

PM 23

62719-253

11-30-99

1 of 31

NOV 30 1999

Dennis H. Lade, Ph.D.
DOW AgroSciences LLC
9330 Zionsville Road
Indianapolis, IN 46268

Dear Dr. Lade:

Subject: Hornet®

EPA Registration No. 62719-253
Application and Letter Dated November 18, 1999,
Request To Amend Registration by Revising the
General Use Precautions, Rotational Crop Restrictions
and To Add Uses as Described in Your "Registraton
Notes"

The proposed subject amendments to the registration of
this pesticide product have been review and found acceptable
under the Federal Insecticide, Fungicide and Rodenticide Act
(FIFRA), as amended, provided that you:

- o Submit one (1) copy of your final printed labeling prior
to your shipment of the subject pesticide product under
the enclosed stamped labels.

If this condition is not complied with, the registration
will be subject to cancellation in accordance with FIFRA, section
6(e). Your release for shipment of the product constitutes
acceptance of this condition.

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

Sincerely yours,

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

Enclosure

CONCURRENCES

SYMBOL								
SURNAME								
DATE	Wilson:	Diskette:	flumetsulam:	02-18-99				

2 of 31

(Base Label):

00XXXXXX

[Insert 2-Point Black Line]

(Logo) **Dow AgroSciences**

Hornet*

A selective herbicide for the control of broadleaf weeds in field corn.

Active Ingredients:

flumetsulam: N-(2,6-difluorophenyl)-5-methyl-1,2,4-triazolo-[1,5a]-pyrimidine-2-sulfonamide	23.1%
clopyralid: 3,6-dichloro-2-pyridinecarboxylic acid	62.5%
Inert Ingredients	14.4%
Total Ingredients	100.0%

**ACCEPTED
with COMMENTS
In EPA Letter Dated
NOV 30 1999**

**Under the Federal Insecticide,
Fungicide, and Rodenticide Act
as amended, for the pesticide
registered under EPA Reg. No.
62719-253**

Contains 0.856 pounds of active ingredient per pound of product.

Precautionary Statements

Hazards to Humans and Domestic Animals

Keep Out of Reach of Children

DANGER PELIGRO

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

Causes Irreversible Eye Damage • Do Not Get In Eyes Or On Clothing • Harmful If Swallowed, Inhaled, Or Absorbed Through The Skin • May Cause Skin Sensitization Reactions In Certain Individuals

Avoid breathing vapors or spray mist and contact with skin, eyes, or clothing.

Personal Protective Equipment (PPE)

Applicators and other handlers must wear:

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

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, 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.
- 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 eyelids open and flush with a steady, gentle stream of water for 15 minutes. Get medical attention.

If swallowed: Do not induce vomiting. Call a physician or Poison Control Center. If available, administer activated charcoal (6-8 heaping teaspoonfuls) with a large quantity of water. Do not give anything by mouth to an unconscious person. Immediately transport to a medical care facility and see a physician.

If inhaled: Remove individual to fresh air. Get medical attention if breathing difficulty occurs. If not breathing, give artificial respiration, preferably cardiopulmonary resuscitation assistance, and get medical attention immediately.

If on skin: Immediately wash with plenty of soap and water. Get medical attention if irritation develops.

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 washwaters.

The active ingredients in this product are known to leach through soil into ground water under certain conditions as a result of agricultural use. Use of this product where soils are permeable, particularly where the water table is shallow, may result in leaching to ground water.

Caution should be exercised when handling this product at mixing and loading sites to prevent contamination of groundwater supplies. Use of closed systems for mixing or transferring this pesticide will reduce the probability of spills. Placement of the mixing/loading equipment on an impervious pad to contain spills will help prevent groundwater contamination.

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.

Refer to label booklet for Directions for Use including Storage and Disposal.

Notice: Read the entire label. Use only according to label directions. Before buying or using this product, read "Warranty Disclaimer" and "Limitation of Remedies" inside label booklet.

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. 62719-253

XX XX
EPA Est. _____

Superscripts correspond to places 7 & 8 of lot number
900-000000 / 00000000

*Trademark of Dow AgroSciences LLC
Dow AgroSciences LLC • Indianapolis, IN 46268 U.S.A.

[Insert 2-Point Black Line]

Broadleaf Blend Herbicide
Net Weight 6 lb (or) contains 5, 9.6 oz Water Soluble Packets

[Insert Bar Code FPO]

[Insert DOT shipping classification and diamond(s)]

Lot

(Datapack cover):

(Logo) **Dow AgroSciences**

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Inert Ingredients	14.4%
Total Ingredients	100.0%

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U.S. Patents 4,818,273 and 4,954,163

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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 inside of label booklet for additional precautionary information including Personal Protective Equipment (PPE), User Safety Recommendations and Directions for Use including Storage and Disposal.

Notice: Read the entire label. Use only according to label directions. **Before buying or using this product, read "Warranty Disclaimer" and "Limitation of Remedies" inside label booklet.**

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Avoid breathing vapors or spray mist and contact with skin, eyes, or clothing.

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Applicators and other handlers must wear:

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

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Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
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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 washwaters.

The active ingredients in this product are known to leach through soil into ground water under certain conditions as a result of agricultural use. Use of this product where soils are permeable, particularly where the water table is shallow, may result in leaching to ground water.

Caution should be exercised when handling this product at mixing and loading sites to prevent contamination of groundwater supplies. Use of closed systems for mixing or transferring this pesticide will reduce the probability of spills. Placement of the mixing/loading equipment on an impervious pad to contain spills will help prevent groundwater contamination.

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.

Handling Precautions if Product is Packaged in Water Soluble Packets: Do not remove water soluble packet from overpack except for immediate use. Do not allow water soluble packet to come into contact with water prior to use. Do not handle water soluble packet with wet hands or wet gloves. Carefully reseal package containing unopened water soluble packets and protect package from moisture.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your state or tribe, consult the agency responsible for pesticide regulation.

Agricultural Use Requirements

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

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 48 hours.

Exception: If the product is soil-injected or soil incorporated, the Worker Protection Standard, under certain circumstances, allows workers to enter the treated area if there will be no contact with anything that has been treated.

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
- Waterproof gloves
- Shoes plus socks
- Protective eyewear

Storage And Disposal

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

Storage: Store in original container in secured dry storage area. Prevent cross-contamination with other pesticides and fertilizers. Do not store above 122°F for extended periods of time. If container is damaged or spill occurs, use product immediately or contain with absorbent materials and dispose as waste.

Water Soluble Packaging: Packets may become brittle when stored below 32°F. Handle carefully when frozen to avoid breakage or allow package to warm above 32°F before handling.

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

Container Disposal (water soluble packaging): When all packets are used, dispose of empty package in a sanitary landfill or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

Container Disposal (plastic jug): Triple rinse (or equivalent). Then offer for recycling or reconditioning or puncture and dispose of in a sanitary landfill or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

General: Consult federal, state, or local disposal authorities for approved alternative procedures.

General Information

Hornet* broadleaf blend herbicide is a selective herbicide for broadleaf weed control in field corn. Hornet may be applied as a preplant surface, preplant incorporated, preemergence, or postemergence treatment. Soil surface treatments may be applied with water, liquid fertilizer, or impregnated on dry fertilizer. Postemergence treatments should be applied with water. Absorption of Hornet occurs from both shoot and root uptake. Susceptible weeds exposed to Hornet stop growing and either die or remain non-competitive with the crop. Hornet provides residual control of weeds that may emerge after application. Adequate soil moisture is necessary for optimal activation because uptake and translocation of Hornet involves uptake by emerging shoots and/or roots.

Use directions in Dow AgroSciences supplemental labeling may supersede directions or limitations in this labeling.

