

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

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

NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard 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.

USE REQUIREMENTS FOR PASTURES, PERENNIAL GRASSLANDS, RANGELAND, FALLOW LAND AND NON-CROP AREAS: Do not enter treated areas until spray has dried.

TURF USE REQUIREMENTS: Do not allow persons (other than applicator) or pets on treated area during application. Do not enter treated areas until spray has dried. **NOTE:** For application to turf being grown for sale or other commercial use as sod, or for commercial seed production, or for research purposes, follow "AGRICULTURAL USE REQUIREMENTS" on this label.

DIRECTIONS FOR USE

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

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 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.

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.

STORAGE AND DISPOSAL

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CONTAINER DISPOSAL:

NONREFILLABLE METAL CONTAINER (EQUAL TO OR LESS THAN 5 GALLONS): Do not reuse or refill this container.

Triple rinse container (or equivalent) 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 1/4 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. Offer for recycling, if available, or puncture and dispose of in a sanitary landfill, or by other procedures approved by State and local authorities.

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REFILLABLE CONTAINER: Refill this container with pesticide only. Do not reuse this container for any other purpose. Prior to refilling, inspect thoroughly for damage such as cracks, punctures, abrasions, and damaged or worn-out threads on closure devices. Do not refill or transport damaged or leaking containers. Check for leaks after refilling and before transportation. 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. If the container is not being refilled, return to the point of purchase or designated location.

PRODUCT INFORMATION

Local conditions, crop varieties, and application method may affect performance of this product. User should consult local extension service, agricultural experiment station, or university weed specialists, and state regulatory agencies for recommendations in your area.

Best results are obtained when product is applied to young succulent weeds that are actively growing. Application rates lower than specified will not be satisfactory on susceptible annual weeds. For perennial weeds and conditions such as the very dry areas of the western states, where control is difficult, the higher listed rates should be used. When product is used for weed control in crops, the growth stage of the crop must be considered. Some plants and weeds, especially woody varieties, are hard to control and may require repeat applications. Application rates should be 1 to 5 gallons of total spray by air or 5 to 25 gallons by ground equipment unless otherwise directed. In either case, use the same amount of **HardBall®** per acre. **HardBall®** should not be allowed to come into contact with desirable, susceptible plants such as beans, cotton, fruit trees, grapes, legumes, ornamentals, peas, tomatoes and other vegetables. **HardBall®** should not be used in greenhouses. If stored below freezing, it may be necessary to warm product to 40°F and agitate before using. This does not affect the efficacy of the product. Spray equipment used to apply **HardBall®** or other products containing 2,4-D should not be used for any other purpose until thoroughly cleaned with a suitable chemical cleaner.

WEEDS CONTROLLED

HardBall® will control or partially control the following as well as many other noxious plants susceptible to 2,4-D:

Alders	Cockle	Indian Mallow
Alligatorweed	Cocklebur, common	Indigo
American lotus	Coffeebean	Jewelweed
Arrowhead	Coffeeweed	Jerusalem artichoke
Artichoke	Cornflower	Jimsonweed
Austrian fieldcress	Creeping jenny	Klamathweed
Biden	Croton (Texas, woolly)	Ladysthumb
Bittercress, smallflower	Curly indigo	Lambsquarters, common
Bittersweet	Dandelion	Loco, bigbend
Bitterweed	Devil's Claw	Mallow (Venice, dwarf, little)
Bitter wintercress	<i>Proboscidea louisianica</i>	Marestail
Black-eyed Susan	Dogfennel (mayweed)	Marijuana
Blessed Thistle	Duckweed	Marshelder
Blue lettuce	Elderberry	Mexican weed
Blue thistle	Evening primrose, common	Milk vetch
Blueweed, Texas	Evening primrose, cutleaf	Morningglory
Box elder	Fanweed	(annual, common, ivy, woolly)
Broomweed, common	Figwort	Mousetail
Buckhorn	Fleabane	Mustards (except blue), prior to bolting
Bull nettle	Flixweed	Nutgrass
Bull thistle	Florida pusley	Parrotfeather
Bulrush	Four o'clock	Parsnip
Bur ragweed	Frenchweed	Pennycress (fanweed)
Burdock,common	Galinsoga (elderberry, hairy)	Pennywort
Burhead	Goatsbeard	Peppergrass
Buttercup, smallflowered	Goosefoot	Pepperweeds (except perennial)
Carpetweed	Gumweed	Plantains
Carolina geranium	Healall	Poison ivy
Catnip	Hemp	Pokeweed
Chickweed	Henbit	Poorjoe
Chicory	Honeysuckle	Poverty weed
Cinquefoil, common & rough	Horsetail	

(continued)

WEEDS CONTROLLED (*cont.*)

HardBall® will control or partially control the following as well as many other noxious plants susceptible to 2,4-D:

Prickly lettuce	Stinging nettles	Water primrose
Primrose	Stinkweed	Water shield
Puncture vine	Sumacs	Wild carrot
Purslane, common	Sunflower	Wild hemp
Quickweed	Sweetclover (annual)	Wild lettuce
Radish	Tanweed	Wild mustard
Ragweeds (common, giant)	Tarweed	Wild parsnip
Redstem	Thistles	Wild radish
Rough fleabane	Toadflax	Wild rape
Rush	Tumbleweed	Wild strawberry
Shepherdspurse	Velvetleaf	Wild sweet potato
Sicklepod	Venicemallow	Willow
Sneezeweed, bitter	Vetches, except hairy	Witchweed
Sowthistle (annual, spiny)	Virginia copperleaf	Wormwood
Spanishneedles	Virginia creeper	Yellow goatsbeard
Spatterdock	Water hyacinth	Yellow rocket
Speedwell	Water lily	Yellow starthistle
St. John's wort	Water plantain	

Weeds Partially Controlled (Higher rates and/or repeated applications may be needed):

