

62719-525

11/02/2006

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

WASHINGTON, D.C. 20460

NOV 2 2006

OFFICE OF  
PREVENTION, PESTICIDES  
AND TOXIC SUBSTANCES

John J. Jachetta, Ph.D.  
Regulatory Leader  
Dow AgroSciences LLC  
9330 Zionsville Road  
Indianapolis, IN 46268

Dear Dr. Jachetta:

Subject: CleanWave™

EPA Registration No. 62719-525  
Application and Your Letter Dated October 23, 2006,  
Request to Amend Registration by Adding Correct  
Ingredient Statement to align with Milestone, Move  
Lambsquarters from Weeds Suppressed to Weeds  
Controlled, Delete Lambsquarters from Tank Mix Partner  
Chart, Expanded Application Window, and Added  
Restriction To Limit Applications To One Per Wheat  
Crop

The proposed labeling amendment to the subject registration of CleanWave™ has been reviewed and found acceptable under the Federal Insecticide, Fungicide and Rodenticide Act, FIFRA, as amended, provided that you:

1. Revise 1<sup>st</sup> sentence of the second paragraph under "Wheat (including Durum)" on page 15 to read: "Application may be timed to control later-emerging weeds when wheat is between early joint and second node stage (Zadoks 32); however, do not apply unless the risk of injury is acceptable."
2. Submit one (1) copy of the final printed labeling before you release this product for shipment under the subject labeling.

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

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

Sincerely yours,

*Joanne I. Miller*

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

Enclosure

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(Base label):

(Logo) Dow AgroSciences

# CleanWave™ Herbicide

**For control of annual and perennial broadleaf weeds in wheat (including durum) in the Western Great Plains**

<b>Group</b>	<b>4</b>	<b>HERBICIDE</b>
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**Active Ingredients:**

Triisopropanolammonium salt of 2-pyridine carboxylic acid, 4-amino-3,6-dichloro- .....	1.92%
Fluroxypyr 1-methylheptyl ester: [(4-amino-3,5-dichloro-6-fluoro-2-pyridinyl)oxy]acetic acid, 1-methylheptyl ester .....	20.22%
Other Ingredients .....	77.86%
Total .....	100.00%

Contains Petroleum Distillates

**Acid Equivalents:**

- aminopyralid: (2-pyridine carboxylic acid, 4-amino-3,6-dichloro-) - 1.0% (0.085 lb/gal)
- fluroxypyr: [(4-amino-3,5-dichloro-6-fluoro-2-pyridinyl)oxy]acetic acid - 14.03% (1.2 lb/gal)

**ACCEPTED  
with COMMENTS  
In EPA Letter Dated:**

NOV 2 2006

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

62719-525

**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.)

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### Precautionary Statements

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#### Hazards to Humans and Domestic Animals

**Corrosive • Causes Irreversible Eye Damage • Harmful If Swallowed**

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

#### Personal Protective Equipment (PPE)

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

**Applicators and other handlers must wear:**

- Long-sleeved shirt and long pants
- Chemical-resistant gloves such as Barrier Lamine or Viton
- Protective eyewear
- Shoes plus socks

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.

**Engineering Controls Statements**

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

**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 eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

**If swallowed:** Call a Poison Control Center or doctor immediately for treatment advice. Have a 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.

**If on skin or clothing:** 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.

**Note to Physician:** Contains aromatic petroleum distillate. Vomiting and aspiration may cause chemical pneumonitis.

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**

This product is toxic to fish. Drift or runoff from treated areas may be hazardous to aquatic organisms and non-target plants. 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 cleaning equipment or disposing of equipment washwaters.

**Physical or Chemical Hazards**

**Combustible.** Do not use or store near heat or open flame.

**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 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](http://www.dowagro.com).

