

Specimen Label



ForeFront[®] HL

Specialty Herbicide

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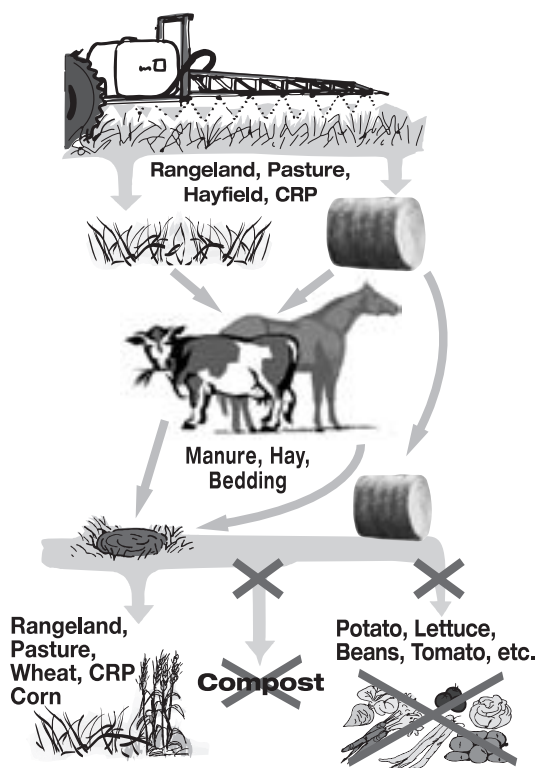
For control of susceptible weeds and certain woody plants on rangeland, permanent grass pastures (including grasses grown for hay*), Conservation Reserve Program (CRP) acres, and non-irrigation ditch banks

*Hay can only be used on the farm or ranch where the product is applied unless allowed by supplemental labeling

IMPORTANT USE PRECAUTIONS AND RESTRICTIONS TO PREVENT INJURY TO DESIRABLE PLANTS

- Carefully read the section “**Restrictions in Hay or Manure Use**.”
- It is mandatory to follow the “**Use Precautions and Restrictions**” section of this label.
- Manure and urine from animals consuming grass or hay treated with this product may contain enough aminopyralid to cause injury to sensitive broadleaf plants.
- Hay can only be used on the farm or ranch where product is applied unless allowed by supplemental labeling.
- Consult with a Dow AgroSciences representative if you do not understand the “**Use Precautions and Restrictions**”. Call [1-(800) 263-1196] Customer Information Group.

Forage and Manure Management



Not For Sale, Distribution, or Use in New York State.

Group	4	HERBICIDE
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Active Ingredient:

Triisopropanolammonium salt of 2-pyridine carboxylic acid, 4-amino-3,6-dichloro-	8.24%
Dimethyl amine salt of (2,4-dichlorophenoxy) acetic acid	41.26%
Other Ingredients	50.50%
Total	100.00%

Acid Equivalents:

aminopyralid (2-pyridine carboxylic acid, 4-amino-3,6-dichloro-) - 4.28% - 0.41 lb/gal (50 g/L)
2,4-D [(2,4-dichlorophenoxy) acetic acid] - 34.25% - 3.33 lb/gal (400 g/L)

Precautionary Statements

Hazard to Humans and Domestic Animals

EPA Reg. No. 62719-630

DANGER

Corrosive • Causes Irreversible Eye Damage • Harmful if Swallowed
Do not get in eyes or on clothing.

Personal Protective Equipment (PPE)

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

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

- Long-sleeved shirt and long pants
- Shoes plus socks
- Protective eyewear
- Chemical-resistant gloves, when 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 mixing or loading, cleaning up spills or equipment, or otherwise exposed to the concentrate

See engineering controls for additional requirements

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. 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

When handlers use closed systems or enclosed cabs in a manner that meets the requirements listed in the Worker Protections Standard (WPS) for agricultural pesticides [40 CFR 170.240 (d) (4-6)], 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/PPE 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.

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. Call a poison control center or doctor for treatment advice.

If swallowed: Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person.

Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact 1-800-992-5994 for emergency medical treatment information.

Note to Physician: Probable mucosal damage may contraindicate the use of gastric lavage.

Environmental Hazards

This product is toxic to aquatic invertebrates and may be toxic to fish. Drift or runoff may adversely affect aquatic invertebrates and nontarget plants. Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark except as permitted on this label. Drift and runoff may be hazardous to aquatic organisms in water adjacent to treated areas. Do not contaminate water when disposing of equipment washwater 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.

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.

Not For Sale, Distribution, or Use in New York State.

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 such as natural rubber.
- Protective eyewear
- 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: Do not enter or allow people (or pets) to enter the treated area until sprays have dried.

Storage and Disposal

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

Pesticide Storage: If this product is exposed to subfreezing temperatures, the active ingredient may crystallize and settle out of solution. Under these conditions the product should be warmed to at least 40°F and agitated well to dissolve any crystallized material prior to use.

Pesticide Disposal: Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture or rinsate is a violation of Federal law. 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.