General Use Precautions

This product may not be mixed or loaded within 50 feet of any wells (including abandoned wells and drainage wells), sink holes, perennial or intermittent streams and rivers, and natural or impounded lakes and reservoirs. This setback does not apply to properly capped or plugged abandoned wells and does not apply to impervious pad or properly diked mixing/loading areas.

Operations that involve mixing, loading, rinsing, or washing of this product into or from pesticide handling or application equipment or containers within 50 feet of any well are prohibited unless conducted on an impervious pad constructed to withstand the weight of the heaviest load that may be positioned on or moved across the pad. Such a pad shall be designed and maintained to contain any product spills or equipment leaks, container or equipment rinse or washwater, and rainwater that may fall on the pad. Surface water shall not be allowed to either flow over or from the pad, which means the pad must be self contained. The pad shall be sloped to facilitate material removal. An unroofed pad shall be of sufficient capacity to contain at a minimum 110% of the capacity of the largest pesticide container or application equipment on the pad. A pad that is covered by a roof of sufficient size to completely exclude precipitation from contact with the pad shall have a minimum containment capacity of 100% of the capacity of the largest pesticide container or application equipment on the pad. Containment capacities as described above shall be maintained at all times. The above specific minimum containment capacities do not apply to vehicles when delivering pesticide shipments to the mixing/loading site.

States may have in effect additional requirements regarding wellhead setbacks and operational containment.

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

Do not use flood irrigation to apply or incorporate this product.

Product must be used in a manner that will prevent back-siphoning in wells, spills or improper disposal of excess pesticide, spray mixtures or rinsates.

Application Precautions

- Uneven application or uneven incorporation of Hornet can result in erratic weed control or crop injury. Over application may result in crop injury or rotational crop damage from soil residue.

Adverse Weather Conditions

- **Soil Application Only:** Extended cold, wet conditions (soil temperatures below 50°F and excessive rainfall with wet soil conditions), following soil application of Hornet to field corn, which persist during germination and/or early crop development may result in crop injury. Injury symptoms, which include yellowing of leaves and/or crop stunting, are usually temporary and affected corn plants usually recover without affecting yield.
- When applications are made under adverse (dry or cold) conditions or when large weeds or less susceptible species are treated, only weed suppression may be observed. Weed suppression is a visual reduction in weed competition (reduced population, size, and/or vigor) as compared to an untreated area. Degree of control can be increased by applying Hornet under favorable growing conditions (i.e., adequate moisture and temperature), and by using a higher rate in the specified rate range.
- Dry weather following preplant surface or preemergence applications of Hornet may reduce effectiveness. If sufficient activating rainfall or overhead irrigation does not occur within 7 to 10 days of application, rotary hoe, harrow, or shallowly cultivate to incorporate the herbicide lightly into the soil. Use a preplant incorporated application if furrow irrigation is used or when a period of dry weather is predicted after application.
- Avoid application when air temperature is near freezing or when freezing conditions are expected for several days following application.
- Postemergence application of Hornet to corn that is stressed or damaged by conditions such as cold weather, hot weather (>90°F), hail, drought, water saturated soil, disease, or insects may cause crop injury.

Tank Mixing

Do not tank mix Hornet with Bladex, Basagran, or Laddock herbicides as severe crop injury may occur. Other than the aforementioned exception, Hornet may be tank mixed or followed by other overlay or postemergence treatments registered for use on corn to broaden the spectrum of weeds controlled. This product may be applied in tank mix combination with labeled rates of other products provided (1) the tank mix product is labeled for the timing and method of application for the use site to be treated; and (2) tank mixing is not prohibited by the label of the tank mix product; and (3) the tank mix combination is compatible as determined by a "jar test" described in the "Tank Mix Compatibility Testing" section below.

Tank Mixing Precautions:

- Read carefully and follow all applicable use directions, precautions, and limitations on the respective product labels.
- Do not tank mix Hornet with Bladex, Basagran, Laddock, or Lightning herbicides as severe crop injury may occur. (See instructions for Postemergence Treatments, Tank Mixing.)
- Do not exceed recommended application rates. Do not tank mix with another pesticide product that contains the same active ingredient as this product unless the label of either tank mix partner specifies the maximum dosages that may be used.
- 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 instructions for Sprayer Clean-Out.)

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

**Soil-Restrictions and Precautions for Soil Surface Applications of Hornet
(Not Applicable to Postemergence Use)**

- **Corn Planting Depth:** Minimum planting depth should be at least 1 1/2 inches.
- Do not use on soil apply to peat or muck soils as reduced weed control will result. (May be used postemergence.)
- Do not apply to areas where the soil pH is greater than 7.8 as this may result in increased crop injury.
- Do not apply to a soil containing greater than 5% organic matter if the soil pH is below 5.9 as reduced weed control will result.
- Use of Hornet in soil-applied treatments on soils with less than 1.5% organic matter (O.M.) may result in crop injury. Apply as a soil-treatment to fields which have less than 1.5% O.M. only if the risk of crop injury is acceptable.
- If any herbicide with ALS (acetolactate synthase) inhibition mode of action such as Pursuit, Preview, Canopy, Classic, Scepter, or Squadron herbicide, etc., was applied the previous year, apply Hornet to corn only if the rotational restrictions applicable to corn for the preceding product has been met.
- Corn growing in calcareous soils or soils with historically high salt content (soil test results for salinity indicating electrical conductivity greater than 1.0 mmho/cm) may exhibit chlorosis and/or stunting resulting from reduced availability of iron, zinc or other micro nutrients essential for normal crop vigor and growth. The presence of soil-active herbicides, such as Hornet may cause additional stress under these conditions resulting in increased leaf chlorosis and/or crop stunting. This added stress may retard crop recovery, especially under conditions of limited rainfall. In fields which contain calcareous or high salt content soils, growers should plant "IR" or IMR" designated varieties, commonly referred to as "imidazolinone resistant" corn hybrids. On these type soils, the likelihood of crop injury can also be reduced by using the lower end of the recommended rate range for the soil type and/or by applying Hornet 10-14 days prior to planting.

Soil Insecticide Advisories for Soil Applications of Hornet:

When Hornet is used for soil applied broadleaf weed control in corn:

- Soil applied organophosphate insecticides should be applied in a T-band or a band to avoid potential crop injury.
- Soil insecticides from other classes of chemistry may be applied in-furrow, T-banded, or banded.
- Terbufos (Counter insecticide products) or phorate (Thimet insecticide products) should not be used.

Soil Insecticide Advisories for Postemergence Applications of Hornet:

- Do not apply Hornet postemergence if corn was previously treated with Counter insecticide or Thimet insecticide as severe crop injury may result.
- Postemergence applications of Hornet to corn previously treated with T-band, band, or in-furrow applications of other organophosphate insecticides such as Lorsban* insecticide, Aztec, Fortress, or Dyfonate insecticides may cause temporary crop injury.

Foliar Insecticide Advisories for Postemergence Applications of Hornet

- Do not tank mix Hornet with foliar postemergence organophosphate insecticides as severe crop injury may result. To avoid crop injury, apply the foliar organophosphate insecticide treatment at least 10 days before or 10 days after the application of Hornet.
- Hornet may be tank mixed with non-organophosphate foliar insecticides provided they are labeled for use with postemergence corn herbicides.

Use with other Products

- Corn previously treated with Hornet that is stressed or damaged by conditions such as cold weather, hail, drought, water saturated soil, disease, or insects should not be treated with Accent, Beacon, Permit, Exceed, or Basis herbicides, or other herbicides with ALS inhibition mode of action as this may cause further crop injury.
- Do not foliar apply Hornet to corn that exhibits herbicide injury from previous applications made to the current or preceding crop.