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

**Store above 20°F or warm and agitate before use.**

EPA Reg. No. 62719-525

EPA Est. \_\_\_\_\_

™Trademark of Dow AgroSciences LLC

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

**Net Contents \_\_ gal**

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(cover):

(Logo) Dow AgroSciences

# CleanWave™ Herbicide

**For control of annual and perennial broadleaf weeds in wheat (including durum) in the Western Great Plains**

<b>Group</b>	<b>4</b>	<b>HERBICIDE</b>
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Triisopropanolammonium salt of 2-pyridine carboxylic acid, 4-amino-3,6-dichloro- .....	1.92%
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Other Ingredients .....	77.86%
<b>Total .....</b>	<b>100.00%</b>

Contains Petroleum Distillates

**Acid Equivalents:**

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**Keep Out of Reach of Children**

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### **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 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 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.**

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P5F / CleanWave / MTR Amend / 10-19-06

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EPA Est. \_\_\_\_\_

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

**Net Contents \_\_ gal**

(Page 1 through end):

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## Precautionary Statements

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# DANGER

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

### Personal Protective Equipment (PPE)

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

#### Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves such as Barrier Laminate or Viton
- Protective eyewear
- Shoes plus socks

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.

### Engineering Controls Statements

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

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Users should:

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**Environmental Hazards**

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**Physical or Chemical Hazards**

**Combustible.** Do not use or store near heat or open flame.

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**Directions for Use**

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It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Read all Directions for Use carefully before applying.

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

**Agricultural Use Requirements**

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

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

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

- Coveralls
- Chemical-resistant gloves such as Barrier Laminate or Viton
- Shoes plus socks
- Protective eyewear

**Storage and Disposal**

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

**Pesticide Storage:** Store above 20°F or warm and agitate before use.

**Pesticide Disposal:** Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

**Container Disposal (Metal):** Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in sanitary landfill, or by other procedures approved by state and local authorities.

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

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**General Information**

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CleanWave™ herbicide is recommended for selective control of annual and perennial broadleaf weeds in wheat (including durum) grown in the western Great Plains that is rotated with canola, corn, fallow, flax, grain sorghum, grasses, or mustard.

Not for use on wheat underseeded with a legume.

**Resistance Management Guidelines**

- Use an effective integrated pest management (IPM) program, integrating tillage or other mechanical methods, crop rotation or other cultural control methods into weed control programs whenever practical.
- *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 recommended 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**

- Do not apply CleanWave directly to, or allow spray drift to come in contact with, broadleaf crops or other broadleaf plants, including, but not limited to, alfalfa, canola, beans, cotton, flowers, grapes, lettuce, lentils, mustard, peas, potatoes, radishes, soybeans, sugarbeets, sunflowers, tobacco, tomatoes, vegetables, or other desirable broadleaf crops or ornamental plants or soil where sensitive crops will be planted the same season.
- Avoid application where proximity of crops or other desirable plants is likely to result in exposure to spray or spray drift.
- Use directions in Dow AgroSciences supplemental labeling for CleanWave may supersede directions or limitations in this labeling.
- Do not contaminate irrigation ditches or water used for domestic purposes.
- **Maximum Application Rate:** The total amount of CleanWave applied broadcast or as a spot treatment per year, must not exceed 14 fl oz per acre per growing season.
- **Chemigation:** Do not apply this product through any type of irrigation system.
- **Do not transfer livestock** following consumption of treated straw to sensitive broadleaf crop areas without first allowing 3 days consumption of feeding of untreated forage. If livestock are transferred within less than 3 days of eating untreated forage, urine and manure may contain enough aminopyralid to cause injury to sensitive broadleaf plants.

**Crop Rotation Intervals**

Residues of CleanWave in treated plant tissues, including the treated crop or weeds, which have not completely decayed may affect succeeding crops. The intervals in the table below are based on average annual precipitation, regardless of irrigation practices. Observance of recommended crop rotation intervals should result in adequate safety to rotational crops. However, CleanWave is dissipated in the soil by microbial activity and the rate of microbial activity is dependent upon several interrelating factors including soil moisture, temperature and organic matter. Therefore, accurate prediction of rotational crop safety is not possible. In areas of low organic matter (<2.0%) and less than 15 inches average annual precipitation, potential for crop injury may be reduced by burning or removal of plant residues, supplemental fall irrigation and deep moldboard plowing prior to planting the sensitive crop.

**Note:** Numbers in parenthesis (-) refer to footnotes below.

Rotation Crops	Rotation Interval (Months)
grasses, wheat (including durum)	0

barley, field corn, grain sorghum, millet, oats, rye, sweet corn, triticale	4
canola (rapeseed), flax, mustard, popcorn	9
alfalfa, chickpea, dry bean, field pea, lentil, soybean, safflower, sunflower, sugarbeet, potato	18
crops not listed	24 (1)

1. A field bioassay is recommended prior to planting any broadleaf crop that is not listed in the table above under Rotation Crops. Do not rotate to unlisted crops for at least 24 months after application.