Non-refillable containers 5 gallons or less:

Container Handling: Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

Triple rinse or pressure 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. **Pressure rinse** as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

Refillable containers larger than 5 gallons:

Container Handling: Refillable container. Refill this container with pesticide 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% full with water. Agitate vigorously or recirculate water with the pump for two minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.

Storage and Disposal (Cont.)

Nonrefillable containers 5 gallons or larger:

Container Handling: Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

Triple rinse or pressure 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. **Pressure rinse** as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

Product Information

ForeFront® HL specialty herbicide controls broadleaf weeds and certain woody plants on rangeland, permanent grass pastures (including grasses grown for hay*), Conservation Reserve Program (CRP) acres, and non-irrigation ditch banks.

***Hay can only be used on the farm or ranch where the product is applied unless allowed by supplemental labeling**

It is permissible to treat non-irrigation ditch banks, seasonally dry wetlands (such as flood plains, deltas, marshes, swamps, or bogs) and transitional areas between upland and lowland sites. ForeFront HL can be used to the waters edge. Do not apply directly to water and take precautions to minimize spray drift onto water.

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. EPA, C0131C, (W.D. W.A.). For further information, please refer to EPA Web site: <http://www.epa.gov/espp>.

Resistance Management Guidelines

- Development of plant populations resistant to this herbicide mode of action is usually not a problem on rangeland, permanent grass pastures, or CRP, since these sites receive infrequent pesticide applications.
- Similar looking biotypes of a given weed species occurring in a treated area may vary in their susceptibility to a herbicide. Application of a herbicide below its specified rate may allow more tolerant weeds to survive and a shift to more tolerant biotypes within the treated area.
- Where identified, spreading of resistant weeds to other fields may be prevented by cleaning harvesting and tillage equipment before moving to other areas and by planting weed-free seed.
- Contact your extension specialist, certified crop consultant, or Dow AgroSciences representative for the latest resistance management information.

Use Precautions and Restrictions

This product is not intended for reformulation or repackaging into other end-use products.

Consult with a Dow AgroSciences representative if you do not understand the "Use Precautions and Restrictions." Call (1-800-263-1196) for more information.

- **Do not use on grasses grown for hay intended for export outside the United States.**
- **ForeFront HL is PROHIBITED from use on hay that will be distributed or made available for sale off the farm or ranch where harvested unless allowed by supplemental labeling.**
- **ForeFront HL is PROHIBITED from use on silage, haylage, baylage and green chop unless allowed by supplemental labeling.**

- **Do not move hay made from grass treated with ForeFront HL off farm unless allowed by supplemental labeling.**
- **Do not use hay or straw from areas treated with ForeFront HL or manure from animals feeding on hay treated with ForeFront HL in compost.**
- **Do not use on grasses grown for seed production.**
- Applications made during periods of intense rainfall, to soils saturated with water, surfaces paved with materials such as asphalt or concrete, or soils through which rainfall will not readily penetrate may result in runoff and movement of ForeFront HL. Injury to crops may result if treated soil and/or runoff water containing ForeFront HL is washed, or moved onto land used to produce crops. Exposure to ForeFront HL may injure or kill susceptible crops and other plants, such as grapes, soybeans, tobacco, sensitive ornamentals. Do not treat frozen soil where runoff could damage sensitive plants.
- **Preharvest Interval:** Do not cut forage for hay within 7 days of application. 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.
- **Maximum seasonal rate:** Apply no more than 2.1 pints (34 fluid oz) (0.87 lbs ae 2,4-D) per acre per use season
- Use 2 or more gallons of spray solution per acre
- Do not make more than two applications per year
- Do not apply within 30 days of previous application
- If grass is to be cut for hay, Agricultural Use Requirements for the Worker Protection Standard are applicable
- **Maximum Application Rate:** Do not broadcast apply more than 2.1 pints (34 fluid oz) (0.87 lbs ae 2,4-D) per acre of ForeFront HL per year. The total amount of ForeFront HL applied broadcast, as a re-treatment, and/or spot treatment per year must not exceed 2.1 pints (34 fluid oz) (0.87 lbs ae 2,4-D) per acre. Spot treatments may be applied at an equivalent broadcast rate of up to 4.2 pints (68 fluid oz) of ForeFront HL (1.74 lbs ae 2,4-D) per acre per annual growing season; however, not more than 50% of an acre may be treated at that rate.
- **Grazing and Haying Restrictions:** Do not harvest forage for hay within 7 days of ForeFront HL application. Cutting hay too soon after spraying weeds can compromise the weed control. Wait 14 days prior to cutting grass hay to allow for maximum herbicide activity.
- **Do not use this product for impregnation on dry fertilizer, unless specified in a Dow AgroSciences state specific product bulletin.**
- **Transfer of Animals Feeding on ForeFront HL Treated Forage:** Do not transfer animals grazing or feeding on hay to areas where sensitive broadleaf crop occur without first allowing 3 days of grazing on an untreated pasture. Otherwise, urine and manure may contain enough aminopyralid to cause injury to sensitive broadleaf plants.
- Do not apply this product on lawns, turf, ornamental plantings, urban walkways, driveways, tennis courts, golf courses, athletic fields, commercial sod operations, or other high-maintenance, fine turfgrass areas, or similar areas.
- **Restrictions in Hay or Manure Use:**
 - Do not use aminopyralid-treated plant residues, including hay or straw from treated areas, or manure from animals that have grazed forage or eaten hay harvested from treated areas within the previous 3 days, in compost, mulch or mushroom spawn.
 - Do not spread manure from animals that have grazed or consumed forage or hay from treated areas within the previous 3 days on land used for growing broadleaf crops.
 - Manure from animals that have grazed forage or eaten hay harvested from aminopyralid-treated areas within the previous 3 days may only be used on pasture grasses, grass grown for seed, wheat and corn.
 - Do not plant a broadleaf crop (including soybeans, sunflower, tobacco, vegetables, field beans, peanuts, and potatoes) in fields treated in the previous year with manure from animals that have grazed forage or eaten hay harvested from aminopyralid-treated areas until an adequately sensitive field bioassay is conducted to determine that the aminopyralid residues in the soil is at level that is not injurious to the crop to be planted.
 - To promote herbicide decomposition, plant residues should be evenly incorporated in the surface soil or burned. Breakdown of aminopyralid in plant residues or manure is more rapid under warm, moist soil conditions and may be accelerated by supplemental irrigation.