Alfalfa	Hawkweed	Sage, coastal
Beggarticks	Henbit	Sagebrush (big, sand)
Bindweeds (hedge, European)	Hoary cress	Salsify (western, common)
Buckbrush	Ironweed	Salt Cedar (<i>T. ramossissima</i>)
Bull thistle	Knotweed	Sand shinnery oak
Canada thistle	Mallow	Smartweed, annual
Chamise	Many-flowered aster	Smartweed, Pennsylvania
Clover, red	Manzanita	Tansyragwort
Corn gromwell	Musk thistle	Vervains
Coyotebrush	Nettles	Vetch, hairy
Dandelion	Orange Hawkweed	Western ironweed
Docks	Peppergrass	Wild carrot
Dogbanes	Prickly lettuce	Wild garlic
Goldenrod	Rabbitbrush	Wild onion
Ground ivy	Russian thistle	

Weeds Partially Controlled And For Which Locally Resistant Biotypes May Occur:

Pigweed

Weeds Suppressed When Another Labeled Herbicide Is Also Applied:

Bindweed (field) Russian knapweed



MIXING INSTRUCTIONS

HardBall® is a macro-emulsifiable concentrate formulation intended for dilution in water for many applications. For certain specific applications, liquid fertilizer or oil may replace part or all of the water as diluent.

If dry flowable (DF), wettable powder (WP) or flowable (F) tank mix products are to be used, these should generally be added to the spray tank first. Refer to the mixing directions on the labels of the tank mix products.

For best results, thoroughly clean sprayer immediately after use by flushing system with water and heavy duty detergent such as **Wipe Out®**.

Water Spray: To prepare a water spray mixture, fill clean spray tank about 1/2 to 2/3 full with clean water. With agitation turned on, add the required amount of **HardBall®**. Continue agitation while adding balance of water and during spray operations.

NOTE: In water this product forms a macro-emulsion and can separate upon prolonged standing. If spray mixture is allowed to stand, agitate again to assure uniformity.

Liquid Fertilizer Spray: Due to increased risk of crop foliage burn with fertilizer, use only as recommended on this label or supplemental labeling distributed for **HardBall®**. Use fertilizer rate recommended locally. Fill clean spray tank about 1/2 to 2/3 full with liquid nitrogen fertilizer (UAN or urea) solution. Add required amount of product with vigorous agitation running. Continue agitation while adding balance of liquid fertilizer and during spray operations. Application should be made immediately. Overnight storage of mixture is not recommended. Application during very cold (near freezing) temperatures is not advisable because of the likelihood of crop injury. This product is formulated to be compatible with most liquid nitrogen solutions, however, due to variability in fertilizers, users may wish to perform a jar compatibility test before large-scale mixing.

Oil Spray: Use only as recommended on this label or supplemental labeling distributed for **HardBall®**. Fill clean spray tank about 1/2 to 2/3 full with an oil approved for agricultural use (diesel oil, fuel oil, stove oil, etc.). Add required amount of product with agitation turned on. Continue agitation while adding balance of oil. The resulting mixture is a solution and will generally remain uniform without agitation once mixed. However, agitation is suggested, if available. Do not allow any water to get into the spray mixture to avoid formation of an invert emulsion (mayonnaise consistency).

Water Spray With Oil: Use only as recommended on this label or supplemental labeling distributed for **HardBall®**. Where a combination of water and oil diluent is recommended, the use of emulsifiable crop oil or crop oil concentrate is suggested since mild agitation will be sufficient. Mix in the sequence of water, product, and oil. If diesel or other non-emulsified oils listed above under "Oil Spray" are desired for use with water, add no more than 1 quart of such oil per 1 gallon of water and agitate vigorously until tank is emptied. If possible, premix non-emulsified oil with this product and add this premix to a mostly filled spray tank with agitation on. Follow these procedures carefully to avoid formation of an invert emulsion (mayonnaise consistency).

APPLICATION PROCEDURES

Use calibrated spray equipment for all types of applications to assure applying the recommended amount of spray mixture per acre. Use sufficient spray volume within the ranges specified to obtain good coverage of weeds. **HardBall®** is absorbed sufficiently within 1 hour after application to provide adequate weed control.

Ground Broadcast Spray: Unless otherwise specified in the appropriate crop or non-crop directions, apply in 5 or more gallons of spray solution per acre. Use enough spray volume to provide uniform coverage of weeds, taking into account the amount of vegetation present and the type of application equipment to be used. As crop canopy and weed density increase, a higher spray volume may be needed for equivalent coverage and weed control. Typical crop applications utilize 10 to 50 gallons of spray solution per acre, while certain high volume non-crop applications may utilize more than 100 gallons per acre. Use coarse sprays to minimize potential spray drift. Do not apply with hollow cone nozzles or other nozzles that produce fine spray droplets. Boom spraying with flat fan or low volume nozzles is generally most suitable for ground broadcast applications.

Ground Band Spray: Determine band equivalents to broadcast rates and volumes by the following formulas:

Band width in inches		Broadcast		Band rate
Row width in inches	x	rate per acre	=	per acre
Band width in inches		Broadcast		Band volume
Row width in inches	x	volume per acre	=	per acre

Aerial Broadcast Spray: Unless otherwise specified in the appropriate crop or non-crop directions, apply in 1 to 5 gallons of spray solution per acre. For best coverage and weed control, as well as reduced potential for spray drift, a minimum of 3 gallons per acre is suggested. Avoid using nozzles or nozzle configurations that generate fine droplets. One configuration usually found to be suitable includes straight stream nozzles (such as disk with no swirl plate) directed straight back along the wind stream. Mechanical flagging or GPS (Global Positioning Systems) is suggested to obtain more uniform application.

With fixed-wing or helicopter application, an exactly even swath deposition may not be achieved, and consequently, crop injury or pesticide nonperformance may result wholly or in part. Do not apply by air during periods of thermal inversion. Avoid application if potential for drift is excessive and/or susceptible crops are growing in the vicinity.