**Field Bioassay Instructions:** In a representative section of a field 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, or drainage. The field bioassay can be initiated at any time between harvest of the treated crop and before the planting of the intended 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 may be planted. If herbicidal activity is observed, do not plant the field to the test rotational crop; plant only a labeled crop or crop listed in the table below for which the rotational interval has clearly been met.

**Avoiding Injury to Non-Target Plants**

This product can affect broadleaf plants directly through foliage and indirectly by root uptake from treated soil. Do not apply CleanWave directly to, or allow spray drift to come in contact with broadleaf crops, including, but not limited to alfalfa, canola, beans, cotton, flowers, grapes, lettuce, lentils, mustard, peas, potatoes, radishes, soybeans, sugar beets, sunflowers, tobacco, tomatoes, vegetables, or other desirable broadleaf crops or ornamental plants or soil where sensitive crops will be planted the same season. (See guidance in section entitled Crop Rotation Intervals.)

**Residues in Plants or Manure:** Do not use plant residues, including straw from treated areas, or manure or bedding straw from animals that have grazed or consumed forage from treated areas, for composting or mulching, where plants may be grown the following season. Do not spread manure from animals that have grazed or consumed forage from treated areas on land used for growing broadleaf crops. To promote herbicidal decomposition, plant residues should be evenly incorporated or burned. Breakdown of aminopyralid in crop residues or manure is more rapid under warm, moist soil conditions and may be enhanced by supplemental irrigation.

**Avoid Movement of Treated Soil:** Avoid conditions under which soil from treated areas may be moved or blown to areas containing desirable plants. Wind-blown dust containing aminopyralid may produce visible symptoms, such as epinasty (downward curving or twisting of leaf petioles or stems) when deposited on plants; however, serious injury is unlikely. To minimize potential movement of aminopyralid on wind-blown dust, avoid treatment of powdery dry or light sandy soils until soil has been settled by rainfall or irrigation or irrigate shortly after application.

**Precautions for Avoiding Spray Drift**

Spray drift, even very small quantities of the spray that may not be visible, may severely injure crops whether dormant or actively growing. When applying CleanWave, use low-pressure equipment capable of producing sprays of uniform droplet size with a minimum of fine spray droplets. Under adverse weather conditions, fine spray droplets that do not settle rapidly onto target vegetation may be carried a considerable distance from the treatment area. A drift control or spray thickening agent may be used with this product to improve spray deposition and minimize the potential for spray drift. If used, follow all use recommendations and precautions on the product label.

**Ground Applications:** To minimize spray drift, apply CleanWave in a total spray volume of 8 gallons or more per acre using spray equipment designed to produce large-droplet, low pressure sprays. Refer to the spray equipment manufacturer's recommendations for detailed information on nozzle types, arrangement, spacing and operating height and pressure. Spot treatments should be applied only with a calibrated boom to prevent over application. Operate equipment at spray pressures no greater than is necessary to produce a uniform spray pattern. Operate the spray boom no higher than is necessary to produce a uniformly overlapping pattern between spray nozzles. Do not apply with hollow cone-type insecticide nozzles or other nozzles that produce a fine-droplet spray.

**Aerial Application:** To minimize spray drift, apply CleanWave in a total spray volume of 3 gallons or more per acre. 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 potential for temperature inversion. Spray drift from aerial application can be minimized by applying a coarse spray at spray boom pressure no greater than 30 psi; by using straight-stream nozzles directed straight back; and by using a spray boom no longer than 3/4 the rotor or wing span of the aircraft. Spray pattern and droplet size distribution can be evaluated by applying sprays containing a water-soluble dye marker or appropriate drift control agents over a paper tape (adding machine tape). Mechanical flagging devices may also be used.

Do not apply under conditions of a low level air temperature inversion. A temperature inversion is characterized by little or no wind and lower air temperature near the ground than at higher levels. The behavior of smoke generated by an aircraft mounted device or continuous smoke column released at or near site of application will indicate the direction and velocity of air movement. A temperature inversion is indicated by layering of smoke at some level above the ground and little or no lateral movement.

**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 75% of wingspan or 90% of rotor diameter.
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.

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 produce larger droplets.