- **Grazing Poisonous Plants:** Herbicide application may increase palatability of certain poisonous plants. Do not graze treated areas until poisonous plants are dry and no longer palatable to livestock.
- **Seeding grasses:**
 - **Preemergence:** In general, ForeFront HL may be applied in the spring or early summer, depending on the target weed species, and grasses planted after 4 months when conditions are favorable for grass establishment.
 - With fall applications, do not plant grasses the following spring.
 - Do not overseed ryegrass for 4 months after treatment
 - **Postemergence:** During the season of establishment, ForeFront HL should be applied only after perennial grasses are well established (have developed a good secondary root system and show good vigor). Most perennial grasses are tolerant to ForeFront HL at this stage of development. ForeFront HL may suppress certain established grasses, such as smooth brome (grass) (*Bromus inermis*), especially when plants are stressed by adverse environmental conditions. Plants should recover from this transient suppression with the onset of environmental conditions favorable to grass growth and upon release from weed competition.
- **Seeding Legumes:** Do not plant forage legumes until a soil bioassay has been conducted to determine if aminopyralid residues remaining in the soil will adversely affect the legume establishment.
- **Crop Rotation:** Do not rotate to cropland for one year following an application of ForeFront HL. Cereals and corn can be planted one year after treatment. Most broadleaf crops are more sensitive and can require **at least 2 years** depending on the crop and environmental conditions. Do not plant a broadleaf crop until an adequately sensitive field bioassay shows that the level of aminopyralid present in the soil will not adversely affect that broadleaf crop.
- **Field Bioassay Instructions:** In fields previously treated with this product, plant short test rows of the intended rotational crop across the original direction of application in a manner to sample variability in field conditions such as soil texture, soil organic matter, soil pH, rainfall pattern or drainage. The field bioassay can be initiated starting a minimum of one year after herbicide application and following harvest of the treated crop. Observe the test crop for symptoms of herbicidal activity, such as poor stand (effect on seed germination), chlorosis (yellowing), and necrosis (dead leaves or shoots), or stunting (reduced growth). If herbicidal symptoms do not occur, the test crop can be grown. If there is apparent herbicidal activity, do not plant the field to the intended rotational crop; plant only to wheat, forage grasses, native grasses or grasses grown for hay.
- **ForeFront HL is highly active against many broadleaf plant species.** Do not use this product on areas where loss of desirable broadleaf forage plants, including legumes, cannot be tolerated.
- Trees adjacent to or in a treated area can occasionally be affected by root uptake of ForeFront HL through movement into the soil. Do not apply ForeFront HL within the root zone of desirable trees unless such injury can be tolerated. Use special caution near roses, and leguminous trees such as locusts, redbud, mimosa, and caragana.
- **Chemigation:** Do not apply this product through any type of irrigation system.
- **Do not contaminate water intended for irrigation or domestic purposes.** Do not treat inside banks or bottoms of irrigation ditches, either dry or containing water, or other channels that carry water that may be used for irrigation or domestic purposes.

Restrictions for Non-Irrigation Canal Ditchbank Application

Postemergence:

Limited to 1 application per season.

Maximum of 2.1 pints (34 fluid oz) (0.87 lbs ae 2,4-D)/acre per application.

Minimum of 30 days between applications

Spot treatments may be applied at an equivalent broadcast rate of up to 4.2 pints (68 fluid oz) of ForeFront HL (1.74 lbs ae 2,4-D) per acre per annual growing season; however, not more than 50% of an acre may be treated at that rate.

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.