Use with Genetically Modified Corn Varieties

- If an "IR" or "IMR" designated hybrid (commonly referred to as "imidazolinone resistant") is planted, any organophosphate insecticide, including Counter or Thimet, can be applied according to label directions without increasing the likelihood of injury to corn from Hornet. The adverse interaction between Counter or Thimet insecticide and Hornet **does not** occur in corn hybrids identified as "IR" or "IMR". This adverse interaction **does** occur in imidazolinone tolerant "IT", "PT" hybrids which are considered as "standard" hybrids regarding this effect. "IR" or "IMR" hybrids may also be planted to reduce injury to corn from preemergence treatments of Hornet on soils with less than 1.5% organic matter or pH greater than 7.8.

Maximum Application Rate

- Do not exceed a total application rate of 4.8 oz per acre of Hornet (0.07 lb a.i. of flumetsulam) in a single crop year.
- Multiple applications of Hornet within a growing season can be made as a soil application followed by a postemergence application, or as multiple postemergence applications. Do not exceed the cumulative rate of 0.07 pound per acre active ingredient of flumetsulam per single crop year if a postemergence application of Hornet is made following a soil application of a flumetsulam-containing herbicide or with a postemergence herbicide containing flumetsulam (See table below to calculate cumulative flumetsulam amount per season.).
- Do not exceed a cumulative amount of 0.25 pound a.i. per acre of clopyralid per single crop year. (See table below to calculate cumulative clopyralid amount per season.)

Examples: 3.2 ounces of Hornet contains 0.047 lb flumetsulam and 0.125 lb clopyralid.
2.9 ounces of Accent Gold herbicide contains 0.035 lb flumetsulam and 0.094 lb clopyralid.

Herbicide	Unit of Measure	Flumetsulam (lb a.i./ unit of measure)	Clopyralid (lb a.i./unit of measure)
Hornet	1 ounce	0.0145	0.039
Python* WDG	1 ounce	0.05	---
Scorpion* III	1 ounce	0.0058	0.0156
Accent Gold	1 ounce	0.012	0.032
Broadstrike*+Dual®	1 pint	0.025	---
Broadstrike SF+Dual	1 pint	0.031	---
Stinger*	1 fluid ounce	---	0.023

Maximum active ingredient allowed per season: Flumetsulam = 0.07 lb/acre
Clopyralid = 0.25 lb/acre

Other Precautions and Restrictions

- Do not apply Hornet to sweet corn or popcorn.
- **Hybrid Seed Production:** Corn inbred lines grown for hybrid seed production may be injured by Hornet. Inbred lines should be thoroughly tested for crop tolerance before treating large acreage. While growers are not prohibited from using Hornet on seed corn, **Dow AgroSciences will not accept responsibility for any crop injury arising from the use of Hornet on field corn grown for seed.**
- **Preharvest interval:** An interval of at least 85 days is required between application of Hornet and field corn harvest.
- **Do not aerially apply Hornet unless permitted by EPA approved supplemental labeling.**
- **Avoid all direct or indirect contact with nontarget plants.** Do not apply near desirable vegetation. Allow adequate distance between target area and desirable plants under conditions of application to minimize potential exposure.
- **Crop Residues from Treated Areas:** Crop residues from treated areas cannot be used for composting or mulching on ground where susceptible crops may be grown the following season. To promote herbicide decomposition, plant material should be evenly incorporated or burned. Adequate moisture is also required to promote breakdown of plant residues which contain clopyralid.
- **Do not move treated soil.** Avoid situations where soil particles may blow into areas where susceptible crops are grown. The hazard of movement of this product on dust is reduced if treated fields are irrigated or if rain occurs shortly after application.
- **Do not apply under conditions that favor runoff or wind erosion of soil containing Hornet to nontarget areas. To prevent off-site movement due to runoff or wind erosion:**
 - Avoid treating powdery dry or light sandy soils when conditions are favorable for wind erosion. Under these conditions, the soil surface should first be settled by rainfall or irrigation.
 - Do not apply to impervious substrates such as paved or highly compacted surfaces or frozen or snow covered ground.
 - Do not apply to soils when saturated with water.
 - Do not use tailwater from the first flood or furrow irrigation of treated fields to treat nontarget crops unless at least 1/2 inch of rainfall has occurred between application and the first irrigation.
- **Do not apply when weather conditions favor drift to nontarget sites.** Spray drift of Hornet to emerged soybeans or soil to which soybeans will be planted during the same growing season may cause soybean injury.
- **Read and follow these advisories to minimize drift to nontarget areas.**
 - Minimize drift by using sufficient spray volume to ensure adequate coverage with large-droplet size sprays.
 - Use low pressure application equipment capable of producing a large-droplet spray. Do not use nozzles that produce a fine-droplet spray. Droplet size has been shown to be the single most important factor affecting drift from ground applications.
 - While increasing droplet size does reduce the potential for spray drift, larger droplets do not eliminate drift if environmental or application conditions are inappropriate for application.
 - Use larger capacity nozzles to increase flow rate rather than increasing spray pressure.
 - Keep height of ground-driven spray booms as low as possible above the target to minimize exposure to evaporation and wind while still providing good coverage. Applications made late in the growing season with excessive boom heights drastically increase the potential for spray drift.
 - Do not apply when wind is gusting or wind speed exceeds 15 mph as uneven spray coverage and drift may result. Avoid application to border rows adjacent to susceptible crops such as soybeans, field peas, or sunflowers under windy conditions unless one of the following drift management steps is taken:
 - (1) application is made only when the wind direction is such that the susceptible crop is up-wind from the treatment area (wind blowing from the susceptible crop toward the treated crop); or
 - (2) the applicator leaves an adequate buffer zone between the treated crop and the susceptible crop and coarse or low drift nozzle configurations are used.
 A drift control or deposition agent may be used with this product to aid in reducing spray drift due to wind when making applications adjacent to susceptible crops, but may not be effective after prolonged pumping of the spray mix.

- On calm days with little or no wind, check for temperature inversions before making herbicide applications. Temperature inversions occur under calm conditions with little or no wind and air temperature increases with increasing height above the ground. Inversion conditions may be indicated by a layer of fog or mist near the ground and, under clear conditions, may be detected by use of a smoke column. A temperature inversion is indicated when smoke does not rise in a column, but layers at some level above the ground. Do not apply herbicides if temperature inversion conditions exist in the treatment area.

Sprayer Cleanup

To avoid injury to or exposure of nontarget crops, thoroughly clean and drain spray equipment used to apply Hornet after use. Cleaning should occur as soon as possible after application of Hornet. Spray equipment should be cleaned after use with Hornet by the following procedure:

1. Drain any remaining Hornet from the spray tank and dispose of according to label disposal instructions.
2. Hose down the interior surfaces of the tank. Flush tank, hoses, boom, and nozzles with clean water for 10 minutes. Fill the tank with water and recirculate for 15 minutes. Spray part of the mixture through the hoses, boom, and nozzles and drain the tank. All rinse water must be disposed of in compliance with local, state, and federal guidelines.
3. Fill the tank with water and recirculate for 15 minutes. For optimum cleaning, a tank cleaner such as liquid ammonia (1 gallon per 100 gallons of water) or other commercial tank cleaner is recommended in the second rinse if the spray equipment will be used on crops other than field corn. Spray part of the mixture through the hoses, boom, and nozzles and drain the tank. All rinse water must be disposed of in compliance with local, state, and federal guidelines.
4. Remove the nozzles and screens and clean separately.
5. If the spray equipment will be used on crops other than field corn, repeat steps 1 and 2 again and thoroughly wash the spray mixture from the outside of spray tank and the boom.

Rotational Crop Restrictions

When tank mixing with companion herbicides, follow the most restrictive crop rotation guidelines on the label of each product used.

The following rotational crops may be planted after the indicated interval following application of rates up to 4.8 ounces per acre of Hornet:

Numbers within parentheses (-) in table refer to Specific Rotational Crop Requirements below.

