



U.S. ENVIRONMENTAL PROTECTION AGENCY

Office of Pesticide Programs
Registration Division (7505C)
1200 Pennsylvania Ave., N.W.
Washington, D.C. 20460

NOTICE OF PESTICIDE:
 X Registration
 — Reregistration

(under FIFRA, as amended)

EPA Reg. Number:

62719-597

Date of Issuance:

JUL 23 2008

Term of Issuance:

Conditional
- Expires July 20, 2013

Name of Pesticide Product:

GF-2050

Name and Address of Registrant (include ZIP Code):

Dow AgroSciences
9330 Zionsville Road
Indianapolis, IN 46268-1054

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

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

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

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

1. Submit and/or cite all data required for registration/reregistration of your product when the Agency requires all registrants of similar products to submit data.
2. Submit the following outstanding product chemistry data requirement: one year storage stability and corrosion characteristics study.
3. To the label add the EPA Registration Number 62719-597, and the complete establishment number.
4. Revise your Storage and Disposal Box according to PR Notice 2007 – 4 by adding the batch number to your label before shipping.
5. The skin sensitization study (Local Lymph Node Assay, MRID# 47328608) is classified as unacceptable. The LLNA assay was initially validated by ICCVAM in 1998 for single component chemicals. It has recently undergone an additional validation step in 2008

looking at mixtures through the ICCVAM process and found to have significant limitations in terms of accuracy and sensitivity. Add the following statement to the First Aid Statements, "Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals." Alternatively, the Registrant may submit a guinea pig study following OPPTS 870.2600;OECD 406 guidelines. Additional label changes may be necessary, after the guinea pig study is submitted and reviewed.

- 6. On page 18 of label, under "Avoiding Injury to Non-Target Plants:", add "site" or similar word to the sentence "Trees adjacent to or in a treated site, etc."

You will submit one copy of your final printed labeling before you release the product for shipment. A stamped copy of labeling is enclosed for your records. If you have any questions please contact Phil Errico at 703-305-6663.

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

Signature of Approving Official:

Joanne I. Miller, Product Manager (23)
Herbicide Branch, Registration Division (7505P)

Date:

JUL 23 2008

(Base label for rigid containers 5 gal or less):

GF-2050

Specialty Herbicide

For control of susceptible weeds and certain woody plants, including invasive and noxious weeds, on rangeland, permanent grass pastures (including grasses grown for hay), Conservation Reserve Program (CRP) acres, non-cropland areas including industrial sites, rights-of-way (such as roadsides, electric utility and communication transmission lines, pipelines, and railroads), non-irrigation ditch banks, natural areas (such as wildlife management areas, wildlife openings, wildlife habitats, recreation areas, campgrounds, trailheads and trails), and grazed areas in and around these sites.

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

GROUP	4	HERBICIDE
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Active Ingredients:

Potassium salt of 2-pyridine carboxylic acid, 4-amino-3,6-dichloro-	62.13%
Metsulfuron methyl	9.45%
Other Ingredients	28.42%
Total	100.0%

Acid Equivalent: aminopyralid (2-pyridine carboxylic acid, 4-amino-3,6-dichloro-) - 52.5%

Contains 0.62 pound potassium salt of aminopyralid active ingredient (0.525 pound acid equivalent) and 0.0945 pound metsulfuron methyl per pound of product

Keep Out of Reach of Children

WARNING AVISO

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.)

Precautionary Statements

Hazard to Humans and Domestic Animals

Causes Substantial but Temporary Eye Injury • Harmful if Swallowed

Do not get in eyes or on clothing. Avoid contact with skin.

Personal Protective Equipment (PPE)

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Shoes plus socks
- Chemical resistant gloves
- Protective eyewear

ACCEPTED
with COMMENTS
In EPA Letter Dated
JUL 23 2008
 Under the Federal Insecticide,
 Fungicide, and Rodenticide Act
 as amended, for the pesticide
 registered under EPA Reg. No.
 62719-597

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

User Safety Recommendations

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

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 on skin: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

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

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.

Environmental Hazards

Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwater or rinsate.

Agricultural Use Requirements

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. Refer to label booklet under "Agricultural Use Requirements" in the "Directions for Use" section for information about this standard.

Storage and Disposal

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

Pesticide Storage: Store in original container only. In case of spill, contain material and dispose as waste.

Pesticide Disposal: Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

Container Reuse: Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available.

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.

Refer to label booklet for Directions for Use.

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Notice: Read the entire label. Use only according to label directions. **Before using this product, read Warranty Disclaimer, Inherent Risks of Use, and Limitation of Remedies at end of label booklet. If terms are unacceptable, return at once unopened.**

In case of emergency endangering health or the environment involving this product, call 1-800-992-5994. If you wish to obtain additional product information, visit our web site at www.dowagro.com.

Agricultural Chemical: Do not ship or store with food, feeds, drugs or clothing.

EPA Reg. No. 62719-XXX

EPA Est. _____

**Produced for
Dow AgroSciences LLC
9330 Zionsville Road
Indianapolis, IN 46268**

Net Weight_____

(Base label for nonrigid containers any size):

GF-2050

Specialty Herbicide

For control of susceptible weeds and certain woody plants, including invasive and noxious weeds, on rangeland, permanent grass pastures (including grasses grown for hay), Conservation Reserve Program (CRP) acres, non-cropland areas including industrial sites, rights-of-way (such as roadsides, electric utility and communication transmission lines, pipelines, and railroads), non-irrigation ditch banks, natural areas (such as wildlife management areas, wildlife openings, wildlife habitats, recreation areas, campgrounds, trailheads and trails), and grazed areas in and around these sites.

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

GROUP	4	HERBICIDE
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Active Ingredients:

Potassium salt of 2-pyridine carboxylic acid, 4-amino-3,6-dichloro-	62.13%
Metsulfuron methyl.....	9.45%
Other Ingredients	<u>28.42%</u>
Total	100.0%

Acid Equivalent: aminopyralid (2-pyridine carboxylic acid, 4-amino-3,6-dichloro-) - 52.5%

Contains 0.62 pound potassium salt of aminopyralid active ingredient (0.525 pound acid equivalent) and 0.0945 pound metsulfuron methyl per pound of product

Keep Out of Reach of Children

WARNING AVISO

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.)

Precautionary Statements

Hazard to Humans and Domestic Animals

Causes Substantial but Temporary Eye Injury • Harmful if Swallowed

Do not get in eyes or on clothing. Avoid contact with skin.

Personal Protective Equipment (PPE)

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Shoes plus socks
- Chemical resistant gloves
- Protective eyewear

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

User Safety Recommendations

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

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 on skin: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

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

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.

Environmental Hazards

Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwater or rinsate.

Agricultural Use Requirements

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. Refer to label booklet under "Agricultural Use Requirements" in the "Directions for Use" section for information about this standard.