Average Width (ft.) x Average Depth (ft.) x Average Velocity (ft. per sec.) = CFS

For ditchbank weeds:

Do not allow boom spray to be directed onto water surface.

Do not spray across stream to opposite bank.

For shoreline weeds:

Allow no more than 2 foot overspray onto water.

Sprayer Clean-Out Instructions

It is recommended that separate spray equipment be used on highly sensitive crops such as tobacco, soybeans, peanuts, and tomatoes.

Do not use spray equipment used to apply ForeFront HL for other applications to land planted to, or to be planted to, crops or desirable sensitive plants, unless it has been determined that all residues of this herbicide have been removed by thorough cleaning of equipment.

Equipment used to apply ForeFront HL should be thoroughly cleaned before reusing to apply any other chemicals as follows.

1. Rinse and flush application equipment thoroughly after use. Dispose of rinse water away from water supplies.
2. Rinse a second time, adding 1 quart of household ammonia or tank cleaning agent for every 25 gallons of water. Circulate the solution through the entire system so that all internal surfaces are contacted (15 to 20 minutes). 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. Spray nozzles and screens should be removed and cleaned separately.

Application Methods

Apply the specified rate of ForeFront HL as a coarse low-pressure spray. **Do not apply this product with mist blower systems that deliver very fine spray droplets. Use of mist blower equipment can reduce weed control and increase spray drift potential.**

Spray volume should be sufficient to uniformly cover foliage. Increase spray volume to ensure thorough and uniform coverage when target vegetation is tall and/or dense. To enhance foliage wetting and coverage, an approved non-ionic agricultural surfactant may be added to the spray mixture as specified by the surfactant label.

Ground Broadcast Application: Higher spray volumes (greater than 10 gallons per acre) generally provide better coverage and better control, particularly in dense and/or tall foliage.

Aerial Broadcast Application: Do not apply less than 2 gallons per acre total spray volume. Five gallons per acre or greater will generally provide better coverage and better control, particularly in dense and/or tall foliage.

High-Volume Foliar Application: High volume foliar treatments may be applied at rates equivalent to broadcast up to a maximum of 2.1 pints (34 fluid oz) per acre per annual growing season. Use sufficient spray volume to thoroughly and uniformly wet foliage and stems.

Spot Application: Spot treatments may be applied at rates equivalent to broadcast-applied rate of up to a maximum of 4.2 pints (68 fluid oz) per acre on 50% of the treated field. Spray volume should be sufficient to thoroughly and uniformly wet weed foliage. Repeat treatments may be made, but the total amount of ForeFront HL applied must not exceed 2.1 pints (34 fluid oz) per acre per year (see comments in the Use Precautions and Restrictions section above on Maximum Application Rate).

Table 1: Amount of ForeFront HL herbicide (in fl oz) to mix in 3 gallons of water

ForeFront HL Amount (In fluid oz) To Mix In 3 Gal Of Water With Various Application Rates

GPA	19 fl oz/A	24 fl oz/A	34 fl oz/A
20	2.9	3.6	5.1
30	1.9	2.4	3.4
40	1.4	1.8	2.6
50	1.1	1.4	2.0
60	1.0	1.2	1.7
70	0.8	1.0	1.4
80	0.7	0.9	1.3
90	0.6	0.8	1.1
100	0.6	0.7	1.0

Table 2: Application rates in the table below are based on treating an area of 1000 sq ft. An area of 1000 sq ft is about 10.5 by 10.5 yards in size. Mix the amount of ForeFront HL (fl oz or milliliters) corresponding to the desired broadcast rate in 0.5 to 2.5 gallons of water, depending upon the spray volume required to treat 1000 sq ft. A delivery volume of 0.5 gallons per 1000 sq ft is equivalent to 22 gallons per acre and 2.5 gallons per 1000 sq ft is equivalent to 109 gallons per acre.

Amount of ForeFront HL per 1000 sq ft to Equal Broadcast Rate			
Broadcast Rate		Amount of ForeFront HL per 1000 sq ft	
(fl oz/acre)	(pints/acre)	(fluid oz)	(mL)
19	1.2	0.44	13
24	1.5	0.55	16
34	2.1	0.78	23

Note: 1 mL = 1cc and 1 fluid ounce (fl oz) = 29.6 milliliters (mL) = 2 tablespoons = 6 teaspoons

To calculate the amount of ForeFront HL for areas larger than 1000 sq ft: Multiply the table value (fl oz or milliliters) by the area to be treated in "thousands" of square feet. For example, if the area to be treated is 3500 sq ft, multiply the table value by 3.5 (3500 sq ft divided by 1000 sq ft = 3.5).

Mixing Instructions

Mixing with Water

To prepare the spray, add about half the required amount of water in the spray tank. Then, with agitation, add the specified amount of ForeFront HL and other registered tank mix herbicides. Finally, with continued agitation, add the rest of the water and additives such as surfactants or drift control and deposition aids.