TANK MIXES

Unless otherwise prohibited on this label or the label of an intended tank mix product, this product may be applied in combination with any herbicide registered for the same crop, timing, and method of application. Observe the most restrictive label statements of various tank mix products used. **LIABILITY FOR CROP INJURY RESULTING FROM A TANK MIXTURE NOT SPECIFIED ON THIS LABEL, OR SUPPLEMENTAL LABELING DISTRIBUTED FOR HARDBALL®, IS SPECIFICALLY DISCLAIMED BY CHEMICAL COMPANY.**

Glyphosate Tank Mixes:

HardBall® + Glyphosate (various formulations) may be used on all approved crops, use sites and use patterns, approved on both labels. **HardBall®** should be used at the rate of 1.5–3 pints in combination with the appropriate rate of Glyphosate per acre to provide best control of weed pest species. Consult the Glyphosate label to determine proper rate of Glyphosate to be used in combination with **HardBall®**.

COMPATIBILITY

Before full-scale mixing of this product with other herbicides, fertilizer solutions and adjuvants, it is advisable to determine the compatibility of the proposed mixture. Use proportionate quantities of each ingredient and mix in a small container. Always mix one product thoroughly with the diluent before adding another product. If no incompatibility is evident after 30 minutes, the mixture is generally compatible for spraying.

PLANTING IN TREATED AREAS

Labeled Crops: Within 29 days following an application of this product, plant only those crops named as use sites on this or other registered 2,4-D labels. Follow more specific limitations, if any, provided in the directions for individual crops. Labeled crops may be at risk for crop injury or loss when planted soon after application, especially in 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 following an 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 degradation 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 for information about susceptible crops and typical soil conditions in your area.

APPLICATIONS

READ ALL PROCEEDING GENERAL SECTIONS OF LABEL AND WARRANTY BEFORE USE.

Unless otherwise specified, applications may be made by ground or air equipment. Ground applications may provide more thorough coverage and better weed control. For selective postemergent weed control in crops, do not add oil, surfactant, fertilizer or other additives unless specifically recommended on this label or supplemental labeling.

GRASS PASTURES

To control many emerged broadleaf weeds, apply 1.0–4.0 pints **HardBall®** per acre. Addition of a nonionic surfactant, such as **INDUCE®** or **DYNE-AMIC®**, usually improves weed control. Preferred timing is in the early spring when sufficient weeds have emerged, and when weeds are small and actively growing, but before weeds are too mature. Summer applications to older, drought-stressed weeds are less effective. However, weeds are more susceptible again in the fall when cooler, wetter conditions support active growth before a killing frost. For fall treatment of mature weeds or perennial weed regrowth, use 3.5–8.0 pints per acre. Several seasons of spring plus fall treatments may be necessary to control certain perennials.

For susceptible annual and biennial broadleaf weeds: Use 1.0 lbs. ae per acre per application.

For moderately susceptible biennial and perennial broadleaf weeds: Use 1–2 lbs. ae per acre per application.

For difficult-to-control weeds and wood plants: Use 2 lbs. ae per acre per application.

Plant Response: Injury may result to bent grass, other warm-season or southern grasses, and alfalfa, clover or other legumes. Do not use if this risk of injury is unacceptable. Clovers may recover from early spring applications. If grass seed production is desired, do not apply when grass is in boot to milk stage or after heading begins. Do not apply to newly seeded areas until grass is well established. Reseeding is not recommended for at least 30 days following application. Addition of a surfactant may increase the risk of injury to newly seeded grasses.

Livestock Feeding Restrictions: Do not graze dairy animals on treated areas within 7 days after application. Do not graze meat animals on treated areas within 3 days before slaughter. Do not cut treated grass for hay within 30 days of application.

RESTRICTIONS AND LIMITATIONS: GRASS PASTURES

- Plant only labeled crops within 29 days following application.
- Limited to 2 applications per year.
- Maximum of 1.15 gallons (2 lbs. ae)/acre per application.
- Minimum of 30 days between applications.
- Do not cut forage for hay within 7 days of application.
- If grass is to be cut for hay, Agricultural Use Requirements for the Worker Protection Standard are applicable.

ROADSIDES; MEDIANS; HIGHWAY, RAILROAD, UTILITY AND PIPELINE RIGHTS-OF-WAY; VACANT LOTS; AROUND UTILITY INSTALLATIONS, TRANSFORMERS, PUMP HOUSES, AND BUILDINGS; STORAGE AREAS; FENCES; GUARDRAILS; LUMBER YARDS; INDUSTRIAL SITES; AIRPORTS; TANK FARMS; FARMSTEADS; AND SIMILAR NONCROP AREAS

For the control of many broadleaf weeds and small woody plants, applications may be as broadcast sprays, small areas or spot treatments. Regardless of the method of application, use adequate spray volume for full coverage of weeds. Preferred application timing is in the early spring when sufficient weeds have emerged, and are still small and actively growing and before weeds are too mature.

Summer applications to older, drought-stressed weeds are less effective. However, weeds and small woody plants are more susceptible again in the fall when cooler, wetter conditions support active growth before a killing frost.

Postemergence (annual and perennial weeds):

- Limited to 2 applications per year.
- Maximum of 4.5 quarts (2.0 lbs.) ae/acre per application.
- Minimum of 30 days between applications.

NOTE: Plant Response: Bent grass, other warm-season or southern grasses, alfalfa, clover or other legumes may be killed or injured. Do not apply when grass is in boot to milk stage, or after heading begins, if grass production is desired. Do not apply to newly seeded areas until grass is well established. Reseeding is not recommended for at least 30 days following application. Do not make repeat applications within 30 days of the previous application. Apply no more than 4.5 quarts (2.0 lbs. acid equivalent) per acre per use season.

Postemergence (woody plants):

- Limited to 1 application per year.
- Maximum of 2.25 gallons (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.