Storage and Disposal

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

Pesticide Storage: Store in original container only. In case of spill, contain material and dispose as waste.

Pesticide Disposal: Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

Container Reuse: Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available.

Refer to label booklet for Directions for Use.

Notice: Read the entire label. Use only according to label directions. **Before using this product, read Warranty Disclaimer, Inherent Risks of Use, and Limitation of Remedies at end of label booklet. If terms are unacceptable, return at once unopened.**

In case of emergency endangering health or the environment involving this product, call 1-800-992-5994. If you wish to obtain additional product information, visit our web site at www.dowagro.com.

Agricultural Chemical: Do not ship or store with food, feeds, drugs or clothing.

**Produced for
Dow AgroSciences LLC
9330 Zionsville Road
Indianapolis, IN 46268**

Net Weight _____

(Base label for refillable rigid containers greater than 5 gal):

GF-2050

Specialty Herbicide

For control of susceptible weeds and certain woody plants, including invasive and noxious weeds, on rangeland, permanent grass pastures (including grasses grown for hay), Conservation Reserve Program (CRP) acres, non-cropland areas including industrial sites, rights-of-way (such as roadsides, electric utility and communication transmission lines, pipelines, and railroads), non-irrigation ditch banks, natural areas (such as wildlife management areas, wildlife openings, wildlife habitats, recreation areas, campgrounds, trailheads and trails), and grazed areas in and around these sites.

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Precautionary Statements

Hazard to Humans and Domestic Animals

Causes Substantial but Temporary Eye Injury • Harmful if Swallowed

Do not get in eyes or on clothing. Avoid contact with skin.

Personal Protective Equipment (PPE)

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Shoes plus socks
- Chemical resistant gloves
- Protective eyewear

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

User Safety Recommendations

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

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 on skin: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

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

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.

Environmental Hazards

Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwater or rinsate.

Agricultural Use Requirements

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. Refer to label booklet under "Agricultural Use Requirements" in the "Directions for Use" section for information about this standard.

Storage and Disposal

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

Pesticide Storage: Store in original container only. In case of spill, contain material and dispose as waste.

Pesticide Disposal: Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

Container Reuse: 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 a mix tank. Fill the container about 10% full with water and, if possible, spray all sides while adding water. If practical, 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.

Refer to label booklet for Directions for Use.

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In case of emergency endangering health or the environment involving this product, call 1-800-992-5994. If you wish to obtain additional product information, visit our web site at www.dowagro.com.

Agricultural Chemical: Do not ship or store with food, feeds, drugs or clothing.

EPA Reg. No. 62719-XXX

EPA Est. _____

**Produced for
Dow AgroSciences LLC
9330 Zionsville Road
Indianapolis, IN 46268**

Net Weight _____

(Base label for nonrefillable rigid containers larger than 5 gal):

GF-2050

Specialty Herbicide

For control of susceptible weeds and certain woody plants, including invasive and noxious weeds, on rangeland, permanent grass pastures (including grasses grown for hay), Conservation Reserve Program (CRP) acres, non-cropland areas including industrial sites, rights-of-way (such as roadsides, electric utility and communication transmission lines, pipelines, and railroads), non-irrigation ditch banks, natural areas (such as wildlife management areas, wildlife openings, wildlife habitats, recreation areas, campgrounds, trailheads and trails), and grazed areas in and around these sites.

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

GROUP	4	HERBICIDE
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Total	100.0%

Acid Equivalent: aminopyralid (2-pyridine carboxylic acid, 4-amino-3,6-dichloro-) - 52.5%

Contains 0.62 pound potassium salt of aminopyralid active ingredient (0.525 pound acid equivalent) and 0.0945 pound metsulfuron methyl per pound of product

Keep Out of Reach of Children

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Precautionary Statements

Hazard to Humans and Domestic Animals

Causes Substantial but Temporary Eye Injury • Harmful if Swallowed

Do not get in eyes or on clothing. Avoid contact with skin.

Personal Protective Equipment (PPE)

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Shoes plus socks
- Chemical resistant gloves
- Protective eyewear

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

User Safety Recommendations

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

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 on skin: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

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

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.

Environmental Hazards

Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwater or rinsate.

Agricultural Use Requirements

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. Refer to label booklet under "Agricultural Use Requirements" in the "Directions for Use" section for information about this standard.

Storage and Disposal

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

Pesticide Storage: Store in original container only. In case of spill, contain material and dispose as waste.

Pesticide Disposal: Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

Container Reuse: Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available.

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 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.

Refer to label booklet for Directions for Use.

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Notice: Read the entire label. Use only according to label directions. **Before using this product, read Warranty Disclaimer, Inherent Risks of Use, and Limitation of Remedies at end of label booklet. If terms are unacceptable, return at once unopened.**

In case of emergency endangering health or the environment involving this product, call 1-800-992-5994. If you wish to obtain additional product information, visit our web site at www.dowagro.com.

Agricultural Chemical: Do not ship or store with food, feeds, drugs or clothing.

EPA Reg. No. 62719-XXX

EPA Est. _____

**Produced for
Dow AgroSciences LLC
9330 Zionsville Road
Indianapolis, IN 46268**

Net Weight _____

(cover):

GF-2050

Specialty Herbicide

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

GROUP	4	HERBICIDE
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Active Ingredients:

Potassium salt of 2-pyridine carboxylic acid, 4-amino-3,6-dichloro-	62.13%
Metsulfuron methyl	9.45%
Other Ingredients	<u>28.42%</u>
Total	100.0%

Acid Equivalent: aminopyralid (2-pyridine carboxylic acid, 4-amino-3,6-dichloro-) - 52.5%

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 Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. Refer to label booklet under "Agricultural Use Requirements" in the "Directions for Use" section for information about this standard.

Refer to label booklet for Directions for Use.

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Agricultural Chemical: Do not ship or store with food, feeds, drugs or clothing.

EPA Reg. No. 62719-XXX

EPA Est. _____

**Produced for
Dow AgroSciences LLC
9330 Zionsville Road
Indianapolis, IN 46268**

Net Weight _____

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(Page 1 through end):

Precautionary Statements

Hazards to Humans and Domestic Animals**WARNING**

Causes Substantial but Temporary Eye Injury • Harmful if Swallowed

Do not get in eyes or on clothing. Avoid contact with skin.

Personal Protective Equipment (PPE)

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Shoes plus socks
- Chemical resistant gloves
- Protective eyewear

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

User Safety Recommendations

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

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 on skin: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

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

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.

Environmental Hazards

Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwater or rinsate.

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 24 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

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: Store in original container only. In case of spill, contain material and dispose as waste.

Pesticide Disposal: Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

Nonrefillable rigid containers 5 gallons or less:

Container Reuse: Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available.

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.

Nonrefillable nonrigid containers:

Container Reuse: Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available.

Refillable rigid containers larger than 5 gal:

Container Reuse: 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 a mix tank. Fill the container about 10% full with water and, if possible, spray all sides while adding water. If practical, 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.