Rotational Crop	Interval (Months)
barley, oats, rye, wheat	4
rice	6
seeding of cover crops (1)	9
alfalfa (2), dry beans (2), lima beans (2) soybean (2), peas, popcorn	10.5
grain sorghum	12
cotton, peas (4), peanuts, potatoes, sunflower, sweet corn (3), tobacco	18
sugar beets, canola and all other crops(5)	26

Specific Rotational Crop Requirements:

1. The following cover crops may be planted for establishment of Federal Conservation Reserve Programs and Agricultural Reserve Programs no sooner than 9 months following application of Hornet at rates up to 3.2 oz per acre: **legumes** including alfalfa, clovers, crownvetch, birdsfoot trefoil, and lespedeza; and **grasses**, including big bluestem, little bluestem, switchgrass, Russian wildrye, green needle, smooth bromegrass, Garrison creeping foxtail, canary grass, orchardgrass, intermediate wheatgrass, tall wheatgrass, crested wheatgrass, western wheatgrass and indian grass. Some stand reduction or temporary stunting of legume seedlings is possible. However, **Dow AgroSciences will not** accept responsibility for any crop injury or stand failure in crops established under Federal Conservation Reserve Programs and Agricultural Reserve Programs following use in corn and the subsequent 9 month rotational crop restriction. Additionally, Dow AgroSciences will not accept responsibility for any crop injury or stand failure of native grasses as a result of inadequate seedbed preparation, erratic germination, lack of seedling vigor, or plant stress from unfavorable environmental conditions.
2. When annual rainfall and/or irrigation is less than 15 inches on soils with less than 2% organic matter, alfalfa, dry beans, lima beans, peas and soybeans should not be planted until 18 months after treatment.
3. **Certain sweet corn varieties** may be planted 10 1/2 months following soil or postemergence application of up to 3.2 oz per acre of Hornet. This interval applies only to the following varieties of sweet corn grown for processing: Beretta, Bingo, Bonus, Challenger, Cornucopia, Crisp'N Sweet 710, DMC 20-04, DMC 20-10, DMC 20-35, Eliminator, Empire (GH 2759), Excalibur, Excellency, GH 2628, GH 2683, GH 2684, GH 2690, GG 5, GG 22, GG 23, GG 40, GG 43, GG 46, GG 55, GG 60, GG 520, HM 701, Lumina, Reveille, Reward, Rival, Shaker, Sprint, Tribune, Viking, and Zenith. The rotational interval is 18 months for sweet corn varieties not listed.
- ~~4. **Peas** should not be planted less than 18 months following application of Hornet unless the risk of injury is acceptable. Growers considering planting peas sooner than 18 months after application of Hornet are directed to contact the processor company for information and recommendations regarding the tolerance of pea varieties to Hornet and/or Stinger[®] herbicide and previous rotational crop experience with these products. **All risks and consequences associated with planting peas less than 18 months after application of Hornet shall be assumed by the grower.**~~
- ~~5-4.~~ Rotation to sugar beets, canola, and all other crops requires a 26-month rotation interval and a successful field bioassay.

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 field conditions such as soil texture, soil pH, drainage, and any other variable that could affect the seed bed of the new crop. Field bioassay at any time between harvest of the treated crop and the planting of the rotational crop. Observe the test crop for 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 test rotational crop; plant only a labeled crop or crop listed in the table above for which the rotational interval has clearly been met.

Mixing and Application**Spray Volume**

Apply Hornet in sufficient spray volume to provide uniform coverage using only properly calibrated ground equipment. Apply in a total spray volume of 10 to 40 gallons per acre using low pressure (20-40 lb/sq in).

Maintain sufficient agitation during mixing and spraying to ensure a uniform spray mixture. To ensure thorough coverage when making soil applications to minimum or no-till field corn, use a total spray volume of 20 or more gallons per acre.

16 of 31

Hornet (oz /acre)	Acres per Package	
	Acres Per 6 lb Plastic Jug†	Acres per Packet††
1.6	60	6
2.4	40	4
3.2	30	3
4.0	24	2.4
4.8	20	2.0

†If the number of acres to be treated results in the use of a partial container, use the measuring device provided with the container to measure out 1 acre increments according to the scale indicated on the measuring device.

††To calculate the number of 9.6 oz water soluble packets for your spray mix:

1. Determine the number of acres you wish to spray in the desired application.
2. Divide the number of acres by the acres per packet that falls within the rate range you have chosen. See the above table for broadcast application rates and corresponding acres per packet.
3. The result is the number of packets you are required to add to the spray mix.

If the resulting number of packets is not a whole packet:

1. **Do not open the water soluble packets.**
2. Round up or down to the nearest whole number of packets and check to make sure that the resulting number of acres per packet falls within the desired rate range for the application.

Sample Calculations:

1. Planned application = 3.2 oz per acre (The acres per packet for 3.2 oz per acre is 3.0).
2. Assuming 17 acres is to be treated, 17 acres divided by 3.0 acres per packet = 5.7 packets (Round up to 6 packets).
3. 17 acres divided by 6 packets = 2.83 acres per packet which is within the desired range of 3.0 to 2.4 acres per packet for the application.

Band Application

Calculate the amount of herbicide needed for band treatment by the formula:

$$\frac{\text{Band width in inches}}{\text{Row width in inches}} \times \text{Broadcast rate per acre} = \text{Amount needed per acre of field}$$

Mixing Directions

Hornet is a water dispersible granule formulation. Thorough mixing is required.

1. Fill the tank with 1/2 of the total amount of water or liquid fertilizer required for the load.
2. Start agitation system.
3. Add the required amount of Hornet directly into the spray tank while agitating. If product is packaged in water soluble packets, open the overpack and add the required number of water soluble packets directly to the spray tank while agitating. **(For use of water soluble packaging in liquid fertilizer solutions, see the "Application in Liquid Fertilizer" section of this label for special pre-mixing instructions.)** Do not open water soluble packets. Water soluble packets will float on the surface until the water soluble film dissolves and releases the product. Handling packets with hands should be minimized.
4. Continue agitation and complete filling the tank while product disperses in the spray tank solution.

Before spraying make sure Hornet is thoroughly mixed in the solution. If product is in water soluble packets, make sure packets have completely disintegrated and product is thoroughly mixed with water. Depending on the water temperature and the degree of agitation, the packet and Hornet should be completely dispersed within 5 minutes from the time they were added to the water.

To insure a uniform spray mixture continuous agitation is required during mixing and spraying. Apply within 24 hours after mixing. If product is allowed to settle, thoroughly agitate to resuspend the mixture before spraying.

Hornet in Tank Mix

Hornet may be applied in tank mix combination with labeled rates of other products provided (1) the tank mix product is labeled for the timing and method of application for the use site to be treated; and (2) tank mixing with Hornet is not prohibited by the label of the tank mix product. See "Tank Mixing" in "General Use Precautions" section.

Vigorous, continuous agitation during mixing, filling, and throughout application is required for all tank mixes. Sparger pipe agitators generally provide the most effective agitation in spray tanks. To prevent foaming in the spray tank, avoid stirring or splashing air into the spray mixture.

Mixing Order for Tank Mixes: Fill the spray tank to 1/4 to 1/3 of the total spray volume required with water or liquid fertilizer solution. Start agitation. Add different formulation types in the order indicated below, allowing time for complete mixing and dispersion after addition of each product. Allow extra mixing and dispersion time for dry flowable products.

Add different formulation types in the following order: Hornet (slurried if mixing water soluble packets with liquid fertilizer) and other dry flowables; wettable powders; aqueous suspensions, and flowables. Maintain agitation and fill spray tank to 3/4 of total spray volume. Then add emulsifiable concentrates and any solutions.

Note: Spray adjuvants (non-ionic surfactants, crop oil concentrates, urea ammonium nitrate, and ammonium sulfate) required for postemergence foliar applications should be added to the spray tank last.

Finish filling the spray tank. Maintain continuous agitation during mixing, final filling, and throughout application. If spraying and agitation must be stopped before the spray tank is empty, the materials may settle to the bottom. Settled materials must be resuspended before spraying is resumed. A sparger agitator is particularly useful for this purpose. Settled material may be more difficult to resuspend than when originally mixed.