Postemergence Control of Annual and Perennial Weeds: Apply 0.5–1 gallon of **HardBall®** to emerged weeds. For best results treat when weeds are young and actively growing.

Postemergence Control of Woody Plants: Apply 0.5–2 gallons of **HardBall®** to trees and brush when foliage is fully expanded and plants are actively growing.

Special Uses:

On rights-of-way: Up to 2.25 gallons (4.0 lbs. acid equivalent) can be applied in a single application. This includes electrical power lines, communication lines, pipelines, highways, and railroads that intersect wooded areas or stands of trees, brush and woody plants. Usage under this section is 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.

ORNAMENTAL AND RECREATIONAL TURFGRASSES, LAWNS, GOLF COURSES (Fairways, Aprons, Tees, and Roughs), PARKS AND CEMETERIES

Do not apply more than 1.5 lbs. ae per acre per application. The maximal seasonal application rate is 3.0 lbs. ae per acre, excluding spot treatments. The maximum number of broadcast applications per treatment site is 2 per year. For best results, do not mow turf 1 to 2 days before or after application. Turf watering should be delayed for at least 1 hour after application. Avoid contacting desirable trees, shrubs, flowers or vegetables since plant injury may result. Do not apply to newly seeded areas until grass is well established and has been mowed several times. A period of about 30 days after application is usually a sufficient interval before reseeding grasses (or other plants). Seeding a small area and observing response is recommended before large-scale seeding.

Cool-Season Grasses: To control many emerged broadleaf weeds in cool-season turfgrasses such as tall fescue, bluegrass, or perennial ryegrass, apply 1.0–1.75 quarts per acre (0.75–1.28 fluid ounces per 1,000 square feet). Preferred application timing for broadcast treatment is in the early spring when small weeds have emerged and are actively growing under good moisture conditions. For very weedy turf, a follow-up broadcast or spot application may be needed from 2 to 4 weeks later. Summer applications are typically spot treatments of individual weeds that have emerged after a spring broadcast treatment. In the fall when cooler, wetter conditions favor active weed growth, broadcast application may be appropriate for very weedy turf, such as an area that had no spring broadcast treatment. Do not use on centipede, carpetgrass, St. Augustine, bentgrass or Dichondra turf, or where desirable clovers are present.

SOD FARMS

HardBall® is intended for use on Sod Farms to provide selective control of certain broadleaf weeds in cool-season and warm-season turfgrass established for commercial sod production. Apply **HardBall®** to actively growing broadleaf weeds. Follow-up may be required for dense infestations of perennial and biennial weeds. For best results, do not mow turf 1 to 2 days before or after application. Turf watering should be delayed until two days after application. Do not apply to newly seeded areas until grass is well established and has been mowed at least twice.

Reseeding Grass Areas: Do not reseed until at least 30 days after application of **HardBall®**. Seeding a small area and observing response is recommended before a large-scale seeding is accomplished.

Application Rates:

HardBall® application rates and spray volumes will vary with the growth stage and population of broadleaf weeds to be controlled. In general the smaller the weed the lower use of the listed rate range will provide satisfactory control. The larger the weed, the population and environmental conditions will require the higher end of the rate range to achieve satisfactory control especially for many of the perennial broadleaf weeds.

RATE FOR SOD FARMS		
Species	Amount of Product	Spray Volume
	Pints/acre	Gallons/Acre
Cool-Season Turf		
Kentucky Bluegrass	2 to 3.5	20 to 100
Perennial Ryegrass	2 to 3.5	20 to 100
Fescue spp.	2 to 3.5	20 to 100
Creeping Bentgrass	1.5	20 to 100
Warm-Season Turf		
Centipede grass	1.5 to 2.5	20 to 100
Common Bermudagrass	1.5 to 2.5	20 to 100
Hybrid Bermudagrass	1.5 to 2.5	20 to 100
Bahiagrass	1.5 to 2.5	20 to 100
Zoysiagrass	1.5 to 2.5	20 to 100

PRECAUTIONS AND LIMITATIONS FOR SOD FARMS

- Limited to two (2) applications per year
- Maximum of 4.5 quarts (2 lbs. ae) per acre per application
- Retreatment interval is 21 days.
- Do not apply this **HardBall®** to any variety of St. Augustinegrass. Do not use **HardBall®** on carpetgrass, Dichondra or where desirable clovers are present.
- Do not apply this product through any type of irrigation system
- Avoid drift or spray mist onto vegetables, flowers, ornamental plants, shrubs, trees, and other desirable plants. Do not pour spray solution or rinsate near any desirable plants.
- Do not apply **HardBall®** immediately before rainfall or irrigation. Do not water the turfgrass for 24 hours after application.
- Application to Bermuda grass can be during dormancy or when actively growing. Do not apply during periods of semi-dormancy or transition.

FOREST MANAGEMENT
(Including Site Prep, Forest Roadsides, Brush Control,
Established Conifer Release)

For the general control of annual, biennial and perennial broadleaf weeds and brush: Apply to emerged weeds and brush. For best results, treat when weeds and brush are young and actively growing. For broadcast applications apply no more than 2.25 gallons (4.0 lbs. ae equivalent) per acre per 12 months.

Broadcast application:

- Limited to 1 broadcast application per year.
- Maximum of 2.25 gallons (4.0 lbs. ae) per acre per broadcast application.

Basal spray, Cut Surface – Stumps, and Frill:

- Limit of one basal spray or cut surface application per year.
- Maximum of 4.5 gallons (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.

For specific use-site applications and restrictions see the appropriate site-specific instructions as follows:

Forest Site Preparation

Bud Break Spray: For control of alder, susceptible broadleaf weeds, and susceptible woody plants before planting forest seedlings, apply up to 2.0 gallons per acre in a minimum of 10 gallons spray mixture per acre. Apply as an oil spray (see "Mixing Instructions") after alder buds break, but before foliage is 1/4 full size. A water spray including 2 to 4 quarts per acre of diesel oil, fuel oil, stove oil, or crop oil concentrate may also be used.