Nonrefillable rigid containers larger than 5 gal:

Container Reuse: Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available.

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 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.

GF-2050 specialty herbicide may be applied by aerial or ground equipment to control susceptible broadleaf weeds and certain woody plants, including invasive and noxious weeds on rangeland, permanent grass pastures (including grass grown for hay), CRP acres, non-cropland areas including industrial sites, rights-of-way (such as roadsides, electric utility and communication transmission lines, pipelines, and railroads), non-irrigation ditch banks, natural areas (such as wildlife management areas, wildlife openings, wildlife habitats, recreation areas, campgrounds, trailheads and trails), and grazed areas in and around these sites without injury to most grasses.

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. GF-2050 can be used to the waters edge. Do not apply directly to water and take precautions to minimize spray drift onto water.

Resistance Management Guidelines

- This product contains two herbicides with different modes of action. Development of plant populations resistant to the mode of action of aminopyralid is usually not a problem on rangeland, permanent grass pastures, Conservation Reserve Program (CRP), or non-cropland sites since these sites receive infrequent pesticide applications. There may be resistant weed biotypes to metsulfuron and adequate control of these species cannot be expected.
- 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 labeled 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

Maximum Application Rate: On all labeled use sites do not broadcast apply more than 3.3 ounce/acre of GF-2050 per year. The total amount of GF-2050 applied broadcast, as a re-treatment, and/or spot treatment cannot exceed 3.3 oz of product per acre per year. Spot treatments may be applied at an equivalent broadcast rate of up to 6.6 oz product of GF-2050 per acre per annual growing season; however, not more than 50% of an acre may be treated at that rate. Do not apply more than a total of 3.3 ounce/acre of GF-2050 per annual growing season as a result of broadcast, spot or repeat applications.

- **Avoiding Injury to Non-Target Plants:** Do not aerially apply GF-2050 within 50 feet of a border downwind (in the direction of wind movement), or allow spray drift to come in contact with, any broadleaf crop or other desirable broadleaf plants, including, but not limited to, alfalfa, cotton, dry beans, flowers, grapes, lettuce, potatoes, radishes, soybeans, sugar beets, sunflowers, tobacco, tomatoes or other broadleaf or vegetable crop, fruit trees, ornamental plants, or soil where sensitive crops are growing or will be planted. Avoid application under conditions that may allow spray drift because very small quantities of spray may seriously injure susceptible crops. Read and consider the "Precautions for Avoiding Spray Drift and Spray Drift Advisory" at the end of this label to help minimize the potential for spray drift.
- **GF-2050 is highly active against many broadleaf plant species.** Do not use this product on areas where loss of broadleaf plants, including legumes, cannot be tolerated.
- **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.
- Do not apply to irrigated land where the tailwater will be used to irrigate crops.
- Do not use GF-2050 **on lawns**, ornamental plantings, walks, driveways, tennis courts, **golf courses**, athletic fields, commercial sod operations, or other high-maintenance, fine turfgrass areas, or similar areas.
- **Trees** adjacent to or in a treated can occasionally be affected by root uptake of GF-2050. Do not apply GF-2050 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.
 - Do not apply or drain or flush equipment on or near desirable trees or other plants, or on areas where their roots extend, or in locations where the product may be washed or moved into contact with their roots, as injury or loss of desirable trees or other plants may result.
- **Seeding Legumes:** Do not plant forage legumes until a soil bioassay has been conducted to determine if aminopyralid or metsulfuron concentration remaining in the soil will adversely affect the legume establishment.
- Under certain conditions such as heavy rainfall, high pH, prolonged cold weather, or wide fluctuations in day/night temperatures prior to or soon after GF-2050 application, temporary discoloration and/or grass injury may occur. GF-2050 should not be applied to grass that is stressed by severe weather conditions, drought, low fertility, water-saturated soil, disease, or insect damage, as grass injury may result. Severe winter stress, drought, disease, or insect damage before or following application also may result in grass injury.
- Do not use on **grasses grown for seed.**
- Do not apply to frozen ground as surface runoff may occur.
- Do not apply to snow-covered ground.
- **Grazing and Haying Restrictions:** There are no restrictions on grazing or grass hay harvest following application of GF-2050 at labeled rates. Cutting hay too soon after spraying weeds will reduce weed control. Wait 14 days after herbicide application to cut grass hay to allow herbicide to work. Do not transfer grazing animals from areas treated with GF-2050 to areas where sensitive broadleaf crops 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.
- **Aminopyralid in Plant Residues or Manure:**
 - ◆ Do not use 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 or mulch that will be applied to areas where commercially grown mushrooms or susceptible broadleaf plants may be grown.

- ◆ Do not spread manure from animals that have grazed or consumed forage or eaten hay from treated areas within the previous 3 days on land used for growing susceptible broadleaf crops.
- ◆ Manure from animals that have grazed forage or eaten hay harvested from treated areas within the previous 3 days may only be used on pasture grasses, grass grown for seed, and wheat.
- ◆ Do not plant a broadleaf crop in fields treated in the previous year with manure from animals that have grazed forage or eaten hay harvested from treated areas until an adequately sensitive field bioassay is conducted to determine that the aminopyralid concentration 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 and metsulfuron in plant residues or manure is more rapid under warm, moist soil conditions and may be enhanced by supplemental irrigation.
- **Crop Rotation:** Do not rotate to any crop from rangeland, permanent pasture or CRP acres within one year following treatment. Do not plant a broadleaf crop until an adequately sensitive field bioassay shows that the level of aminopyralid or metsulfuron present in the soil will not adversely affect that broadleaf crop.
- To reduce the potential for movement of treated soil due to wind erosion, do not apply to powdery dry or light sandy soils until they have been stabilized by rainfall, trashy mulch, reduced tillage, or other cultural practices. Injury to immediately adjacent crops may occur when treated soil is blown onto land used to produce crops other than pasture, rangeland or CRP.

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 at any time between harvest of the treated crop and the planting of the intended rotational 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.

Sprayer Clean-Out Instructions

It is recommended to use separate spray equipment on highly sensitive crops such as tobacco, soybeans, peanuts and tomatoes.

Do not use spray equipment used to apply GF-2050 for other applications to land planted to, or to be planted to, broadleaf plants unless it has been determined that all residues of this herbicide has been removed by thorough cleaning of equipment.

Equipment used to apply GF-2050 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 in non-cropland area 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.
1. Do not apply this product with mist blower systems that deliver very fine spray droplets. Use of mist blower equipment can reduce control achieved with the herbicide and increase spray drift potential.

Application Methods

Apply the specified rate of GF-2050 as a coarse low-pressure spray. Do not apply this product with mist blower systems that deliver very fine spray droplets. 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 3.3 ounces per acre annual growing season. Use sufficient spray volume to thoroughly and uniformly wet foliage and stems.