Line screens in the spray tank should be no finer than 50 mesh (100 mesh is finer than 50 mesh).

Application with Liquid Fertilizer

Hornet dispensed from a 6 lb jug may be added directly to liquid fertilizer. Hornet in water soluble packets **must be premixed or slurried prior to use in liquid fertilizer**. Do not attempt to dissolve water soluble packets in liquid fertilizer. The film used in water soluble packaging is not soluble in liquid fertilizer solutions. Water soluble packets containing Hornet should be premixed with water and then added to the spray tank through a 20-35 mesh screen. For best results, use a minimum of 1 pint of water per 9.6 oz water soluble packet. Packets can be stirred immediately on addition of water or allowed to dissolve. Stir until packets are dissolved and granules are completely dispersed. Add rinsate from mixing container to spray tank.

When necessary, a compatibility agent can be used to ensure that Hornet mixes properly. The use of appropriate compatibility agents is especially important when tank mixing Hornet and other dry flowables, wettable powders, flowables, liquids, aqueous suspensions, or solutions with emulsifiable concentrates in liquid fertilizers. If the emulsifiable concentrate formulation rises to the surface of the fertilizer as an oil ("oils out"), the oil may combine with the wettable powder, flowable, or suspension to form oily curds (viscous phase) which are difficult to disperse. A jar test, utilizing relative proportions of the tank mix ingredients is recommended prior to mixing with liquid fertilizers.

Note: Do not use liquid fertilizer as the carrier when Hornet is applied postemergence to corn.

Application with Dry Bulk Fertilizer

Dry bulk fertilizer may be impregnated or coated with Hornet. Application of dry bulk fertilizer impregnated with Hornet provides weed control equal to the same rates of Hornet applied in liquid carriers. Follow label recommendations for Hornet regarding rates per acre, crops, special instructions, cautions, and special precautions. Apply 200 to 700 pounds of the fertilizer/herbicide mixture per acre. For best results, apply the mixture uniformly to the soil with properly calibrated equipment immediately after blending. Uniform application of the herbicide/fertilizer mixture is essential to prevent possible crop injury. Non-uniform application may also result in unsatisfactory weed control. In areas where conventional tillage is practiced, a shallow incorporation of the mixture into the soil may improve weed control.

Most dry fertilizers can be used for herbicide impregnation with Hornet. When coated ammonium nitrate and/or limestone are used alone, do not impregnate with Hornet; these materials will not absorb the herbicide. Fertilizer blends containing coated ammonium nitrate and/or limestone as a part of the fertilizer mixture can be impregnated.

Compliance with all federal and state regulations relating to blending pesticide mixtures with dry bulk fertilizer, registration, labeling, and application are the responsibility of the individual and/or company offering the fertilizer and chemical mixture for sale.

Impregnation: Hornet must be pre-mixed or slurried with water prior to impregnation of dry bulk fertilizer. For best results, use a minimum of 1 pint of water per 10 oz of product or 9.6 oz water soluble packet. To make the water slurry, add the required rate of Hornet (see formula below) to enough water to give a total volume of at least 6 pints of solution per ton of fertilizer. Make sure the Hornet is thoroughly dispersed in the water before spraying onto the fertilizer. Spray nozzles should be placed to provide uniform spray coverage onto the fertilizer. Care should be taken to aim the spray directly onto the fertilizer and avoid spraying the walls of the blender. Use any closed drum, belt, ribbon, or other commonly used dry bulk fertilizer blender.

Calculate amounts of Hornet by the following formula:

$$\frac{2,000}{\text{Pounds/acre of fertilizer}} \times \text{Pounds/acre of Hornet} = \text{Pounds of product per ton of fertilizer}$$

Note: Thoroughly clean dry fertilizer blending equipment prior to use with other herbicides. It is important to clean the blender, herbicide spray tank, and spraying apparatus thoroughly. Rinse the sides of the blender and the herbicide tank with water. Then, impregnate the rinsate onto a load of dry fertilizer intended for an approved crop. Use a maximum rate of 1 gallon of rinsate per ton of fertilizer. Follow with 1 to 2 loads of unimpregnated fertilizer in the blender before switching herbicides. The fertilizer application equipment must be empty, clean, and dry before applying any material to crops other than corn.

Approved Uses

FIELD CORN

Soil Applied Treatments

Broadcast Application Rates (Preplant Surface Applied, Preplant Incorporated, Postplant Preemergence, and Spike Stage Treatments)

Soil Texture	Hornet (oz/acre)	
	<3.0% Organic matter	>3.0% Organic matter
Coarse	3.2	3.2 - 4.0
Medium or Fine	3.2 - 4.0	4.0 - 4.8

Note: Use the high end of the rate range on soils with greater than 3% organic matter and/or when applications are made 14 to 30 days before planting.

Broadleaf Weeds Controlled by Hornet when Soil Applied

Hornet will control "triazine tolerant" biotypes of these weeds, commonly know as "triazine resistant".

Note: Numbers within parentheses (-) in weeds list refer to "Use Information for Specific Weeds" below.

amaranth, Palmer	pigweed, smooth
anoda, spurred	poinsettia, wild
beggarweed, Florida	puncturevine
buckwheat, wild	purslane
carpetweed	ragweed, common
chickweed	ragweed, giant(1)
cocklebur, common	
clover, red	shepherd's purse
henbit	sicklepod
horseweed (marestail)	sida, prickly
jimsonweed	smartweed
kochia(1) (5)	spurge, nodding
ladythumb	spurge, spotted
lambsquarters, common	spurge, prostrate
mallow, Venice	sunflower, common
morningglory species (1)	thistle, Canada (3)
mustard, wild	velvetleaf
nightshade species(2)	waterhemp, species (4)
pigweed, redroot	wormwood, biennial

Use Information for Specific Weeds:

1. Weeds partially controlled.
2. Control of moderate to heavy infestations of nightshade will be improved with a tank mixture of the appropriate labeled rate of an atrazine premix product or a surface applied acetanilide product such as Dual II, Dual II Magnum, Surpass, Topnotch, Harness, or Frontier herbicide.
3. Burndown control of Canada thistle in minimum and no-till corn only.
4. To aid in control of waterhemp, apply Hornet in tank mix combination with the appropriate labeled rate of a surface applied acetanilide product such as Dual II, Dual II Magnum, Surpass, TopNotch, Harness, or Frontier herbicide.
5. Hornet will not control ALS resistant or tolerant biotypes of ~~Kochia~~ kochia.

Hornet may be soil applied as a preplant surface, preplant incorporated, or preemergence treatment. Apply alone or in tank mix combination with a grass control product such as Dual II, Dual II Magnum, Surpass, Topnotch, Harness, or Frontier herbicide.

Tank Mixing Limitations: Hornet may be applied in tank mix combination with other products provided (1) the timing and method of application is the same as recommended for Hornet; and (2) tank mixing with Hornet is not prohibited by the label of the tank mix product. When tank mixing, do not exceed recommended application rates and use only in accordance with the most restrictive precautions and limitations on the respective product labels.

Soil Application Directions

1. **Preplant Incorporated Application:** For best results, apply and incorporate Hornet from 0 to 30 days before planting. Preplant incorporated treatments may be applied in water or liquid fertilizer. Uniformly incorporate the herbicide treatment into the top 2 to 3 inches of the final seedbed.
2. **Preplant Surface Applied:** For best results in minimum-tillage or no tillage systems, Hornet alone and with certain tank mixtures may be applied up to 30 days before planting. If weeds are present at the time of treatment, apply in a tank mixture combination with a contact herbicide such as Gramoxone Extra, Touchdown, or glyphosate (Glyphomax Plus or Roundup Ultra (glyphosate)) herbicide. When tank mixing, do not exceed recommended application rates and use only in accordance with the most restrictive precautions and limitations on the respective product labels. To the extent possible do not move treated soil out of the row or move untreated soil to the surface during planting, or weed control will be diminished.