ANNUAL, BIENNIAL, PERENNIAL BROADLEAF WEEDS AND GENERAL BRUSH CONTROL

Foliage Spray: To control seedlings and susceptible woody plants before planting forest, apply up to 2.0 gallons per acre in a minimum of 10 gallons spray mixture per acre. If desired, apply as a water spray including up to 1 quart of diesel oil, fuel oil, stove oil, or crop oil concentrate per gallon of water (see "Mixing Instructions"). For best results, apply after alder foliage has reached full size.

TREE AND BRUSH CONTROL (i.e., alder, ash, aspen, birch, black gum, cherry, elm, oak, sweet gum, tulip poplar, willow, and others)

Basal Spray Treatment: Mix 2–4 gallons of **HardBall®** per 100 gallons of diluent (may contain oil). Apply directly to base and root collar of all stems until the spray begins to accumulate at the ground line. Also wetting stems with this mixture may aid control.

Cut Surface Stumps: Mix 2–4 gallons of **HardBall®** per 100 gallons of diluent (may contain oil). Apply as soon as possible after cutting trees. Thoroughly soak the entire stump with 2,4-D mixture. Also treat exposed roots and bark.

Frill: Mix 2–4 gallons of **HardBall®** per 100 gallons of diluent (may contain oil). Make frills with an axe or other tool that can cut overlapping V-shaped notches through the bark in a continuous ring around the base of the tree. Treat freshly cut frills with as much **HardBall®** mixture as they will hold.

Injection: Make injections as near to the root collar as possible, using one injection per inch of trunk dbh (4-1/2 feet) for resistant species such as hickory. Injections should overlap. For best results, injections should be made during the growing season (May 15th through October 15th in many areas). The injection bit must penetrate the bark. Apply 2–4 ml of **HardBall®** per injection site.

Conifer Release: To control alder, susceptible broadleaf weeds, and susceptible woody plants in young conifer stands, apply up to 1 gallon per acre in a minimum of 10 gallons spray mixture per acre. This spring foliage treatment should be applied as a water spray when 3/4 of the brush foliage has full-sized leaves and before new conifer growth reaches 2 inches in length. Such stages usually occur between early May and mid-June, but application timing should be based on growth stages of brush and conifers. Application may cause leader deformation and other conifer injury, but trees should overcome it during the next growing season.

To control tanoak, madrone, ceanothus, canyon live oak, and manzanita, and to release Douglas fir, hemlock, Sitka spruce or grand fir, apply up to 1.5 gallons per acre in a minimum of 10 gallons spray mixture per acre. This spring foliage treatment should be applied as a water spray including, if desired, up to 1 quart of diesel oil, fuel oil, stove oil, or crop oil concentrate per gallon of water (see "Mixing Instructions"). Make application before new growth on Douglas fir is 2 inches long. To release ponderosa pine from the same species, treat before new pine growth begins in the spring. Addition of oil or oil concentrate may cause unacceptable injury to pines. For dormant applications in late winter or early spring for control of susceptible woody species such as alder, willow, poplars, cherry, vine maple, ceanothus, tanoak, madrone, and manzanita, apply up to 1.5 gallons per acre in a minimum of 10 gallons spray mixture per acre. This dormant treatment should be applied in diesel oil, fuel oil, stove oil, or other suitable diluent such as water plus crop oil concentrate (see "Mixing Instructions"). Do not use in plantations where pine and larch are among the desired crop species.

To control hazel brush in the Lake states, apply up to 1.0 gallon per acre in a minimum of 10 gallons spray mixture per acre. Apply as a water spray when new shoot growth of hazel is complete (usually mid-July).

After conifer species such as white pine, ponderosa pine, jack pine, red pine, black spruce, white spruce, red spruce, and balsam fir cease growth and harden off and brush is still actively growing in late summer, apply up to 1.5 gallons per acre in a minimum of 10 gallons spray mixture per acre. Apply as a water spray to control certain competing hardwoods such as alder, aspen, birch, hazel and willow. However, if possible injury cannot be tolerated, do not use since this treatment may cause conifer injury.

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Forest Roadsides: To control susceptible broadleaf weeds and woody plants on forest roadsides, apply 0.5–1.5 gallons per acre in a minimum of 10 gallons spray mixture per acre. Apply as a water spray and, if desired, include up to 3 quarts per acre of diesel oil, fuel oil, stove oil, or crop oil concentrate (see “Mixing Instructions”). Apply when sufficient foliage is present for absorption.

Established Conifers (including Christmas trees):

Directed Spray or Spot Spray: To control susceptible broadleaf weeds, mix up to 1.0 gallon per 100 gallons of water and apply to emerged weeds in the spring with ground equipment. Avoid contacting conifer foliage with spray or drift as injury may result. For brush, mix 2.0 gallons per 100 gallons of water. Thoroughly spray brush in full foliage, but avoid contacting conifer foliage with spray or drift. Do not apply more than the equivalent of 2.0 gallons per acre.

Over-the-Top Broadcast Application: To control susceptible broadleaf weeds, apply 0.5 gallon per acre in a minimum of 10 gallons spray mixture per acre. To decrease the potential for injury to firs, apply only before bud break in the spring and/or after complete bud set and hardening in the late summer or fall. Avoid treatment during the year of intended harvest.

AQUATIC WEED CONTROL

Notice to Applicators: Before application, coordination and approval of local and state authorities may be required, either by letter of agreement or issuance of special permits for such use.

Ground or Surface Application: Do not apply when wind speeds are at or above 10 mph.

Air Application: Do not apply when wind speeds are at or above 5 mph. The restrictions do not apply to subsurface applications used in weed control programs.