Spot Application: Spot treatments may be applied at an equivalent broadcast rate of up to 6.6 oz of product per acre per annual growing season; however, not more than 50% of an acre may be treated at that rate. Do not apply more than a total of 3.3 ounce/acre of GF-2050 per annual growing season as a result of broadcast, spot or repeat applications. Spray volume should be sufficient to thoroughly and uniformly wet weed foliage, but not to the point of runoff. Repeat treatments may be made, but the total amount of GF-2050 applied must not exceed 3.3 ounce/acre per year. To prevent misapplication, spot treatments should be applied with a calibrated sprayer.

In general for spot treatments, mix 2.5 oz for weeds and 3.3 oz for brush of GF-2050 per 100 gallons of water (this is assuming you are applying 100 gallons per acre).

Mixing Instructions

1. Fill the tank 1/4 to 1/3 full of water (If using liquid nitrogen fertilizer solution in place of water, see Tank Mixtures sections for additional details).
2. While agitating, add the required amount of GF-2050.
3. Continue agitation until the GF-2050 is fully dispersed, at least 5 minutes.
4. Once the GF-2050 is fully dispersed, maintain agitation and continue filling tank with water. GF-2050 should be thoroughly mixed with water before adding any other material.
5. As the tank is filling, add tank mix partners (if desired) then add the necessary volume of spray adjuvants. Always add spray adjuvants last.
6. If the mixture is not continuously agitated, settling will occur. If settling occurs, thoroughly re-agitate before using.
7. Apply GF-2050 spray mixture within 24 hours of mixing to avoid product degradation.
8. If GF-2050 and a tank mix partner are to be applied in multiple loads, pre-slurry the GF-2050 in clean water prior to adding to the tank. This will prevent the tank mix partner from interfering with the dissolution of the GF-2050.

Spray Adjuvants

Unless otherwise directed, applications of GF-2050 must include either a crop oil concentrate or a nonionic surfactant. In addition, an ammonium nitrogen fertilizer can be used unless specifically prohibited by tank mix partner labeling. If another herbicide is tank mixed with GF-2050, select adjuvants authorized for use with both products. Products must contain only EPA-exempt ingredients (40 CFR 1001).

Petroleum Crop Oil Concentrate (COC) or Methylated Seed Oil (MSO)

- Apply at 1% v/v (1 gallon per 100 gallons spray solution) or 2% under arid conditions.
- MSO adjuvants may be used at 0.5% v/v (0.5 gallons per 100 gallons spray solution) if specifically noted on adjuvant product labeling.
- Oil adjuvants must contain at least 80% high quality, petroleum (mineral) or modified vegetable seed oil with at least 15% surfactant emulsifiers.

Nonionic Surfactant (NIS)

- Apply at 0.25% v/v (1 quart per 100 gallons spray solution) or 0.5% under arid conditions.

- Surfactant products must contain at least 60% nonionic surfactant with a hydrophilic/lipophilic balance (HLB) greater than 12.

Ammonium Nitrogen Fertilizer

- Use 2 quarts/acre of a high-quality urea ammonium nitrate (UAN), such as 28%N or 32%N, or 2 pounds/acre of a spray grade ammonium sulfate (AMS). Use 4 quarts/acre UAN or 4 pounds/acre AMS under arid conditions.

Special Adjuvant Types

- Combination adjuvant products may be used at doses that provide the required amount of NIS, COC, MSO and/or ammonium nitrogen fertilizer. Consult product literature for use rates and restrictions.

Exceptions: (1) On Fescue pastures use 1/2 to 1 pint non-ionic surfactant per 100 gallons; (2) on Timothy pastures use 1/2 pint non-ionic surfactant per 100 gallons.

- Antifoaming agents may be used if needed.
- Do not use low rates of liquid fertilizer as a substitute for surfactant .
- Do not use GF-2050 with spray additives that reduce the pH of the spray solution to below 3.0.

Tank Mixing with Other Herbicides: GF-2050 at rates of up to 3.3 ounce/acre may be mixed with labeled rates of other herbicides registered for application on all labeled use sites. GF-2050 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 Mix Compatibility Testing: Perform a jar test prior to mixing in a spray tank to ensure compatibility of GF-2050 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 remix 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 aid may resolve mix incompatibility. If the mixture is incompatible do not use that tank mix partner in tank mixtures.

Note: Foliar-applied liquid fertilizers themselves can cause yellowing of the foliage of forage grasses and other vegetation.

Seeding grasses:

Preemergence: GF-2050 may be applied in the spring or early summer, depending on the target weed species, and grass planted in the fall when conditions are favorable for grass establishment.

Application Timing – Established Pastures, Rangeland and CRP

GF-2050 may be applied to established native grasses such as wheatgrasses, bluestems and grama, and on other established pasture grasses such as bermudagrass, bluegrass, orchardgrass, bromegrass, fescue and timothy that were planted the previous growing season (or earlier) and are fully tillered, unless otherwise directed on this label. Specific application timing information on several of these grass species follows:

- GF-2050 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.
- Varieties and species of forage grasses differ in their tolerance to herbicides. When using GF-2050 on a particular grass for the first time, limit use to a small area. If no injury occurs throughout the season, larger acreage may be treated.
- Application of GF-2050 to Pensacola bahiagrass, ryegrass (Italian or perennial) and Garrison's creeping foxtail may cause severe injury to and/or loss of pastures.

Timothy Precautions:

Timothy should be at least 6 inches tall at application and be actively growing. Applications of GF-2050 to timothy under any other conditions may cause crop yellowing and/or stunting. To minimize these symptoms, take the following precautions:

- do not use more than 2.5 ounce/acre of GF-2050
- tank mix GF-2050 with 2,4-D
- use the lowest recommended rate for target weeds
- use a non-ionic surfactant at 1/2 pint per 100 gallons (1/16% v/v)
- make applications in the late summer or fall
- do not use surfactant when liquid nitrogen is used as a carrier
- do not use a spray adjuvant other than non-ionic surfactant

Fescue Precautions:

GF-2050 may temporarily stunt tall fescue, cause it to turn yellow, or cause seed head suppression. To minimize these symptoms, take the following precautions:

- do not use more than 2 ounce/acre of GF-2050
- tank mix GF-2050 with 2,4-D
- use the lowest recommended rate for target weeds
- use a non-ionic surfactant at 1/2 to 1 pint per 100 gallons of spray solution (1/16 to 1/8% v/v)
- make application later in the spring after the new growth is 5 to 6 inches tall, or in the fall
- do not use surfactant when liquid nitrogen is used as a carrier
- do not use a spray adjuvant other than non-ionic surfactant

The first cutting yields may be reduced due to fescue seed head suppression resulting from treatment with GF-2050 at labeled rates. However, this could be beneficial because in tall fescue infected with the fungal endophyte (*Neotyphodium* spp.), the endophyte is concentrated in the seed and cattle grazing plants with the seed head will get the maximum exposure to the endophyte. Increased levels of ingestions of the fungal endophyte can lead to reduced weight gain and conception rates in cattle. Since the first cutting of hay or grazing is often delayed in the spring until long after seed head development, GF-2050 could potentially be used as a tool to reduce the development of the seed head and thereby reducing the amount of the endophyte that would be consumed by livestock when grazing standing forage or hay.