Addition of Surfactants or Adjuvants on All Labeled Use Sites: The addition of a high quality non-ionic surfactant (of at least 80% active ingredient) at 0.25 to 0.5 % volume per volume (1 to 2 quarts per 100 gallons of spray) is recommended to enhance herbicide activity under adverse environmental conditions (such as, high temperature, low relative humidity, drought conditions, dusty plant surfaces) or when weeds are heavily pubescent or more mature.

Tank Mixing with Other Herbicides

ForeFront HL at rates of up to 2.1 pints (34 fl oz) per acre may be mixed with labeled rates of other labeled herbicides to broaden the spectrum of weeds controlled or to improve control of certain weeds. ForeFront HL may be applied in tank mix combination with labeled rates of other herbicides provided: (1) the tank mix product is labeled for the timing and method of application for the use site to be treated and (2) mixing is not prohibited by the label of the registered tank mixed products, and (3) that the tank mix combination is physically compatible (see tank mix compatibility testing below). When tank mixing, use only in accordance with the restrictions, precautions and limitations on the respective product labels

- Read carefully and follow all applicable use directions, precautions, and limitations on the respective product labels.
- Do not exceed specified application rates. If products containing the same active ingredient are mixed, do not exceed the maximum allowable active ingredient use rates.
- For direct injection or other spray equipment where the product formulations will be mixed in undiluted form, special care should be taken to ensure tank mix compatibility.
- Always perform a jar test to ensure the compatibility of products to be used in tank mixture.

Tank Mixing Precautions:

- For products packaged in water soluble packaging, do not tank mix with products containing boron or mix in equipment previously used to apply a product mixture containing boron unless the tank and spray equipment has been adequately cleaned. (See Sprayer Clean-Out instructions.)
- Always perform a (jar) test to ensure the compatibility of products to be used in tank mixture.

Tank Mix Compatibility Testing: Perform a jar test prior to mixing in a spray tank to ensure compatibility of ForeFront HL and other pesticides or carriers. Use a clear glass jar with lid and mix ingredients in the same order and proportions as will be used in the spray tank. The mixture is compatible if the materials mix readily when the jar is inverted several times. The mixture should remain stable after standing for 1/2 hour or, if separation occurs, should readily mix if agitated. An incompatible mixture is indicated by separation into distinct layers that do not readily remix when agitated and/or the presence of flakes, precipitates, gels, or heavy oily film in the jar. Use of an appropriate compatibility agent may resolve mix incompatibility.

Mixing with Sprayable Liquid Fertilizer Solutions: ForeFront HL is usually compatible with liquid fertilizer solutions. It is anticipated that ForeFront HL will not require a compatibility agent for mixing with fertilizers; however, a compatibility test (jar test) should be made prior to large scale batch mixing. Jar tests are particularly important when a new batch of fertilizer or pesticide is used, when water sources change, or when tank mixture ingredients or concentrations are changed. Compatibility may be determined by mixing the spray components in the desired order and proportions in a clear glass jar before large scale mixing of spray components in the spray tank. When required, a compatibility agent could be used to help obtain and maintain a uniform spray solution during mixing and application. **Note:** The lower the temperature of the liquid fertilizer, the greater the likelihood of mixing problems. **Mixing ForeFront HL in N-P or N-P-K liquid fertilizer solutions is more difficult than mixing with straight nitrogen fertilizer and should not be attempted without first conducting a successful compatibility jar test.** Agitation in the spray tank must be vigorous to be comparable with jar test agitation. Apply the spray mixture the same day it is prepared while maintaining continuous agitation. Rinse the spray tank thoroughly after use.

Suggested Mixing Procedure:

1. With continuous vigorous agitation, dilute herbicide with water (1 part herbicide to 2 parts water) before adding to liquid nitrogen fertilizer solution.
2. Apply as soon as mixing is complete, maintaining continuous, vigorous agitation throughout mixing and application without interruption.
3. Application during very cold (near freezing) weather is not advisable. The likelihood of mixing or compatibility problems with liquid fertilizer increases under cold conditions.
4. Do not store the spray mixture.

Note: Foliar-applied liquid fertilizers themselves can cause injury (such as: yellowing and burning) to the foliage of forage grasses and other vegetation especially in the summer. The addition of a surfactant to fertilizer blends may increase the injury potential.

Use Rates and Timing

Do not use ForeFront HL if loss of legumes species or other broadleaf species cannot be tolerated.

ForeFront HL may be applied postemergence as a broadcast spray or as a spot application to control weeds listed on this label; weeds other than those listed may also be controlled by this herbicide. When a rate range is given, use a higher rate in the range to control weeds at advanced growth stages or under less-than-favorable growing conditions (e.g., drought stress) or for longer residual control. Best weed control results are obtained when spray volume is sufficient to provide uniform coverage of treated plants. For optimum uptake and translocation of the herbicide, avoid mowing, haying, shredding, burning or soil disturbance in treated areas for at least 7 days following application.

For most species, 2 hours between application and rainfall provides a sufficient amount of time to avoid loss in weed control due to herbicide wash-off of foliage.