DITCH BANK APPLICATION:

RESTRICTIONS AND LIMITATIONS: WEED AND BRUSH ON IRRIGATION CANAL DITCHBANKS

- Postemergence:
 - Limited to 2 applications per season.
 - Maximum of 1.15 gallons (2 lbs. ae) per acre per application.
 - Maximum of 2.25 gallons (4 lbs. ae) per acre per season
 - Minimum of 30 days between applications.
- **Spot treatment permitted.**
- Do not use on small canals with a flow rate less than 10 cubic feet per second (CFS) where water will be used for drinking purposes. CFS may be estimated by using the formula below. The approximate velocity needed for the calculation can be determined by observing the length of time that it takes a floating object to travel a defined distance. Divide the distance (ft.) by the time (sec.) to estimate velocity (ft. per sec.) Repeat 3 times and use the average to calculate CFS.

$$\text{Average Width (ft.)} \times \text{Average Depth (ft.)} \times \text{Average Velocity (ft. per sec.)} = \text{CFS}$$

- **Note: For ditchbank weeds:**
 - Do not allow boom spray to be directed onto water surface.
 - Do not spray across stream to opposite bank.
- When spraying shoreline weeds, allow no more than 2-foot overspray onto water with an average of less than one-foot overspray to prevent introduction of greater than negligible amounts of chemical into the water.

Use power sprayers operated with a boom or spray gun mounted on a boat, tractor, or truck. Thorough wetting of foliage is essential for maximum control. Use 100 to 400 GPA of spray mixture. Special precautions such as the use of low pressure, large nozzles and thickening agents should be taken to avoid spray drift in areas of sensitive crops. For **DIRECTASPRAY™** operation, use with 1 pint of drift control agent in 50 to 100 gallons of water. For other applications, follow the drift control agent label for mixing directions.

FOR AQUATIC WEEDS IN LAKES, PONDS, RESERVOIRS, MARSHES, BAYOUS, DRAINAGE DITCHES, CANALS, AND RIVERS AND STREAMS THAT ARE QUIESCENT OR SLOW MOVING INCLUDING PROGRAMS OF THE TENNESSEE VALLEY AUTHORITY: Use 1–5 gallons of **HardBall®** per acre foot. For best results, apply in spring or early summer. A second treatment may be needed when weeds show signs of recovery, but no later than September in most areas. Spray to wet foliage thoroughly. Application should be made when leaves are fully developed above water line and plants are actively growing. Apply to attain a concentration of 2 to 4 ppm.

(continued)



EMERGENT AND FLOATING WEEDS

Surface Application: Apply 2.3 gallons per acre in a minimum spray volume of 5 gallons mix per acre.

Air Application: Use drift control spray equipment or thickening agents mixed into the spray solution. Apply 2.3 gallons per acre through standard boom systems with a minimum of 5 gallons of spray mix per acre. For **MICROFOIL®** drift control spray systems, apply in 12–15 gallons spray mix per acre.

- Maximum of 2.3 gallons (4.0 lbs. ae)/surface acre per application.
- Limited to 2 applications per season.
- Minimum of 21 days between applications.
- Spot treatments are permitted.

Apply to emergent aquatic weeds in ponds, lakes, reservoirs, marshes, bayous, drainage ditches, non-irrigation canals, rivers, and streams that are quiescent or slow moving. Coordination and approval of local and state authorities may be required, either by letter of agreement or issuance of special permits for aquatic applications.

Water Use:

1. Water for irrigation or sprays:

- A. If treated water is intended to be used only for crops or non-crop areas that are labeled for direct treatment with 2,4-D such as pastures, turf or cereal grains, the treated water may be used to irrigate and/or mix sprays for these sites at any time after the 2,4-D aquatic application.
- B. Due to potential phytotoxicity considerations, the following restrictions are applicable: If treated water is intended to be used to irrigate or mix sprays for plants grown in commercial nurseries and greenhouses; and other plants or crops that are not labeled for direct treatment with 2,4-D, the water must not be used unless one of the following restrictions has been observed:
 - i. A setback distance from functional water intake(s) of ≥ 600 ft. was used for the application, or,
 - ii. A waiting period of 7 days from the time of application has elapsed, or,
 - iii. An approved assay indicates that the 2,4-D concentration is 100 ppb (0.1 ppm) or less at the water intake. Wait at least 3 days after application before initial sampling at water intake.

2. Drinking water (potable water):

- A. Consult with appropriate state or local water authorities before applying this product to public waters. State or local agencies may require permits. The potable water use restrictions on this label are to ensure that consumption of water by the public is allowed only when the concentration of 2,4-D in the water is less than the MCL (Maximum Contaminant Level) of 70 ppb. Applicators should consider the unique characteristics of the treated waters to assure that 2,4-D concentrations in potable water do not exceed 70 ppb at the time of consumption.
- B. For floating and emergent weed applications, the drinking water setback distance from functioning potable water intakes is ≥ 600 ft.
- C. If no setback distance of ≥ 600 ft. is used for the application, applicators or the authorizing organization must provide a drinking water notification prior to a 2,4-D application to the party responsible for a public water supply or to individual private water users. Notification to the party responsible for a public water supply or to individual private water users must be done in a manner to assure that the party is aware of water use restrictions when this product is applied to potable water. The following is an example of notification via posting, but other methods of notification which convey the above restrictions may be used and may be required in some cases under state or local law or as a condition of a permit.

Example:

Posting notification should be located every 250 feet including the shoreline of the treated area and up to 250 feet of shoreline past the application site to include immediate public access points. Posting must include the day and time of application. Posting may be removed if analysis of a sample collected at the intake 3 or more days following application shows that the concentration in the water is less than 70 ppb (100 ppb for irrigation or sprays), or after 7 days following application, whichever occurs first.

Text of notification: Wait 7 days before diverting functioning surface water intakes from the treated aquatic site to use as drinking water, irrigation, or sprays, unless water at functioning drinking water intakes is tested at least 3 days after application and is demonstrated by assay to contain not more than 70 ppb 2,4-D (100 ppb for irrigation or sprays).