Seed Head Suppression: If the intent is to control weeds and reduce fescue seed heads, apply GF-2050 at 2.0-2.5 ounce/acre early to fescue that is less than 6 inches tall.

Pensacola bahiagrass control in established Bermudagrass pasture:

Apply GF-2050 at 2.5 ounce/acre after green-up in the spring, but before bahiagrass seedhead formation. Application should be made when moisture is sufficient to enhance grass growth.

GF-2050 is very effective for removal of bahiagrass from bermudagrass pastures. In highly infested pastures, the use of GF-2050 can clear the areas of useful forage until the bermudagrass has time to cover the area. Therefore, GF-2050 treatments should be spread out over a period of years. Do not apply to an entire farm or ranch in one year. Fertilization (particularly with nitrogen and potassium) and/or replanting may accelerate the process of reestablishment of bermudagrass.

Under heavy bahiagrass pressure, grazing pressure, or adverse weather conditions (heat and drought), bahiagrass regrowth may occur.

GF-2050 should not be used for the control of common or Argentine bahiagrass. Also, GF-2050 should not be applied in liquid fertilizer solutions for Pensacola bahiagrass control, as poor control and/or regrowth may occur.

Use Rates and Timing

GF-2050 may be applied post emergence as a broadcast spray or as a spot application to control weeds including, but not limited to, those listed on this label. When a rate range is given use the higher rate to control weeds at advanced growth stages, or under less than favorable growing conditions, or for longer residual control. Best results are obtained when spray volume is sufficient to provide uniform coverage of treated weeds. For optimum uptake and translocation of GF-2050, avoid mowing, haying, shredding, burning or soil disturbance in treated areas for at least 14 days following application.

GF-2050 also provides preemergence control of emerging seedlings of susceptible weeds, and re-growth of certain perennial weeds following application. Preventing establishment of weeds will depend upon application rate, season of application, and environmental conditions after application.

GF-2050 can provide long-term control of susceptible 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 weed control is most effective where grass vegetation is allowed to recover from overgrazing, drought, etc., and compete with weeds.

GF-2050 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 GF-2050, it is important that other vegetation management practices, including proper grazing management, biological control agents, replanting, fertilization, prescribed fire, etc., be used in appropriate sequences and combinations to further alleviate the adverse effects of weeds on desirable plant species and to promote development of desired plant communities. Agricultural and natural resources specialists with federal and state government agencies can provide guidance on best management practices and development of integrated vegetation management programs.

Weeds Controlled

General Mix of Weeds: GF-2050 at 2.0 ounce/acre is the standard rate to provide control of most pasture weeds when applied early in the season. If a certain weed is dominant in the pasture, use the rate in Table 1 for that species. The addition of 1 pint/acre of 2,4-D amine may broaden the weed spectrum.

For rates for specific weeds, see Table 1. The life cycle is included for each weed species. The general timing of application for each life cycle is as follows:

Annuals: Use lower rates when weeds are less than 6 inches and actively growing. Increase rate as season progresses and plants become more mature.

Biennials: Apply in the spring and early summer to rosette or bolting plants or in the fall to seedlings and rosettes before ground is frozen. Use higher rates after bolting through early flower.

Perennials: Apply to vegetative stage prior to bloom. Use higher rate when weeds are larger.

For best results, most weeds should be treated when they are actively growing and under conditions favorable for growth. Use a higher rate in the rate range indicated when growing conditions are less than favorable (drought conditions), weeds are large and mature, weed density and foliage cover is high and canopy height is tall, or when residual control is desired. GF-2050 also provides preemergence control of germinating seeds or seedlings of susceptible weeds following application.

Table 1: Weeds Controlled with GF-2050

Note: Weeds marked with a * indicate more information is included in the specific weed problems section after the table.

Broadleaf Weeds Controlled by GF-2050

Weed Species				GF-2050 rate oz product/a
Common Name	Scientific Name	Life Cycle	Plant Family	
actinomeris, wingstem	<i>Verbesina alternifolia</i>	perennial	Asteraceae	3.0
amaranth, spiny	<i>Amaranthus spinosus</i>	summer annual	Amaranthaceae	1.5-2.0
arrowgrass, seaside	<i>Triflochin maritima</i>	perennial	Juncaginaceae	3.0-3.3
aster	<i>Aster spp.</i>	perennial	Asteraceae	1.5-2.0
babysbreath	<i>Gypsophila paniculata</i>	perennial	Caryophyllaceae	2.5-3.0
bedstraw	<i>Galium spp.</i>	perennial	Rubiaceae	2.0-2.5
bittercress	<i>Cardimane spp</i>	perennial	Brassicaceae	2.0-2.5
blackeyed-Susan	<i>Rudbeckia hirta</i>	annual	Asteraceae	1.5-2.0
brackenfern	<i>Pteridium spp.</i>	perennial	Dennstaedtiaceae	2.5-3.3
broomweed, annual	<i>Amphiachyris dracunculoides</i>	annual	Asteraceae	1.0-1.5
bur buttercup (testiculate)	<i>Ranunculus testiculatus</i>	annual	Ranunculaceae	1.0-1.5
burclover	<i>Medicago spp</i>	annual	Fabaceae	1.5-2.0
burdock, Common	<i>Arctium minus</i>	biennial	Asteraceae	2.0-2.5
buttercup, hairy	<i>Ranunculus sardous</i>	perennial	Ranunculaceae	1.0-1.5
buttercup, tall	<i>Ranunculus acris</i>	perennial	Ranunculaceae	2.0-2.5
camelthorn	<i>Alhagi pseudalhagi</i>	perennial	Fabaceae	2.0-3.0
camphorweed	<i>Heterotheca subaxillaris</i>	summer annual	Asteraceae	2.0-3.0
campion, bladder†	<i>Silene vulgaris</i>	perennial	Caryophyllaceae	2.0-2.5
caraway, wild	<i>Carum carvi</i>	biennial	Apiaceae	2.5-3.0
carrot, wild	<i>Daucus carota</i>	biennial	Apiaceae	2.0-2.5
catchfly, conical	<i>Silene conoidea</i>	annual	Caryophyllaceae	1.0-1.5
chamomile	<i>Matricaria spp</i>	annual	Asteraceae	2.5-3.0
chickweed, common	<i>Stellaria media</i>	Winter annual	Caryophyllaceae	3.0
chicory	<i>Cichorium intybus</i>	perennial	Asteraceae	1.5-2.0
cinquefoil*	<i>Potentilla spp</i>	perennial	Rosaceae	2.0-2.5
clover, sweet	<i>Melilotus officinalis</i>	biennial	Fabaceae	2.5-3.0
clover, white	<i>Trifolium repens</i>	perennial	Fabaceae	1.5-2.0
cockle, corn	<i>Agrostemma githago</i>	annual	Caryophyllaceae	2.0-3.0
cocklebur	<i>Xanthium strumarium</i>	annual	Asteraceae	1.5-2.0
coreopsis, plains	<i>Coreopsis tinctoria</i>	annual	Asteraceae	2.0-3.0
cowcockle	<i>Vaccaria pyramidata</i>	annual	Caryophyllaceae	1.5-2.0
crazyweed, silky	<i>Oxytropis Lambertii</i>	perennial	Fabaceae	2.0-2.5
croton, woolly	<i>Croton capitatus</i>	annual	Euphorbiaceae	1.5-2.0
crownvetch	<i>Securigera varia</i>	perennial	Fabaceae	1.5-2.0
crupina, common	<i>Crupina vulgaris</i>	perennial	Asteraceae	3.0-3.3