ForeFront HL also provides preemergence control of germinating seeds or emerging seedlings of susceptible weeds and re-growth of certain perennial weeds following application. Weed establishment following ForeFront HL application will depend upon application rate, season of application, and growing condition.

ForeFront HL can provide long-term control of weeds. The length of control is dependent upon the application rate, condition and growth stage of target weeds, environmental conditions at and following application, and the density and vigor of competing desirable vegetation. Long-term broadleaf weed control is most effective where forage grasses are allowed to recover from overgrazing, drought, etc., and compete with weeds.

ForeFront HL can be an important component of integrated vegetation management programs designed to renovate or restore desired plant communities. To maximize and extend the benefits of weed control provided by ForeFront HL, it is important that vegetation management practices, including grazing management, biological control agents, replanting, fertilization, prescribed fire, reseeding with desirable plants, etc., be used to increase the competitiveness of desired forages. Used as part of an integrated management program, ForeFront HL can serve as a catalyst for rapid improvement of rangeland, permanent grass pasture, and CRP, by alleviating the adverse competitive effect of weeds on the yield and quality of forages and other desirable plant species. Agricultural and natural resources specialists with federal and state government agencies can provide guidance on best management practices and development of integrated vegetation management systems.

Broadleaf Weeds Controlled

The following weeds will be controlled at 1.2 to 2.1 pints (19 to 34 fluid oz) per acre. For best results, apply when weeds are actively growing and conditions favorable for plant growth. Use a higher rate in the rate range when growing conditions are less than favorable, when weeds are mature, or when weed foliage is tall and dense or when residual control is important. ForeFront HL also provides preemergence control of germinating seeds or emerged seedlings of susceptible weeds following application.

Table 3: Broadleaf Weeds Controlled

Weed Species			
Common Name	Scientific Name	Life Cycle***	Plant Family
Rate Range: 1.2 to 1.5 pints (19 to 24 fluid oz) per acre			
bedstraw	<i>Galium spp.</i>	perennial	Rubiaceae
bedstraw, smooth	<i>Galium mollugo</i>	perennial	Rubiaceae
beggarticks	<i>Bidens spp.</i>	annual	Asteraceae
carrot, wild*	<i>Daucus carota</i>	biennial	Apiaceae
chamomile, scentless	<i>Matricaria inodora</i>	annual	Asteraceae
Cinquefoil, hoary	<i>Potentilla argentea</i>	perennial	Rosaceae
cinquefoil, sulfur*,**	<i>Potentilla recta</i>	perennial	Rosaceae
clover, sweet	<i>Melilotus officinalis</i>	biennial	Fabaceae
clover, white	<i>Trifolium repens</i>	perennial	Fabaceae
crownvetch*	<i>Securigera varia</i>	perennial	Fabaceae
daisy, oxeye*,**	<i>Leucanthemum vulgare</i>	perennial	Asteraceae
falsedandelion, Carolina*	<i>Pyrrhopappus carolinianus</i>	annual/biennial	Asteraceae
gumweed, curlycup	<i>Grindelia squarrosa</i>	biennial	Asteraceae
horsenettle, Carolina*,**	<i>Solanum carolinense</i>	perennial	Solanaceae
jimsonweed	<i>Datura stramonium</i>	annual	Solanaceae
pokeweed, common	<i>Phytolacca americana</i>	perennial	Phytolaccaceae
ragweed, common*,**	<i>Ambrosia artemisiifolia</i>	annual	Asteraceae
ragweed, western	<i>Ambrosia psilostachya</i>	perennial	Asteraceae
ragwort, tansy*,***	<i>Senecio jacobaea</i>	perennial	Asteraceae
starthistle, yellow*,***	<i>Centaurea solstitialis</i>	annual	Asteraceae
thistle, bull*,**	<i>Cirsium vulgare</i>	biennial	Asteraceae
thistle, musk*,**	<i>Carduus nutans</i>	biennial	Asteraceae
thistle, plumeless*,**	<i>Carduus acanthoides</i>	biennial	Asteraceae
thistle, scotch	<i>Onopordum acanthium</i>	biennial	Asteraceae
tickclover	<i>Desmodium sp.</i>	perennial	Fabaceae
vetch, common*	<i>Vicia sativa</i>	annual	Fabaceae
woodsorrel, yellow*	<i>Oxalis stricta</i>	perennial	Oxalidaceae
wormwood, absinth*,**	<i>Artemisia absinthium</i>	perennial	Asteraceae
Rate Range: 1.5 to 2.1 pints (24 to 34 fluid oz) per acre			
actinomeris, wingstem	<i>Verbesina alternifolia</i>	perennial	Asteraceae
amaranth, spiny*	<i>Amaranthus spinosus</i>	annual	Amaranthaceae
broomweed, annual*	<i>Amphiachyris dracunculoides</i>	annual	Asteraceae
burdock, common*,**	<i>Arctium minus</i>	biennial	Asteraceae
buttercup, hairy*	<i>Ranunculus sardous</i>	perennial	Ranunculaceae
buttercup, tall*,**	<i>Ranunculus acris</i>	perennial	Ranunculaceae
camphorweed*	<i>Heterotheca subaxillaris</i>	annual	Asteraceae
cat's ear, common	<i>Hypochaeris radicata</i>	perennial	Asteraceae
chickweed, common*	<i>Stellaria media</i>	annual	Caryophyllaceae
chicory*	<i>Cichorium intybus</i>	perennial	Asteraceae
cocklebur*	<i>Xanthium strumarium</i>	annual	Asteraceae
croton, woolly*,**	<i>Croton capitatus</i>	annual	Euphorbiaceae
cudweed, purple	<i>Gnaphalium purpureum</i>	annual	Asteraceae
dandelion, common*	<i>Taraxacum officinale</i>	perennial	Asteraceae
deadnettle, purple	<i>Lamium purpureum</i>	annual/biennial	Lamiaceae
dock, broadleaf*	<i>Rumex obtusifolius</i>	perennial	Polygonaceae
dock, curly*	<i>Rumex crispus</i>	perennial	Polygonaceae
dogfennel***	<i>Eupatorium capillifolium</i>	perennial	Asteraceae
evening primrose, cutleaf*	<i>Oenothera laciniata</i>	annual	Asteraceae
false dandelion, Carolina*	<i>Tragopogon dubius</i>	biennial	Asteraceae
fiddleneck, common	<i>Amsinckia intermedia</i>	annual	Boraginaceae
fireweed	<i>Epilobium angustifolium</i>	perennial	Onagraceae
fleabane, annual*	<i>Erigeron annuus</i>	annual	Asteraceae
goldenrod, Canada*	<i>Solidago canadensis</i>	perennial	Asteraceae
goldenrod, Missouri*	<i>Solidago missouriensis</i>	perennial	Asteraceae
goldenrod, rigid	<i>Solidago rigida</i>	perennial	Asteraceae