Application Date: _____ Time: _____.

(continued)



- D.** Following each application of this product, treated water must not be used for drinking water unless one of the following restrictions has been observed:
- i.** A setback distance from functional water intake(s) of ≥ 600 ft. was used for the application, or,
 - ii.** A waiting period of at least 7 days from the time of application has elapsed, or,
 - iii.** An approved assay indicates that the 2,4-D concentration is 70 ppb (0.07 ppm) or less at the water intake. Sampling for drinking water analysis should occur no sooner than 3 days after 2,4-D application. Analysis of samples must be completed by a laboratory that is certified under the Safe Drinking Water Act to perform drinking water analysis using a currently approved version of analytical Method Number 515, 555, other methods for 2,4-D as may be listed in Title 40CFR, Part 141.24, or Method Number 4015 (immunoassay of 2,4-D) from U.S. EPA Test Methods for Evaluating Solid Waste SW-846.
- E. Note:** Existing potable water intakes that are no longer in use, such as those replaced by a connection to municipal water system or a potable water well, are not considered to be functioning potable water intakes.
- F.** Drinking water setback distances do not apply to terrestrial applications of 2,4-D adjacent to water bodies with potable water intakes.
- 3.** Except as stated above, there are no restrictions on using water from treated areas for swimming, fishing, watering livestock or domestic purposes.

SUBMERGED AQUATIC WEEDS

Subsurface Application: Apply 2.5–6.2 gallons per acre-foot as a concentrate directly into the water through boat mounted distribution systems.

- Maximum of 10.8 lbs. ae/per acre-foot per application.
- Limited to 2 applications per season.
- Apply to aquatic weeds in ponds, lakes, reservoirs, marshes, bayous, drainage ditches, non-irrigation canals, rivers, and streams that are quiescent or slow moving.
- Do not apply within 21 days of previous application.
- When treating moving bodies of water, applications must be made while traveling upstream to prevent concentration of 2,4-D downstream from the application.
- Coordination and approval of local and state authorities may be required, either by letter of agreement or issuance of special permits for such use.

TABLE 1. AMOUNT OF 2,4-D TO APPLY FOR A TARGET SUBSURFACE CONCENTRATION

Surface Area	Average Depth	For typical conditions – 2 ppm 2,4-D ae/ acre-foot	For difficult conditions* – 4 ppm 2,4-D ae/ acre-foot
1 acre	1 ft.	5.4 lbs.	10.8 lbs.
	2 ft.	10.8 lbs.	21.6 lbs.
	3 ft.	16.2 lbs.	32.4 lbs.
	4 ft.	21.6 lbs.	43.2 lbs.
	5 ft.	27.0 lbs.	54.0 lbs.

*Examples include spot treatment of pioneer colonies of Eurasian Water Milfoil and certain difficult-to-control aquatic species.

Water Use:**1. Water for irrigation or sprays:**

- A.** If treated water is intended to be used only for crops or non-crop areas that are labeled for direct treatment with 2,4-D such as pastures, turf or cereal grains, the treated water may be used to irrigate and/or mix sprays for these sites at any-time after the 2,4-D aquatic application.
- B.** Due to potential phytotoxicity and/or residue considerations, the following restrictions are applicable: If treated water is intended to be used to irrigate or mix sprays for unlabeled crops, non-crop areas or other plants not labeled for direct treatment with 2,4-D, the water must not be used unless one of the following restrictions has been observed:
 - i.** A setback distance described in the Drinking Water Setback Table was used for the application, or,
 - ii.** A waiting period of 21 days from the time of application has elapsed, or,
 - iii.** An approved assay indicates that the 2,4-D concentration is 100 ppb (0.1 ppm) or less at the water intake. See **Table 3** for the waiting period after application but before taking the initial sampling at water intake.

2. Drinking water (potable water):

- A.** Consult with appropriate state or local water authorities before applying this product to public waters. State or local agencies may require permits. The potable water use restrictions on this label are to ensure that consumption of water by the public is allowed only when the concentration of 2,4-D in the water is less than the MCL (Maximum Contaminant Level) of 70 ppb. Applicators should consider the unique characteristics of the treated waters to assure that 2,4-D concentrations in potable water do not exceed 70 ppb at the time of consumption.
- B.** For submersed weed applications, the drinking water setback distances from functioning potable water intakes are provided in **Table 2. Drinking Water Setback Distance** (below).
- C.** If no setback distance from the **Drinking Water Setback Table (Table 2)** is to be used for the application, applicators or the authorizing organization must provide a drinking water notification and an advisory to shut off all potable water intakes prior to a 2,4-D application. Notification to the party responsible for a public water supply or to individual private water users must be done in a manner to assure that the party is aware of the water use restrictions when this product is applied to potable water. The following is an example of notification via posting, but other methods of notification which convey the above restrictions may be used and may be required in some cases under state or local law or as a condition of a permit.

Example:

Posting notification should be located every 250 feet including the shoreline of the treated area and up to 250 feet of shoreline past the application site to include immediate public access points. Posting should include the day and time of application. Posting may be removed if analysis of a sample collected at the intake no sooner than stated in **Table 3** (below) shows that the concentration in the water is less than 70 ppb (100 ppb for irrigation or sprays), or after 21 days following application, whichever occurs first.

Text of notification: Wait 21 days before diverting functioning surface water intakes from the treated aquatic site to use as drinking water, irrigation, or sprays, unless water at functioning drinking water intakes is tested no sooner than (insert days from **Table 3**) and is demonstrated by assay to contain not more than 70 ppb 2,4-D (100 ppb for irrigation or sprays).

Application Date: _____ Time: _____.