cudweed, purple	<i>Gnaphalium purpureum</i>	annual	Asteraceae	2.0-2.5
daisy, oxeye*	<i>Leucanthemum vulgare</i>	perennial	Asteraceae	2.5-3.3
dandelion, common	<i>Taraxacum officinale</i>	perennial	Asteraceae	1.5-2.0
dock	<i>Rumex spp</i>	perennial	Polygonaceae	2.0-2.5
dyer's woad ‡	<i>Istis tinctoria</i>	perennial	Brassicaceae	3.3
evening primrose, cutleaf	<i>Oenothera laciniata</i>	annual	Asteraceae	1.5-2.0
false dandelion, Carolina	<i>Tragopogon dubius</i>	biennial	Asteraceae	1.5-2.0
falseflax, Smallseed	<i>Camelina microcarpa</i>	annual/biennial	Brassicaceae	1.5-2.0
fiddleneck, common	<i>Amsinckia intermedia</i>	annual	Boraginaceae	1.5-2.0
filaree, redstem	<i>Erodium cicutarium</i>	annual/biennial	Geraniaceae	3.0-3.3
fireweed	<i>Epilobium angustifolium</i>	perennial	Onagraceae	2.5-3.0
fleabane, annual	<i>Erigeron annuus</i>	annual	Asteraceae	1.5-2.0
garlic. wild	<i>Allium vineale</i>	perennial	Liliaceae	1.5-2.0
geranium, Carolina	<i>Geranium carolinianum</i>	Winter annual	Geraniaceae	1.5-2.0
goldenrod spp	<i>Solidago canadensis</i>	perennial	Asteraceae	2.0-2.5
gumweed, curlycup	<i>Grindelia squarrosa</i>	biennial	Asteraceae	2.0-2.5
halogeton	<i>Halogeton glomeratus</i>	annual	Chenopodiaceae	3.0-3.3
hawkweed, orange*	<i>Hieracium aurantiacum</i>	perennial	Asteraceae	2.5-3.3
hawkweed, yellow*	<i>Hieracium pratense</i>	perennial	Asteraceae	2.5-3.3
hemlock, poison	<i>Conium maculatum</i>	perennial	Apiaceae	3.0-3.3
henbane, black	<i>Hyoscyamus niger</i>	annual/biennial	Solanaceae	2.5-3.0
henbit	<i>Lamium amplexicaule</i>	annual/biennial	Lamiaceae	2.0-2.5
horsemint (beebalm)	<i>Monarda spp</i>	annual	Lamiaceae	1.5-2.0
horsenettle, Carolina	<i>Solanum carolinense</i>	perennial	Solanaceae	2.0-2.5
horseweed (marestail)	<i>Coryza canadensis</i>	annual	Asteraceae	1.5-2.0
houndstongue*	<i>Cynoglossum officinale</i>	biennial	Boraginaceae	2.5-3.3
ironweed, tall	<i>Vernonia gigantea</i>	perennial	Asteraceae	2.0-3.0
ironweed, western	<i>Vernonia baldwinii</i>	perennial	Asteraceae	2.0-3.0
knapweed	<i>Centaurea sp.</i>	biennial	Asteraceae	2.5-3.3
knapweed, brown	<i>Centaurea jacea</i>	perennial	Asteraceae	2.5-3.3
knapweed, diffuse*	<i>Centaurea diffusa</i>	biennial	Asteraceae	2.5-3.3
knapweed, Russian*	<i>Acroptilon repens</i>	perennial	Asteraceae	2.5-3.3
knapweed, spotted*	<i>Centaurea stoebe</i>	biennial	Asteraceae	2.5-3.3
knotweed, prostrate	<i>Polygonum aviculare</i>	annual	Polygonaceae	3.0
kochia*	<i>Kochia scoparia</i>	annual	Chenopodiaceae	1.5-2.0
lady's thumb	<i>Polygonum persicaria</i>	annual	Polygonaceae	1.5-2.0
lambsquarters, common	<i>Chenopodium album</i>	annual	Chenopodiaceae	2.0-2.5
lespedeza, annual	<i>Lespedeza striata</i>	annual	Fabaceae	2.0-2.5
lespedeza, sericea*	<i>Lespedeza cuneata</i>	perennial	Fabaceae	2.5-3.0
lettuce, Miner's	<i>Montia perfoliata</i>	annual	Portulacaceae	1.5-2.0
lettuce, prickly*	<i>Lactuca serriola</i>	annual	Asteraceae	1.5-2.0
locoweed	<i>Astragalus spp.</i>	perennial	Fabaceae	2.0-2.5
loosestrife, purple	<i>Lythrum salicaria</i>	perennial	Lythraceae	3.0-3.3