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

**Number of nozzles** - Use the minimum number of nozzles that will 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 75% of the wingspan or 90% of rotor width 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 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 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. A temperature inversion is characterized by increasing temperature with altitude and commonly develops at night when there is limited cloud cover and calm conditions. They begin to form as the sun sets and often continue into the morning. Presence of a temperature inversion is indicated by ground fog; however, if ground fog is not present, a temperature inversion can also be indicated by movement of smoke from a ground or an aircraft smoke generator. Smoke that forms a layer and moves laterally in a connected cloud (under low wind conditions) is an indication of inversion conditions, while smoke that moves upward and dissipates rapidly is an indication of 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, non-target crops) is minimal (e.g., when wind is blowing away from the sensitive areas).

**Mixing Instructions**

1. Fill spray tank with water equal to 1/2 to 3/4 of the required spray volume and start agitation.
2. Add the required amount of CleanWave.
3. Agitate during final filling of the spray tank and maintain sufficient agitation during application to ensure uniformity of the spray mixture.

**Note:** Allow time for thorough mixing of each spray ingredient before adding the next. If allowed to stand after mixing, agitate spray mixture before use.

**Tank Mixing**

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 with products containing fluroxypyr or aminopyralid is not prohibited by the label of the tank mix product. Use as directed in the Directions for Use section of the tank mix partner.

**Tank Mixing Precautions:**

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

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

**Tank Mixing Instructions**

Fill spray tank with water to 1/2 to 3/4 of the required spray volume. Start agitation. Add different formulation types in the order indicated, allowing time for complete mixing and dispersion after addition of each.

1. Add dry flowables; wettable powders; aqueous suspensions, flowables or liquids.
2. Maintain agitation and fill spray tank to 3/4 of total spray volume and then add CleanWave and other emulsifiable concentrates and any solutions.

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.

**Use with Sprayable Liquid Fertilizer Solutions:** CleanWave is compatible with most non-pressurized liquid fertilizer solutions; however, if liquid fertilizer solutions are to be applied with CleanWave, a compatibility test (jar test) should be made prior to mixing. Jar tests are particularly important when a new batch of fertilizer or pesticide is used, when the water source changes, or when tank mixture ingredients or concentrations are changed. A compatibility test is performed by mixing the spray components (in the desired order and proportions) into a clear glass jar before mixing in the spray tank. Use of a compatibility aid such as Unite or Compex may help obtain and maintain a uniform spray solution during mixing and application. Agitation in the spray tank must be vigorous to compare with jar test agitation. For best results, liquid fertilizer should not exceed 50% of the total spray volume. Premix CleanWave with water and add to the liquid fertilizer/water mixture while agitating contents of the spray tank. Apply the spray the same day it is prepared while maintaining continuous agitation.

**Advisory:** Foliar-applied liquid fertilizers, used as a carrier for CleanWave, can cause yellowing or leaf burn of crop foliage.

**Sprayer Clean-Out**

To avoid injury to desirable plants, equipment used to apply CleanWave should be thoroughly cleaned before re-using to apply any other chemicals as follows.

1. Rinse and flush application equipment thoroughly at least 3 times with water after use. Dispose of rinse water by application to treatment area or in non-cropland area away from water supplies.
2. During the second rinse, add 1 qt of household ammonia for every 25 gallons of water. Circulate the solution through the entire system so that all internal surfaces are contacted (15 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. Remove nozzles and screens and clean separately.

### Application Directions

#### Application Timing

Apply to actively growing weeds. Extreme growing conditions such as drought or near freezing temperatures prior to, at, or following application may reduce weed control and increase the risk of crop injury at all stages of growth. **Only weeds that have emerged at the time of application will be controlled.** If foliage is wet at the time of application, control may be decreased. Applications of CleanWave are rainfast within 1 hour after application.

#### Effect of Temperature on Herbicidal Activity

*Herbicidal activity of CleanWave is influenced by weather conditions. Optimum activity requires active plant growth. The temperature range for optimum herbicidal activity is 55°F to 75°F. Reduced activity will occur when temperatures are below 45°F or above 85°F. Frost before application (3 days) or shortly after (3 days) may reduce weed control and crop tolerance.*

#### Application Rates

Generally, application rates at the lower end of the recommended rate range will be satisfactory for young, succulent growth of weed species and biotypes of kochia resistant to ALS herbicides. For less sensitive species, perennials, biotypes of kochia tolerant to dicamba herbicides, and under conditions where control is more difficult (plant stress conditions such as drought or extreme temperatures, dense weed stands and/or larger weeds), the higher rates within the rate range will be needed.