Canada Thistle Control in Minimum and No-Till Corn: Hornet may be applied as a burndown treatment for control of emerged Canada thistle in minimum and no-till corn. The application will result in reduced late season competition. Delay the application until most of the thistle has emerged and averages 4 to 8 inches in height. For applications to Canada thistle, always include crop oil concentrate (See "Adjuvant Systems" in "Postemergence Treatments" section). Tank mix Hornet with glyphosate (Glyphomax Plus or Roundup Ultra (glyphosate)), or Touchdown herbicide and non-ionic surfactant for burndown control of existing grass and annual broadleaf weeds. When tank mixing, do not exceed recommended application rates and use only in accordance with the most restrictive precautions and limitations on the respective product labels. Do not apply in tank mixture with Gramoxone Extra as this will result in reduced control of Canada thistle. Do not cultivate for at least 14 days after application to allow for thorough translocation of the herbicide treatment.

Note: Hornet will not control Canada thistle that has not emerged at the time of application in minimum or conventional tillage systems.

3. **Burndown Application:** When used as a burndown application, Hornet will provide foliar control of broadleaf weeds listed in the "Postemergence Treatments" section of this label and residual control of weeds listed under soil application. Foliar burndown applications should always include crop oil concentrate (see "Adjuvant Systems" in "Postemergence Treatments" section). To broaden the spectrum of weeds controlled, Hornet may be tank mixed with other herbicides such as glyphosate (Glyphomax plus or Roundup Ultra), Touchdown, Gramoxone Extra, or 2,4-D herbicide, etc. (See tank mixing instructions.)
4. **Preemergence Application:** Apply at the time of planting or after planting, but prior to crop or weed emergence. Adequate soil moisture following application is required for optimum herbicidal activity. For surface applications, rainfall, or overhead sprinkler irrigation is necessary to move Hornet into the weed germination zone. The amount of rainfall or irrigation required following application depends on existing soil moisture, soil texture, and organic matter content. Sufficient water to moisten the soil to a depth of 2 inches is generally adequate. If adequate soil moisture is not received within 7 to 10 days after a surface applied treatment, a shallow cultivation is recommended to control established weeds and move the herbicide into the weed germination zone. When

adequate soil moisture is received following dry conditions, performance may vary with weed species and the depth of the weed root system in the soil.

5. **Spike Stage Application:** Apply from corn emergence (ground cracking stage) until corn is 2 inches in height and before the first leaf is unfurled. Adequate soil moisture is required for optimum herbicidal activity. For those weeds that have not emerged at the time of application, rainfall or overhead sprinkler irrigation is necessary to move Hornet into the weed germination zone. The amount of rainfall or irrigation required following application depends on existing soil moisture, soil texture, and organic matter content. Sufficient water to moisten the soil to a depth of 2 inches is generally adequate. If adequate soil moisture is not received within 7 to 10 days after a surface applied treatment, a shallow cultivation is recommended to control established weeds and move the herbicide into the weed germination zone. When adequate soil moisture is received following dry conditions, performance may vary with weed species and rooting depth of target weeds.

Tank Mixing

(Preplant Surface Applied, Preplant Incorporated, and Postplant Preemergence Treatments)

Note: When tank mixing with a companion herbicide, read and follow each manufacturer's label for weeds controlled, applicable use directions, precautions, and limitations.

1. Reduced Rates of Hornet Plus Atrazine-Containing Pre-Mix Products

Reduced rates of Hornet can be tank mixed with labeled rates of atrazine-containing pre-mix herbicide products such as Bicep II, Bicep II Magnum, Bicep Lite II, Surpass 100, FulTime, Harness Xtra, Guardsman, Leadoff, or Extrazine herbicide for improved control of certain broadleaf weeds not consistently controlled by atrazine pre-mix products. Hornet may be applied in tank mix combination with other products provided (1) the timing and method of application is the same as recommended for Hornet; and (2) tank mixing with Hornet is not prohibited by the label of the tank mix product. When tank mixing, do not exceed recommended application rates and use only in accordance with the most restrictive precautions and limitations on the respective product labels. Reduced rates of Hornet tank mixed with labeled rates of these atrazine pre-mix products will provide consistent preemergence control of velvetleaf, lambsquarters, pigweed species, waterhemp, and triazine "resistant" varieties (triazine tolerant biotypes) of these species. These tank mixtures will also provide improved control of large-seeded broadleaf weeds such as cocklebur, common ragweed, giant ragweed, common sunflower, and jimsonweed.

On soils with less than 3% organic matter, tank mix Hornet at 2.4 oz/A with the recommended label rate of the atrazine pre-mix product. On soils with greater than 3% organic matter, tank mix Hornet at 3.2 oz/A with the recommended label rate of the atrazine pre-mix product.

Soil Organic Matter	Hornet (oz/acre)	Acres per 6 lb Plastic Jug	Acres per 9.6 oz Water Soluble Packet
<3%	2.4	40	4
>3%	3.2	30	3

2. Hornet plus Gramoxone Extra, Glyphosate (Glyphomax Plus or Roundup Ultra, (glyphosate), or Touchdown for Minimum-tillage or No-tillage Systems

In minimum-tillage or no-tillage situations where corn is planted directly into a cover crop, stale seedbed, or previous crop residues, a contact herbicide Gramoxone Extra, Touchdown or Roundup Ultra, Glyphomax Plus (glyphosate) herbicide may be tank mixed with Hornet. Apply in 10 to 60 gallons of water or fluid fertilizer per acre with ground equipment. When tank mixing, do not exceed recommended application rates and use only in accordance with the most restrictive precautions and limitations on the respective product labels.

Application Timing: Apply before, during (behind the planter), or after planting, but before the crop emerges.

Gramoxone Extra: See the label for Gramoxone Extra for weeds controlled, recommended rates for specific weeds, and application instructions. Do not apply combinations containing Gramoxone Extra in suspension type fertilizers as the activity of the active ingredient paraquat will be reduced.

Glyphomax Plus or Roundup Ultra: See the product label for Glyphomax Plus, Roundup Ultra, (or other labeled glyphosate) herbicide label for weeds controlled, recommended rates for specific weeds, and application instructions.

3. Hornet Plus 2,4-D for Minimum-tillage or No-tillage Systems

Where heavy crop residues exist, add 1.0 to 2.0 pints per acre of an appropriately labeled 3.8 pounds a.e. per gallon 2,4-D amine or ester to the spray tank and apply in a minimum of 20 gallons of carrier per acre.

As carriers, nitrogen solutions and complete liquid fertilizers applied before corn emergence enhance burndown of existing weeds and, therefore, are recommended instead of water. Add a crop oil concentrate or non-ionic surfactant at 1.0 to 2.0 quarts per 100 gallons diluted spray or another appropriate surfactant at its recommended rate. Apply before weeds reach 6 inches in height. This tank mixture will not control emerged grasses.

Hornet Soil-Applied Followed by Postemergence Treatments:

Broadleaf weeds not controlled by Hornet may be controlled with a postemergence herbicide product such as Scorpion[®] III herbicide, Hornet, Banvel, Clarity, 2,4-D, Marksman, Buctril, or Beacon herbicide. Read and follow each manufacturer's label for weeds controlled, applicable use directions, precautions, and limitations before use.

Postemergence Treatments

Apply Hornet as a postemergence spray at a rate of 1.6 - 4.0 ounces per acre. Use higher rates for control of heavy weed infestations, larger weeds, or when a longer period of residual control is desired. When applied postemergence, Hornet must be used with one of the adjuvant systems described below.