marshelder, annual‡	<i>Iva annua</i>	annual	Asteraceae	2.0-2.5
mayweed, scentless	<i>Tripleurospermum perforata</i>	annual	Asteraceae	1.5-2.0
mayweed, stinking	<i>Anthemis cotula</i>	annual	Asteraceae	3.0-3.3
medic, black	<i>Medicago lupulina</i>	perennial	Fabaceae	2.0-2.5
mexicantea	<i>Dysphania ambrosioides</i>	annual/ perennial	Chenopodiaceae	2.0-2.5
mullein*	<i>Verbascum spp.</i>	biennial	Scrophulariaceae	2.0-3.3
mustard, blue*	<i>Chorispora tenella</i>	annual	Brassicaceae	1.5-2.0
mustard, tumble/Jim Hill	<i>Sisymbrium altissimum</i>	Winter annual	Brassicaceae	1.5-2.0
mustard, wild	<i>Brassica kaber</i>	annual	Brassicaceae	1.5-2.0
ox tongue, bristly	<i>Picris echioides</i>	biennial	Asteraceae	2.5-3.0
parsnip, Wild	<i>Pastinaca sativa</i>	biennial	Apiaceae	2.0-3.0
partridgepea	<i>Chamaecrista fasciculata</i>	annual	Fabaceae	2.5-3.0
pepperweed, perennial‡*	<i>Lepidium latifolium</i>	perennial	Brassicaceae	3.3
pigweeds	<i>Amaranthus spp</i>	annual	Amaranthaceae	1.5-2.0
plantain, broadleaf	<i>Plantago major</i>	perennial	Plantaginaceae	2.0-2.5
plantain, buckhorn	<i>Plantago lanceolata</i>	perennial	Plantaginaceae	2.0-2.5
purslane, common	<i>Portulaca oleracea</i>	annual	Portulacaceae	1.5-2.0
ragweed, common	<i>Ambrosia artemisiifolia</i>	annual	Asteraceae	2.0-2.5
ragweed, western	<i>Ambrosia psilostachya</i>	perennial	Asteraceae	2.0-2.5
ragwort, tansy	<i>Senecio jacobaea</i>	perennial	Asteraceae	2.5-3.0
rush skeletonweed	<i>Chondrilla juncea</i>	perennial	Asteraceae	2.5-3.0
salsify, Western‡	<i>Tragopogon dubius</i>	biennial	Asteraceae	3.0-3.3
scouringrush‡	<i>Equisetum hyemale</i>	grass	Equisetaceae	3.3
shephardspurse	<i>Capsella bursa-pastoris</i>	Winter annual	Brassicaceae	1.5-2.0
sicklepod	<i>Senna obtusifolia</i>	annual	Fabaceae	2.5-3.0
Sida, arrowleaf	<i>Sida rhombifolia</i>	annual	Malvaceae	2-2.5
smartweed, Pennsylvania	<i>Polygonum pensylvanicum.</i>	annual	Polygonaceae	1.5-2.0
snakeweed, broom*	<i>Gutierrezia sarothrae</i>	perennial	Asteraceae	3.0
sneezeweed, bitter	<i>Helenium amarum</i>	annual	Asteraceae	1.0-1.5
snow-on-the-mountain	<i>Euphorbia marginata</i>	annual	Euphorbiaceae	2.0-2.5
soda apple, tropical*	<i>Solanum viarum</i>	perennial	Solanaceae	2.5-3.0
sorrel, red	<i>Rumex acetosella</i>	perennial	Polygonaceae	2.0-2.5
sowthistle, perennial	<i>Sonchus arvensis</i>	perennial	Asteraceae	2.0-2.5
sowthistle, prickly	<i>Sonchus asper.</i>	annual	Asteraceae	1.5-2.0
spanish needles	<i>Bidens bipinnata</i>	annual	Asteraceae	2.0-2.5
St. Johnswort, common	<i>Hypericum perforatum</i>	perennial	Clusiaceae	2.5-3.0
starthistle, purple*	<i>Centaurea calcitrapa</i>	biennial	Asteraceae	1.5-2.0
star-thistle, Malta*	<i>Centaurea melitensis</i>	annual	Asteraceae	1.5-2.0
starthistle, yellow*	<i>Centaurea solstitialis</i>	annual	Asteraceae	1.5-2.0
sunflower, common	<i>Helianthus annua</i>	annual	Asteraceae	1.5-2.0
tansy, common	<i>Tanacetum vulgare</i>	perennial	Asteraceae	3.0-3.3
teasel	<i>Dipsacus spp.</i>	biennial	Dipsacaceae	2.0-3.0

thistle, Russian*	<i>Salsola iberica</i>	annual	Chenopodiaceae	1.5-2.0
thistle, artichoke	<i>Cynara cardunculus</i>	perennial	Asteraceae	2.0-3.0
thistle, bull*	<i>Cirsium vulgare</i>	biennial	Asteraceae	1.0-2.5
thistle, Canada*	<i>Cirsium arvense</i>	perennial	Asteraceae	2.0-3.3
thistle, Italian	<i>Carduus pycnocephalus</i>	annual	Asteraceae	2.0-3.0
thistle, musk*	<i>Carduus nutans</i>	biennial	Asteraceae	1.0-2.5
thistle, plumeless*	<i>Carduus acanthoides</i>	biennial	Asteraceae	1.0-2.5
thistle, scotch	<i>Onopordum acanthium</i>	biennial	Asteraceae	1.5-2.5
thistle, woolly distaff	<i>Carthamus lanatus</i>	annual	Asteraceae	1.5-2.0
vervain‡	<i>Verbena spp.</i>	perennial	Asteraceae	2.0-2.5
vetch, common*	<i>Vicia sativa</i>	annual	Fabaceae	1.5-2.0
wallflower, bushy	<i>Erysimum repandum</i>	annual	Brassicaceae	1.5-2.0
waterpod	<i>Ellisia nyctelea</i>	annual	Brassicaceae	1.5-2.0
whitetop (hoary cress)*	<i>Cardaria draba</i>	perennial	Brassicaceae	3.3
woodsorrel, yellow	<i>Oxalis stricta</i>	perennial	Oxalidaceae	3.0-3.3
wormwood, absinth*	<i>Artemisia absinthium</i>	perennial	Asteraceae	3.0-3.3
Yankee weed	<i>Eupatorium compositifolium</i>	perennial	Asteraceae	3.0-3.3
yarrow, common	<i>Achillea millefolium</i>	perennial	Asteraceae	1.5-2.0

‡ : This symbol denotes weed suppression which is a reduction in weed competition compared to untreated areas. A second treatment may be necessary. The addition of 0.5 lbs ae/acre of 2,4-D may improve initial control.

Hawkweed, orange or yellow: Apply GF-2050 at 2.5 to 3.3 ounce/acre to plants in the bolting stage of development.

Houndstongue: Apply 2.5 ounce/acre to rosettes. As plant bolts, increase the rate to 3.0 to 3.3 ounce/acre up to early bud stage. Add 1 quart of 2,4-D/acre after the bud stage.

Knapweeds, diffuse and spotted: Apply GF-2050 at 2.5 to 3.3 ounce/acre when plants are actively growing with the optimum time of application occurring from rosette to the bolting stages of development or in the fall. Plants will be controlled by mid-summer and fall applications even though plants may not show any changes in form or stature the year of application.

Knapweed, Russian: Apply GF-2050 at 2.5 to 3.3 ounce/acre to plants in the spring and summer to plants from early bud to flowering stage and to dormant plants in the fall.

Lespedeza, Sericea: Apply 2.5 to 3.0 ounce/acre beginning at flower bud initiation through the full bloom stage of growth.

Mullein: Apply to the 2.0 ounce/acre in the rosette stage in spring or fall. Use rates from 2.5 to 3.3 ounce/acre for bolting plants.