#### Spray Coverage

Use sufficient spray volume to provide thorough coverage and a uniform spray pattern. Do not broadcast apply in less than 3 gallons of total spray volume per acre. For best results and to minimize spray drift, apply in a spray volume of 10 gallons or more per acre. As vegetative canopy and weed density increase, spray volume should be increased to obtain equivalent weed control. Use only nozzle types and spray equipment designed for herbicide application. To reduce spray drift, follow precautions under Avoiding Injury to Non-Target Plants.

#### Spot Treatments

To prevent misapplication, it is recommended that spot treatments be applied only with a calibrated boom or with hand sprayers according to directions provided below.

**Hand-Held Sprayers:** Hand-held sprayers may be used for spot applications. Care should be taken to apply the spray uniformly and at a rate equivalent to a broadcast application. Application rates in the table are based on an area of 1000 sq ft. Mix the amount of CleanWave (fl oz or ml) corresponding to the desired broadcast rate in 1 gallon or more of spray. To calculate the amount of CleanWave required for larger areas, multiply the table value (fl oz or ml) by the area to be treated in "thousands" of square feet, e.g., if the area to be treated is 3500 sq ft, multiply the table value by 3.5 (calc. 3500 ÷ 1000 = 3.5). An area of 1000 sq ft is approximately 10.5 x 10.5 yards (strides) in size.

Amount of CleanWave per gallon of Spray to Equal Specified Broadcast Rate	
10.5 fl oz/acre	14 fl oz/acre

	0.33 fl oz (10 ml)
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1 fl oz = 29.6 (30) ml

## Broadleaf Weeds Controlled or Suppressed

### Broadleaf Weed Control and Management Practices

**Management of Kochia Biotypes:** Research has demonstrated that many biotypes of kochia can occur within a single field. While kochia biotypes can vary in their susceptibility to CleanWave, all known biotypes will be suppressed or controlled by the 14 fl oz per acre labeled rate. Application of CleanWave at rates below the 14 fl oz per acre rate can result in a shift to more tolerant biotypes within a field.

**Best Resistance Management Practices:** Extensive populations of dicamba tolerant kochia have been identified in certain small grain, fallow, and corn production regions (such as Chouteau, Fergus, Liberty, Toole, and Treasure counties in the state of Montana). CleanWave is recommended at a rate of 14 fl oz per acre for the control of dicamba tolerant Kochia biotypes. In addition, use of CleanWave should be rotated with products that do not contain dicamba to minimize selection pressure. Use of these practices will preserve the utility of CleanWave for control of dicamba tolerant kochia biotypes. Unless recommended by Dow AgroSciences, do not use less than 14 fl oz of CleanWave per acre for control of known dicamba tolerant biotypes of kochia.

**Weeds Suppressed:** Weed suppression is expressed as a reduction in weed competition (reduction population or vigor) as compared to an untreated area. The degree of weed control and duration of effect may vary with weed size, density, application rate, coverage, and growing conditions before, during and after treatment.

**Effect on Perennial Weeds:** CleanWave will suppress the initial top growth and inhibit regrowth during the season of application. At higher use rates shown on this label, CleanWave may cause a reduction in shoot regrowth in the season following application; however, plant response may be inconsistent due to inherent variability in shoot regrowth from perennial root systems.

**Note:** Numbers in parentheses (-) refer to footnotes below.

Weeds Controlled		Weeds Suppressed <sup>†</sup>
bedstraw (cleavers) (2)	mallow, Venice	bindweed, field
buckwheat, wild (3)	marshelder (1)	buffalobur (1)
chamomile, false (scentless)	morningglory	canola, volunteer
chamomile, mayweed (dogfennel)	nightshade, black (1)	field horsetail
chickweed	nightshade, cutleaf (1)	knotweed
cocklebur, common (1)	nightshade, Eastern black (1)	ladysthumb (1)
dock, curly	nightshade, hairy (1)	mallow, common
flax, volunteer	peas, volunteer	mustard species
grape species	puncturevine	pennycress, field
hemp dogbane	ragweed, common (1)	pigweed species
horseweed (marestail)	ragweed, giant (1)	potato, volunteer
kochia (4)	sowthistle, annual	smartweed, green (1)
lambquarters, common (1)	sunflower (1)	sowthistle, perennial (5)
lentils, volunteer	velvetleaf	thistle, Canada (5)
lettuce, prickly	wormwood, biennial	thistle, Russian

1. For best control or suppression, apply up to the 2 to 4 leaf stage of growth.
2. For best control, apply in the 1 to 4 whorl stage of growth.