Postemergence Application Rates:

Acres Per Package Type	Application Rate (oz/acre)†			
	1.6 oz/acre	2.4 oz/acre	3.2 oz/acre	4 oz/acre
Acres per water soluble packet	6	4	3	2.4
Acres per 6 lb jug	60	40	30	24

†Refer to Mixing Directions section to determine the number of water soluble packets and total spray volume required for treated acreage.

Application Timing

Apply to actively growing weeds as a broadcast, or band treatment from the time of corn emergence (spike stage) until corn reaches 20 inches in height or the V6 stage whichever occurs first. For optimal control, apply before broadleaf weeds exceed the maximum height listed. Weeds that exceed the maximum height listed may be suppressed and recover after 2 to 3 weeks.

~~Do not apply if rainfall is expected within 6 hours after application.~~

[Editors Note: Rainfast requirement is now covered in Environmental Conditions and Biological Activity section below.]

Directed Postemergence Application: Hornet may be applied as a directed postemergence application to corn that is 20 to 36 inches in height or has more than 6 leaf collars. Use only drop nozzles and avoid spraying the corn plant by directing the spray as low as possible while allowing for optimal coverage of weeds. Use the highest labeled rates for weeds greater than the maximum size listed on this label.

Control of weeds larger than the maximum height listed may vary due to weeds species, stage of growth, and growing conditions. Results may range from complete control to suppression.

- Do not spray into the whorl of corn plants.
- Do not apply to corn more than 36 inches tall.

Factors Affecting Weed Control: Apply to actively growing weeds. Extreme growing conditions such as drought, or near freezing temperatures before, at, or following application may result in reduced weed control. Degree of control will depend on coverage of treated weeds and weed susceptibility as well as growing conditions at the time of treatment.

Environmental Conditions and Herbicidal Activity of Hornet: Factors in effective weed control with Hornet include application rate, weed size, daytime temperature, soil moisture prior to and following application, and use of adjuvants. Best weed control results are obtained when Hornet is applied to small, actively growing weeds, when daytime temperatures are warm (70°F or more), and soil moisture is adequate to support active weed growth prior to and following application. If weeds are under drought stress, consider delaying application until more favorable conditions resume. Application when weeds are moisture stressed or taller than the recommended height for control may result in only partial control.

- Hornet is rainfast in 6 hours.
- Applications made immediately prior to, during, or immediately following periods of large day/night temperature fluctuations or where daytime temperatures do not exceed 60°F may decrease weed control.
- Poor weed control may result from applications made to plants under stress from:
 - ▶ abnormally hot or cold weather
 - ▶ environmental conditions such as drought, water-saturated soils, hail damage, or frost
 - ▶ prior herbicide applications

Use of Surfactants: All postemergence applications of Hornet must include a non-ionic surfactant at 0.25% volume/volume (1 qt/100 gal) or crop oil concentrate at 1% volume/volume. Use a good quality surfactant with at least 80% active ingredient (of which at least 50% is actual non-ionic surfactant). Under extremely dry growing conditions, the use of an agriculturally approved sprayable liquid fertilizer or ammonium sulfate, in combination with the non-ionic surfactant or crop oil concentrate may enhance control. Use 28%, 30%, or 32% urea ammonium nitrate at 2.5% volume/volume (2.5 gal/100 gal) or 2 to 4 pounds of sprayable grade ammonium sulfate per acre.

[Editors Note: Use of methylated seed oil (MSO) will be added if approved under separate supplemental label request.]

Note: Do not use liquid fertilizer solutions or suspensions as the total carrier because excessive crop injury may occur. Use only EPA approved surfactants for use on food crops.

Cultivation: For best results, do not cultivate within 10 days before or after application.

Tank Mixing: Hornet may be applied in tank mix combination with other products provided (1) the timing and method of application is the same as recommended for Hornet; and (2) tank mixing with Hornet is not prohibited by the label of the tank mix product; and (3) the tank mix combination is compatible as determined by a "jar test" described in the "Tank Mix Compatibility Testing" section. When tank mixing, do not exceed recommended application rates and use only in accordance with the most restrictive precautions and limitations on the respective product labels. For control of grass weeds, Hornet may be tank mixed with a postemergence grass herbicide such as Accent Gold or Basis Gold. For an expanded spectrum of broadleaf weed control, Hornet may be tank mixed with products such as atrazine, Banvel, Buctril, Clarity, or 2,4-D herbicides. Hornet may also be tank mixed with Roundup Ultra (or other labeled glyphosate formulations) for application to Roundup Ready field corn.

Do not post apply Hornet tank mixed in tank mix combination with Basagran, Laddock, Lightning, Bladex, or Extrazine herbicides as severe crop injury may result.

Weeds Controlled and Application Rates for Postemergence Application

(Use higher rates for control of larger weeds and for control of heavy weed infestations.)

Hornet will control triazine tolerant biotypes of these weeds, commonly know as "triazine resistant".

Note: Numbers in parentheses (-) within table refer to Specific Use Directions below.

Annual Weed Control			
Application to "Spike" Corn (1)	Postemergence Application After "Spike" Stage of Growth		
3.2 to 4.0 oz/acre	1.6 oz/acre (weeds 1 - 3 in. tall)	2.4 oz/acre (weeds 1 - 6 in. tall)	3.2 oz/acre (weeds 1 - 8 in. tall)
anoda, spurred	anoda, spurred	anoda, spurred	anoda, spurred
beggarweed, Florida	beggarweed, Florida	beggarweed, Florida	beggarweed, Florida
buckwheat, wild	chickweed	chickweed	chickweed
carpetweed	cocklebur, common	cocklebur, common	cocklebur, common
chickweed	henbit	henbit	henbit
cocklebur, common	horseweed (marestalk)	horseweed (marestalk)	horseweed (marestalk)
henbit	mallow, venice	jimsonweed	jimsonweed
horseweed (marestalk)	mustard, wild	ladysthumb	ladysthumb
jimsonweed	poinsettia, wild	mallow, venice	lettuce, prickly
kochia (2)	puncturevine	mustard, wild	mallow, Venice
ladysthumb	purslane	poinsettia, wild	mustard, wild
lambsquarters, common,	shepherd's purse	puncturevine	poinsettia, wild
mallow, venice	sida, prickly	purslane	puncturevine
mustard, wild	spurge, nodding	ragweed, common	purslane
nightshade, sp.	spurge, spotted	ragweed, giant	ragweed, common
Pigweed, redroot	spurge, prostrate	shepherd's purse	ragweed, giant
pigweed, smooth	sunflower, common	sida, prickly	shepherd's purse
poinsettia, wild	velvetleaf	smartweed, Pennsylvania	sida, prickly
puncturevine		spurge, nodding	smartweed, Pennsylvania
purslane		spurge, spotted	spurge, nodding
ragweed, common		spurge, prostrate	spurge, spotted
shepherd's purse		sunflower, common	spurge, prostrate
sicklepod		velvetleaf	sunflower, common
sida, prickly			velvetleaf
smartweed, Pennsylvania			
spurge, nodding			
spurge, spotted			
spurge, prostrate			
sunflower, common			
thistle, Russian			
velvetleaf			
waterhemp species			

25 of 31

Partial Control	Partial Control	Partial Control (weeds < 2 in. tall)	Partial Control (weeds <4 in. tall)
morningglory, ivyleaf morningglory, entireleaf morningglory, tall ragweed, giant	common ragweed giant ragweed jimsonweed ladythumb smartweed, Pennsylvania	buckwheat, wild kochia (2) lambsquarters, common lettuce, prickly morningglory, ivyleaf morningglory, entireleaf morningglory, tall nightshade, sp. pigweed, redroot pigweed, smooth Russian thistle sicklepod waterhemp species	buckwheat, wild kochia (2) lambsquarters, common morningglory, ivyleaf morningglory, entireleaf morningglory, tall nightshade, sp. pigweed, redroot pigweed, smooth Russian thistle sicklepod waterhemp species
Biennial and Perennial Weed Control			
Apply 2.4 to 4.0 oz/acre to weeds 3 - 9 inches tall (3,4)			
artichoke, Jerusalem alfalfa, volunteer burdock	clover, red clover, sweet dandelion	dock, curly sorrel, red	thistle, Canada (5) wormwood, biennial

Specific Use Directions:

- Spike corn:** Apply 4 oz per acre for greater residual control on soils with greater than 3% organic matter. Apply 4 oz per acre to increase the degree of partial control for morningglory species and giant ragweed.
- Hornet will not control ALS resistant or tolerant kochia biotypes.
- Biennial and Perennial weeds:** A rate of 3.2 - 4.0 oz per acre will generally provide season-long control. A rate of 2.4 oz per acre will provide control of top growth only. Some regrowth may occur by the end of the season.
- Biennial and Perennial weeds:** Do not tank mix with contact herbicides (such as atrazine, metribuzin, or bromoxynil) as reduced weed control will result.
- Canada thistle:** For Canada thistle control the following season, expressed as stand reduction, apply 4.0 oz per acre of Hornet in tank mix combination with 4.0 oz per acre of Stinger herbicide[†].