Table 3: Broadleaf Weeds Controlled (Cont.)

Weed Species			
Common Name	Scientific Name	Life Cycle***	Plant Family
Rate Range: 1.5 to 2.1 pints (24 to 34 fluid oz) per acre (Cont.)			
hawkweed, orange*,**	<i>Hieracium aurantiacum</i>	perennial	Asteraceae
hawkweed, yellow*,**	<i>Hieracium pratense</i>	perennial	Asteraceae
henbit*	<i>Lamium amplexicaule</i>	annual/biennial	Lamiaceae
horseweed*	<i>Conyza canadensis</i>	annual	Asteraceae
ironweed, tall	<i>Vernonia gigantea</i>	perennial	Asteraceae
ironweed, western	<i>Vernonia baldwinii</i>	perennial	Asteraceae
knapweed	<i>Centaurea sp.</i>	biennial	Asteraceae
knapweed, brown	<i>Centaurea jacea</i>	perennial	Asteraceae
knapweed, diffuse*,**	<i>Centaurea diffusa</i>	biennial	Asteraceae
knapweed, Russian*,**	<i>Acroptilon repens</i>	perennial	Asteraceae
knapweed, spotted*,**	<i>Centaurea stoebe</i>	biennial	Asteraceae
kudzu*,**	<i>Pueraria montana</i>	perennial	Fabaceae
lambsquarters, common*	<i>Chenopodium album</i>	annual	Chenopodiaceae
lespedeza, annual	<i>Lespedeza striata</i>	annual	Fabaceae
lettuce, prickly*	<i>Lactuca serriola</i>	annual	Asteraceae
locust	<i>Robinia pseudoacacia</i>	perennial	Fabaceae
marshelder, annual*	<i>Iva annua</i>	annual	Asteraceae
mayweed, scentless*	<i>Tripleurospermum perforata</i>	annual	Asteraceae
mayweed, stinking*,**	<i>Anthemis cotula</i>	annual	Asteraceae
medic, black*	<i>Medicago lupulina</i>	perennial	Fabaceae
mexicantea	<i>Dysphania ambrosioides</i>	annual/ perennial	Chenopodiaceae
mullein****	<i>Verbascum spp.</i>	biennial	Scrophulariaceae
mugwort	<i>Artemisia vulgaris</i>	Perennial	Asteraceae
partridgepea*	<i>Chamaecrista fasciculata</i>	annual	Fabaceae
plantain, broadleaf*	<i>Plantago major</i>	perennial	Plantaginaceae
plantain, buckhorn*	<i>Plantago lanceolata</i>	perennial	Plantaginaceae
sicklepod*	<i>Senna obtusifolia</i>	annual	Fabaceae
smartweed, Pennsylvania	<i>Polygonum pennsylvanicum</i>	annual	Polygonaceae
sneezeweed, bitter*	<i>Helenium amarum</i>	annual	Asteraceae
soda apple, tropical*,**	<i>Solanum viarum</i>	perennial	Solanaceae
sowthistle, perennial*,**	<i>Sonchus arvensis</i>	perennial	Asteraceae
sowthistle, prickly*	<i>Sonchus asper</i>	annual	Asteraceae
Spanish needles	<i>Bidens bipinnata</i>	annual	Asteraceae
starthistle, yellow*,**	<i>Centaurea solstitialis</i>	annual	Asteraceae
St. Johnswort, common	<i>Hypericum perforatum</i>	perennial	Clusiaceae
sunflower, common*	<i>Helianthus annua</i>	annual	Asteraceae
teasel*	<i>Dipsacus spp.</i>	biennial	Dipsacaceae
thistle, Canada*,**	<i>Cirsium arvense</i>	perennial	Asteraceae
vervain, blue*	<i>Verbena hastata</i>	perennial	Asteraceae
vervain, hoary*	<i>Verbena stricta</i>	perennial	Asteraceae
yarrow, common*	<i>Achillea millefolium</i>	perennial	Asteraceae