Oxeye daisy: Apply GF-2050 at 2.5 to 3.3 ounce/acre to plants in the prebud stage of development.

Pepperweed, perennial: Apply GF-2050 at 3.3 ounce/acre plus 2 lb ae/a 2, 4-D when plants are at early flowering through bloom for optimum control.

Russian thistle, kochia, and prickly lettuce: Naturally occurring resistant biotypes of these weeds to metsulfuron are known to occur. For best results, use GF-2050 at 1.5 to 2.0 ounces/acre in tank-mix with 2,4-D. Applications to these weeds should be made early to weeds less than 6 inches

Snakeweed, broom: Applications should be made in the fall at 3.0 ounces/acre. Spring applications will provide suppression only.

Soda apple, tropical: Apply GF-2050 at 2.5 to 3.0 ounce/acre at any growth stage, but application by flowering will reduce seed production potential.

Starthistle, malta, purple, and yellow: Apply GF-2050 at 1.5 to 2.0 ounce/acre to plants at the rosette through bolting growth stages.

Sulfur cinquefoil: Apply GF-2050 at 2.0 to 2.5 ounce/acre to plants in the prebud stage of development.

Thistle, Canada: Apply GF-2050 at 2.0 to 3.3 ounce/acre either in the spring or summer to fully emerged Canada thistle. The goal is to insure all plants have emerged and many of the thistles will be in the bud to early flower stage at this time. Applications are also effective in the fall before a killing frost. Use higher rates for older/dense stands or for longer residual control.

Thistles, Bull, musk, and plumeless: Apply GF-2050 at 1.0 to 2.0 ounce/acre in the spring and early summer to rosette or bolting plants or in the fall to seedlings and rosettes. Apply at 2.0 to 2.5 ounce plus 0.5 lb ae/acre 2,4-D when plants are at the late bolt through early flowering growth stages.

Whitetop: Apply 3.3 ounce/acre early in the spring to actively growing rosettes or to regrowth before the bud stage. Treatment after bloom is generally less effective and the addition of 2,4- D at 1 lb ae/acre are recommended. Treatments can also be made to fall regrowth before the first killing frost.

Wormwood, absinth: Apply 3.0 to 3.3 per acre before wormwood is 12 inches tall. When applying by air on CRP, coverage is important and a minimum of 3 GPA is specified. Remove old duff and litter by fire or mowing for best results. Fall applications are also effective if green regrowth is present.

Woody Plant Control:

Apply GF-2050 at 3.3 ounce/acre at the timing described below in Table 2.

Table 2: Woody Plant Control with GF-2050

Common Name	Scientific Name	Plant Family	Application Details
blackberry	<i>Rubus spp</i>	rosaceae	Apply when leaves are fully expanded and the plant has stopped rapid spring and early summer growth. Application after bloom and until frost is optimal. It is recommend that after mowing, shredding, or burning applications should wait until the next season and enough re-growth has occurred for good uptake and translocation..
buckbrush	<i>Symphoricarpos orbiculus</i>	caprifoliaceae	Apply in spring or early summer when new growth is 6-12 inches tall.
dewberry	<i>Rubus flagellaris</i>	rosaceae	Apply when leaves are fully expanded and the foliage is dark green, either before first flower or after fruit drop. Application after fruit drop is preferred until frost. It is recommend that after mowing, shredding, or burning applications should wait until the next season and enough re-growth has occurred for good uptake and translocation..
honey locust	<i>Gleditsia triacanthos</i>	fabaceae	Apply in spring when leaves are fully expanded and foliage is mature.
honeysuckle	<i>Lonicera japonica</i>	caprifoliaceae	Apply in spring when leaves are fully expanded and foliage is mature.
kudzu	<i>Pueraria montana</i>	fabaceae	Apply at or after bloom (July) in the summer until fall when the foliage begins to senesce. Kudzu should be actively growing; avoid treating when drought stressed.
locust, black	<i>Robinia pseudoacacia</i>	fabaceae	Apply in spring when leaves are fully expanded and foliage is mature.
mimosa	<i>Albizia julibrissin</i>	fabaceae	Apply after full leaf emergence in the spring until fall foliage color change.
redbud	<i>Cercis canadensis</i>	fabaceae	Apply after full leaf emergence in the spring until fall foliage color change.
rose, Cherokee	<i>Rosa laevigata</i>	rosaceae	Apply from full leaf through flowering. For best results, delay treatment for 9-12 months

			after mowing.
rose, multiflora	<i>Rosa multiflora</i>	rosaceae	Apply from full leaf through flowering. For best results, delay treatment for 9-12 months after mowing.
rose, prairie wild	<i>Rosa arkansana</i>	rosaceae	Apply from full leaf through flowering. For best results, delay treatment for 9-12 months after mowing.
snowberry, Western	<i>Symphoricarpos occidentalis</i>	caprifoliaceae	Add 1 lb ai/acre of 2,4-D ester. Apply in spring when leaves are fully expanded and foliage is mature
wisteria	<i>Wisteria brachybotrys</i>	fabaceae	Apply after full leaf emergence in the spring until fall foliage color change.
yucca‡	<i>Yucca glauca</i>	agavaceae	Add 1 lb ai/acre of 2,4-D ester to GF-2050 at 3.3 ounce/acre. Make applications from flower stalk elongation through seed pod development. Crop oil concentrate (COC), Methylated Seed Oil (MSO) or Methylated Seed Oil/Organosilicone (MSO/OS) are the preferred adjuvants. Aerial application is recommended with a minimum of 4 gallons per acre volume for dense yucca populations.

‡ : This symbol denotes weed suppression which is a reduction in weed competition compared to untreated areas. A second treatment may be necessary.

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 injure susceptible crops. This product should be applied only when the potential for drift to adjacent sensitive areas (e.g., residential areas, bodies of water, 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** - Orient nozzles so that the spray is released parallel to the airstream to produce larger droplets than other orientations. Significant deflection from horizontal will reduce droplet size and increase drift potential.
- **Nozzle Type** - Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. Solid stream nozzles oriented straight back produce the largest droplets and the lowest drift.

Boom Length: For some use patterns, reducing the effective boom length to less than 85% of the wingspan or rotor length may further reduce drift without reducing swath width.

Application Height: Applications should not be made at a height greater than 10 feet above the top of the largest plants unless a greater height is required for aircraft safety. Making applications at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

Swath Adjustment: When applications are made with a crosswind, the swath will be displaced downwind. Therefore, on the up and downwind edges of the field, the applicator must compensate for this displacement by adjusting the path of the aircraft upwind. Swath adjustment distance should increase, with increasing drift potential (higher wind, smaller drops, etc.).

Wind: Drift potential is lowest between wind speeds of 2 to 10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given speed. Application should be avoided below 2 mph due to variable wind direction and high inversion potential. **Note:** Local terrain 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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