[†] **Note:** Maximum Use Rate for clopyralid is 0.25 lb active ingredient per acre. One ounce of Hornet contains 0.039 lb of clopyralid. One fluid ounce of Stinger contains 0.023 lb of clopyralid.

Warranty Disclaimer

Dow AgroSciences warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the label when used in strict accordance with the directions, subject to the inherent risks set forth below. Dow AgroSciences MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER EXPRESS OR IMPLIED WARRANTY.

Inherent Risks of Use

It is impossible to eliminate all risks associated with use of this product. Crop injury, lack of performance, or other unintended consequences may result because of such factors as use of the product contrary to label instructions (including conditions noted on the label, such as unfavorable temperatures, soil conditions, etc.), abnormal conditions (such as excessive rainfall, drought, tornadoes, hurricanes), presence of other materials, the manner of application, or other factors, all of which are beyond the control of Dow AgroSciences or the seller. All such risks shall be assumed by buyer.

Limitation of Remedies

The exclusive remedy for losses or damages resulting from this product (including claims based on contract, negligence, strict liability, or other legal theories), shall be limited to, at Dow AgroSciences' election, one of the following:

- (1) Refund of purchase price paid by buyer or user for product bought, or
- (2) Replacement of amount of product used

Dow AgroSciences shall not be liable for losses or damages resulting from handling or use of this product unless Dow AgroSciences is promptly notified of such loss or damage in writing. In no case shall Dow AgroSciences be liable for consequential or incidental damages or losses.

The terms of the Warranty Disclaimer above and this Limitation of Remedies cannot be varied by any written or verbal statements or agreements. No employee or sales agent of Dow AgroSciences or the seller is authorized to vary or exceed the terms of the Warranty Disclaimer or this Limitation of Remedies in any manner.

*Trademark of Dow AgroSciences LLC

®Dual is a registered trademark of Novartis

EPA-Accepted: __/__/__

Dennis H. Lade, Ph.D.
Dow AgroSciences LLC
9330 Zionsville Road
Indianapolis, IN 46268

NOV 30 1999

Dear Dr. Lade:

Subject: Hornet®

EPA Registration No. 62719-258
Application and Letter Dated November 18, 1999,
Request To Amend Registration, Submission of
Supplemental Label To Add North Dakota, Illinois and
Indiana To List of States Allowed to Aerial Apply
Hornet; and To Add the Latest Spray Drift Management
Directions; and Revised First Page Dated November 30,
1999

The proposed subject supplemental Labeling has been reviewed
and found as an acceptable amendment to the registration of
Hornet under the Federal Insecticide, Fungicide and Rodenticide
Act (FIFRA), as amended, provided that you:

- o Submit one (1) copy of your final printed labeling prior
to your shipment of the subject pesticide product under
the enclosed stamped labels.

If this condition is not complied with, the registration
will be subject to cancellation in accordance with FIFRA, section
6(e). Your release for shipment of the product constitutes
acceptance of this condition.

A stamped copy of the Supplemental Labeling is enclosed
for your records.

Sincerely yours,

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

Enclosure

E. Wilson: Diskette: flumetsulconazole-99

SYMBOL							
SURNAME							
DATE							

Supplemental Labeling



Dow AgroSciences LLC

9330 Zionsville Road

Indianapolis, IN 46268-1054 USA

Hornet*

EPA Reg. No. 62719-253

For Distribution and Use Only in the States of Colorado, Illinois, Indiana, Iowa, Kansas, Minnesota, Nebraska, Oklahoma, North Dakota, South Dakota and Texas

Aerial Application for Broadleaf Weed Control in Field Corn

ATTENTION

- It is a violation of Federal law to use this product in a manner inconsistent with its labeling.
- This labeling must be in the possession of the user at the time of application.
- Read the label affixed to the container for Hornet before applying. Carefully follow all precautionary statements and applicable use directions.
- Except as described in this supplemental labeling, use of Hornet is subject to all precautions and limitations imposed by the labels affixed to the containers for Hornet.

Directions for Use

Hornet* broadleaf blend herbicide may be aerially applied by airplane or helicopter in the states of Colorado, Kansas, Nebraska, Oklahoma, North Dakota, South Dakota and Texas for preemergence or postemergence control of broadleaf weeds in field corn. Refer to the product label for Hornet for complete Directions for Use and specific information on broadleaf weeds controlled.

Application Information

Use nozzle types and arrangements that will provide optimum spray distribution and maximum coverage. Aerially apply Hornet in a minimum spray volume of 5 gallons per acre.

Precautions

- Many non-target crops are highly sensitive to Hornet. Avoid all direct or indirect contact (such as spray drift) with crops other than field corn. See Spray Drift Management Section below.
- Refer to the product label for Hornet for specific use restrictions, use precautions, and rotational crop intervals.

Spray Drift Management

Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment-and-weather-related factors determine the potential for spray drift. The applicator and the grower are responsible for considering all these factors when making decisions. The following drift management requirements must be followed to avoid off-target drift movement from aerial applications to agricultural field crops. These requirements do not apply to forestry applications, public health uses or to applications using dry formulations.

1. The distance of the outer most nozzles on the boom must not exceed $\frac{3}{4}$ the length of the wingspan or rotor.
2. Nozzles must always point backward parallel with the air stream and never be pointed downwards more than 45 degrees. Where states have more stringent regulations, they should be observed.

ACCEPTED
with COMMENTS
In EPA Letter Dated

NOV 30 1999

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

62719-253

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

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

Controlling Droplet Size:

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

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

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

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

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

Boom Length-For some use patterns, reducing the effective boom length to less than $\frac{3}{4}$ of the wingspan or rotor length may further reduce drift without reducing swath width.

Application-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 cross-wind, the swath will be displaced downwind. Therefore, on the up and downwind edges of the field, the applicator must compensate for this displacement by adjusting the path of the aircraft upwind. Swath adjustment distance should increase, with increasing drift potential (higher wind, smaller drops, etc.).

Wind: Drift potential is lowest between wind speeds of 2-10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given speed. Application should be avoided below 2 mph due to variable wind direction and high inversion potential. Note: Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect drift.

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

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

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

*Trademark of Dow AgroSciences LLC
P2D / Hornet / Aerial Applic-Suppl / 11-17-99
D06 -038-XXX
EPA-accepted: / /
Replaces D06-038-001

Revisions:
1. Added use in North Dakota Illinois and Indiana.
2. Included latest Spray Drift Management text.

Hornet*

EPA Reg. No. 62719-253

Registration Notes:

Proposed Changes by Amendment.

1. Added use in North Dakota Illinois and Indiana.
2. Included latest Spray Drift Management text.

[Editor's note: Review listing of states with marketing prior to release of final printed labeling.]

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