*These plants are indicated to be invasive in the USDA-NRCS, PLANTS Database (<http://plants.usda.gov/index.html>).

**Plants designated as noxious weeds in at least one state (PLANTS Database, USDA-NRCS, <http://plants.usda.gov/index.html>).

***Spot treatment at rates up to 4.2 pints (68 fl oz) per acre of ForeFront HL may be particularly effective against dense patches of perennial broadleaf plants.

****apply during rosette stage

Susceptible Brush such as Multiflora rose:

Individual Plant Treatment - Use 24 fl oz (0.25% v/v) of ForeFront HL tank-mixed with Remedy® Ultra at 2 pints (32 fluid oz) (0.25% v/v) per 100 gallons of water. Apply from full leaf through flowering. For best results, delay treatment for 9-12 months after mowing. Spot treatments may be applied at an equivalent broadcast rate of up to 4.2 pints (68 fluid oz) of ForeFront HL per acre per annual growing season; however, not more than 50% of an acre may be treated at that rate.

Broadcast - Use 1.2 to 2.1 pints (19 to 34 fluid oz) of ForeFront HL tank mixed with Remedy Ultra at 1 to 2 pints (16 to 32 fluid oz) per acre. Apply from full leaf through flowering. For best results, delay treatment for 9-12 months after mowing.

Precautions for Avoiding Spray Drift

Avoid application under conditions that may allow spray drift because very small quantities of spray, which may not be visible, may seriously injure crops. This product should be applied only 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 and other plants) is minimal (e.g., when wind is blowing away from the sensitive areas. A drift control aid may be added to the spray solution to further reduce the potential for drift. If a drift control aid is used, follow the use directions and precautions on the manufacturer's label. Do not use a thickening agent with Microfoil, Thru-Valve booms, or other spray delivery systems that cannot accommodate thickened spray solutions.

Ground Equipment: With ground equipment, spray drift can be lessened by keeping the spray boom as low as possible; by applying 10 gallons or more of spray per acre; by keeping the operating spray pressures at the manufacturer's specified minimum pressures for the specific nozzle type used (low pressure nozzles are available from spray equipment manufacturers); and by spraying when the wind velocity is low (follow state regulations). Avoid calm conditions which may be conducive to thermal inversions. Direct sprays no higher than the tops of target vegetation and keep spray pressures low enough to provide coarse spray droplets to minimize drift.

Aerial Application: Avoid spray drift at the application site. The interaction of many equipment-and-weather-related factors determine the potential for spray drift. Users are responsible for considering all these factors when making decisions.

The following drift management requirements must be followed to avoid off-target drift movement from aerial applications:

1. The distance of the outer most operating nozzles on the boom must not exceed 75% of wingspan or 85% of rotor diameter.
2. Nozzles should be pointed backward parallel with the air stream or not pointed downwards more than 45 degrees.

State regulations must be followed.

The applicator should be familiar with and take into account the information covered in the following **Aerial Drift Reduction Advisory**. This information is advisory in nature and does not supersede mandatory label requirements.

Aerial Drift Reduction Advisory

Information on Droplet Size: The most effective way to reduce drift potential is to apply large droplets. The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential, but will not prevent drift if applications are made improperly, or under unfavorable environmental conditions (see Wind, Temperature and Humidity, and Temperature Inversions).

Controlling Droplet Size:

- **Volume** - Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.
- **Pressure** - Do not exceed the nozzle manufacturer's specified pressures. For many nozzle types lower pressure produces larger droplets. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.
- **Number of Nozzles** - Use the minimum number of nozzles that will provide uniform coverage.
- **Nozzle Orientation** - Orienting nozzles so that the spray is released parallel to the airstream produced larger droplets than other orientations and is the recommended practice. Significant deflection from horizontal will reduce droplet size and increase drift potential.
- **Nozzle Type** - Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. Solid stream nozzles oriented straight back produce the largest droplets and the lowest drift.

Boom Length: The distance of the outer most operating nozzles on the boom must not exceed 75% of wingspan or 85% of rotor 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 to 10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given speed. Application should be avoided below 2 mph due to variable wind direction and high inversion potential. **Note:** Local terrain such as valleys and ravines can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

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

Temperature Inversions: Applications should not occur during a local, low level 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 the smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

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