- D.** Following each application of this product, treated water must not be used for drinking water unless one of the following restrictions has been observed:
 - i.** A setback distance described in the Drinking Water Setback Distance Table was used for the application, or,
 - ii.** A waiting period of at least 21 days from the time of application has elapsed, or,
 - iii.** An approved assay indicates that the 2,4-D concentration is 70 ppb (0.07 ppm) or less at the water intake. Sampling for drinking water analysis should occur no sooner than stated in **Table 3**. Analysis of samples must be completed by a laboratory that is certified under the Safe Drinking Water Act to perform drinking water analysis using a currently approved version of analytical Method Number 515, 555, other methods for 2,4-D as may be listed in Title 40CFR, Part 141.24, or Method Number 4015 (immunoassay of 2,4-D) from U.S. EPA Test Methods for Evaluating Solid Waste SW-846.
- E. Note:** Existing potable water intakes that are no longer in use, such as those replaced by a connection to a municipal water system or a potable water well, are not considered to be functioning potable water intakes.
- F.** Drinking water setback distances do not apply to terrestrial applications of 2,4-D adjacent to water bodies with potable water intakes.
- 3.** Except as stated above, there are no restrictions on using water from treated areas for swimming, fishing, watering livestock or domestic purposes.

TABLE 2. DRINKING WATER SETBACK DISTANCE FOR SUBMERSED WEED APPLICATIONS

Application Rate and Minimum Setback Distance (feet) from Functioning Potable Water Intake			
1 ppm*	2 ppm*	3 ppm*	4 ppm*
600	1200	1800	2400

*ppm acid equivalent target water concentration

TABLE 3. SAMPLING FOR DRINKING WATER ANALYSIS AFTER 2,4-D APPLICATION FOR SUBMERSED WEED APPLICATIONS

Minimum Days After Application Before Initial Water Sampling at the Functioning Potable Water Intake			
1 ppm*	2 ppm*	3 ppm*	4 ppm*
5	10	10	14

*ppm acid equivalent target water concentration

WATER HYACINTH (*Eichornia crassipes*): For control of actively growing plants with surface and air applications, use 4–8 pints per acre. **Spray the weed mass only.** Use 8 pints when plants are matured or when the weed mass is dense.

WATER MILFOIL (*Myriophyllum spicatum*): For Eurasian Water Milfoil in programs conducted by the Tennessee Valley Authority (TVA) in dams and reservoirs of the TVA system, **HardBall®** will control Water Milfoil with surface, subsurface and air applications.

To control water milfoil when less than 5 gallons of concentrate per acre is specified, dilute the concentrate with water to apply a minimum of 5 gallons of spray mix per acre. Do not treat within 1/2 mile of potable water intakes. Shoreline areas should be treated by sub-surface injection applied by boat to avoid aerial drift. Do not apply when weather conditions favor drift from target area.

RESTRICTIONS AND LIMITATIONS FOR AQUATIC USE:

- Do not exceed 4.0 lbs. acid equivalent per surface acre per application.
- Do not reapply less than 3 weeks after prior application.
- Do not apply within 1,500 feet of active potable water intakes.

Fish breathe dissolved oxygen in the water and a water/oxygen ratio must be maintained. Decaying weeds use up oxygen. When treating continuous, dense weed masses, it may be appropriate to treat only part of the infestation at a time. For example, apply **HardBall®** in lanes separated by untreated strips that can be treated after vegetation in treated lanes has disintegrated. During the growing season, weeds decompose in a 2- to 3-week period following treatment. Waters having limited and less dense weed infestations may not require partial treatments. Other local factors such as water exchange and sediment load can also influence the dissolved oxygen level.

To avoid fish kill from decaying plant material, do not treat more than one-half the lake or pond at one time. For large bodies of weed infested waters, leave buffer strips of at least 100 feet wide and delay treatment of these strips for 4 to 5 weeks or until the dead vegetation has decomposed.

Water Use Instructions:

Unless an approved assay indicates that the 2,4-D concentration is 100 ppb (0.1 ppm) or less, or only growing crops and non-crop areas labeled for direct treatment with 2,4-D will be affected, do not use water from treated areas for:

1. Irrigating plants (especially cotton, grapes, and tomatoes).
2. Mixing sprays for agricultural or ornamental plants.

Unless an approved assay indicates the 2,4-D concentration is 70 ppb (0.07 ppm) or less, do not use water from treated areas for potable water (drinking water).

Except as stated above, there are no restrictions on using water from treated areas for fishing, watering livestock or domestic purposes.

CONDITIONS OF SALE – LIMITED WARRANTY AND LIMITATIONS OF LIABILITY AND REMEDIES

Read the Conditions of Sale – Warranty and Limitations of Liability and Remedies before using this product. If the terms are not acceptable, return the product, unopened, and the full purchase price will be refunded.

The directions on this label are believed to be reliable and must be followed carefully. Insufficient control of pests and/or injury to the crop to which the product is applied may result from the occurrence of extraordinary or unusual weather conditions or the failure to follow the label directions or good application practices, all of which are beyond the control of Helena Chemical Company (the "Company") or seller. In addition, failure to follow label directions may cause injury to crops, animals, man or the environment. The Company warrants that this product conforms to the chemical description on the label and is reasonably fit for the purpose referred to in the directions for use subject to the factors noted above which are beyond the control of the Company. To the extent consistent with applicable law, the Company makes no other warranties or representations of any kind; express or implied, concerning the product, including no implied warranty of merchantability or fitness for any particular purpose, and no such warranty shall be implied by law.

To the extent consistent with applicable law, the exclusive remedy against the Company for any cause of action relating to the handling or use of this product shall be limited to, at Helena Chemical Company's election, one of the following:

1. Refund of the purchase price paid by buyer or user for product bought, or
2. Replacement of the product used

To the extent consistent with applicable law, the Company shall not be liable and any and all claims against the Company are waived for special, indirect, incidental, or consequential damages or expense of any nature, including, but not limited to, loss of profits or income. The Company and the seller offer this product and the buyer and user accept it, subject to the foregoing conditions of sale and limitation of warranty, liability and remedies.

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