- 3. For best control, apply in the 1 to 3 leaf stage of growth, before vining.
- 4. Includes herbicide tolerant or resistant biotypes up to 8 inches tall. Best control is achieved when weeds are at least 1 inch tall. Refer to Broadcast Application Rates table for additional information.
- 5. For best control or suppression, apply from rosette to bud (pre-flower) stage of growth.

**Wheat (Including Durum)**

**Application Timing:** Apply as a broadcast postemergence spray to actively growing wheat from the 3 leaf growth stage up to early jointing stage (Zadoks 30) for control of listed broadleaf weeds. Apply when weeds are actively growing and at recommended growth stages. For best activity on perennial weeds such as Canada thistle, apply when the majority of the basal leaves have emerged from the soil up to bud stage. Only weeds that have emerged at the time of application will be controlled.

Treatments may be timed to control later-emerging weeds by making applications when the crop is between the early joint and second node stage of growth (Zadoks 32); however, do not apply unless the risk of injury is acceptable. Factors which can influence crop tolerance at later application stages include inaccurate determination of crop growth stage, tank mix partners or environmental factors. Do not apply after the second node stage.

Extreme growing conditions such as drought or near freezing temperatures prior to, at, and following time of application may reduce weed control and increase the risk of crop injury at all stages of growth. **Do not use this product if the cereal crop is underseeded with a legume.**

**Spot Application:** Spot applications may be made; however, to prevent over-application spot treatments should be applied at rates and spray volumes equivalent to broadcast application. See instructions for Spot Treatments in Application Directions section.

**Broadcast Application Rates:**

Numbers in parentheses (-) refer to footnotes following table.

Weed Size or Kochia Biotype (1)	Application Rate (fl oz/acre)
broadleaf weed seedlings less than 4 inches tall, including ALS resistant kochia biotypes (2)	10.5
broadleaf weed seedlings less than 8 inches tall or vining; dicamba tolerant kochia biotypes (3)	14

- 1. See Weeds Controlled or Suppressed section for a complete listing of weeds controlled or suppressed.  
 A rate of 10.5 fl oz per acre will provide satisfactory control of kochia seedlings less than 4 inches tall, excluding dicamba tolerant biotypes. Control of small kochia will be more consistent if kochia is at least 1 inch tall. Unless recommended by Dow AgroSciences, do not use less than 10.5 fl oz of CleanWave per acre for control of kochia.
- 2. A minimum rate of 14 fl oz per acre should be used for optimal control of dicamba tolerant kochia populations (see Best Resistance Management Practices in the Broadleaf Weeds Controlled section above.)

**Tank Mixtures for Wheat (including Durum)**

CleanWave may be applied in tank mix combination with labeled rates of other products registered for postemergence application in wheat. See Tank Mixing Precautions under Mixing Instructions. 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.

The following tank mix partners are recommended to improve control of certain weed species:

Tank Mix Partner	Recommended Rate/Acre	Weed Species
2,4-D ester or amine	1/2 to 3/4 pint (4 lb/gal)	mustard, pigweed, Canada thistle, Russian



		thistle, field bindweed
MCPA ester or amine	1/2 to 3/4 pint (4 lb/gal)	mustard
Harmony GT herbicide	1/12 to 3/10 oz	mustard, pigweed, Russian thistle
Express XP herbicide	1/8 to 1/3 oz	mustard, Canada thistle, Russian thistle
Ally XP herbicide	1/10 oz	mustard, pigweed, Russian thistle

**Restrictions:**

- There are no restrictions on grazing following application of CleanWave at labeled rates.
- Do not apply more than 14 fl oz per acre of CleanWave per growing season.
- Do not apply more than once per growing season.
- **Preharvest Interval:** Do not apply within 14 days of harvest for hay or within 50 days of harvest for grain and straw.

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