

Reg # 352-522

PM-25

H-19/14



ACCEPTED
 FEB 4 1995

Under the Federal Insecticide, Fungicide, and Herbicide Act, as amended, for the pesticide registered under
 EPA Reg. No. 352-522

Glean

fertilizer compatible herbicide



"..... A Growing Partnership 'With Nature'"

111

GLEAN FC HIGHLIGHTS

- For preemergence weed control in winter wheat and winter oat in selected areas.
- For selective postemergence broadleaf weed control in both winter and spring wheat and barley and spring oat (winter oat in selected areas).
- Postemergence rates are 1/6 to 1/3 ounce per acre (see APPLICATION information).
- Apply postemergence to wheat, barley and oat from the 2-leaf stage but before boot (2-leaf to before flag leaf is visible on spring cereal crops in Pacific Northwest).
- May be applied by ground or by air.
- Use in tank mixtures with other registered herbicides for broader spectrum weed control (see TANK MIXTURES).
- Recommended for land primarily dedicated to long-term production of wheat, barley or oat (see CROP ROTATION section for recropping information).
- Consult label text for complete instructions. Always read and follow label DIRECTIONS FOR USE.

TABLE OF CONTENTS

PRECAUTIONARY STATEMENTS

DIRECTIONS FOR USE

GENERAL INFORMATION

 Environmental Conditions and Biological Activity

APPLICATION INFORMATION

 Use Rates

 Frequency of Application

 Application Timing

 Weeds Controlled

 Weeds Partially Controlled

 Surfactants

 Ground Application

 Aerial Application

 Product Measurement

 Resistance

 Tank Mixtures

 Specific Weed Problems

CROP ROTATION

 Minimum Recropping Intervals

 Soil pH Limitations

 Checking Soil pH

 Cereals—Recropping Intervals

 Noncereal Crops—Recropping Intervals

GRAZING

SPRAY EQUIPMENT

SPRAYER CLEANUP

 At the End of the Day

 After Spraying GLEAN FC and before Spraying Crops Other Than Wheat, Barley, or Oat

SPRAY DRIFT MANAGEMENT

 Importance of Droplet Size

 Controlling Droplet Size - General Techniques

 Controlling Droplet Size - Aircraft

 Boom Height

 Wind

 Temperature and Humidity

 Temperature Inversions

 Shielded Sprayers

 Air-Assisted (Air Blast) Field Crop Sprayers

 Bioassay

 Field Bioassay

 DuPont LRB™ Bioassay Service

PRECAUTIONS

STORAGE AND DISPOSAL

NOTICE OF WARRANTY



GLEAN®

fertilizer compatible herbicide

Dry flowable

For Use on Wheat, Barley, and Oat

<u>Active Ingredient</u>	<u>By Weight</u>
Chlorsulfuron	
2-Chloro-N-[(4-methoxy-6-methyl-1,3,5-triazin-2-yl)aminocarbonyl]benzenesulfonamide	75%
<u>Inert Ingredients</u>	<u>25%</u>
TOTAL	100%

EPA Reg. No. 352-522
U.S. Pat. 4,127,405

KEEP OUT OF REACH OF CHILDREN

CAUTION

STATEMENT OF PRACTICAL TREATMENT

If swallowed: Call a physician or Poison Control Center. Drink 1 or 2 glasses of water and induce vomiting by touching back of throat with finger. Do not induce vomiting or give anything by mouth to an unconscious person.

If in eyes: Flush eyes with plenty of water. Call a physician if irritation persists.

If on skin: Wash with plenty of soap and water. Call a physician if irritation persists.

For medical emergencies involving this product, call toll-free 1-800-441-3637.

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION! MAY IRRITATE EYES, NOSE, THROAT OR SKIN. Harmful if swallowed or absorbed through skin. Avoid contact with skin, eyes or clothing.

PERSONAL PROTECTIVE EQUIPMENT

Applicators and other handlers must wear:

Long-sleeved shirt and long pants.

Waterproof gloves.

Shoes plus socks.

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.

ENVIRONMENTAL HAZARDS

Do not apply directly to water, or 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.

3914

4 9 14

IMPORTANT

DuPont GLEAN® Fertilizer Compatible Herbicide (GLEAN FC) is recommended for use on land primarily dedicated to the long-term production of wheat, barley, or oat.

Injury to or loss of desirable trees or vegetation may result from failure to observe the following:

- Do not apply, drain or flush equipment on or near desirable trees or other plants, or on areas where their roots may extend, or in locations where the chemical may be washed or moved into contact with their roots.
- Do not use on lawns, walks, driveways, tennis courts, or similar areas.

Injury to or loss of adjacent sensitive crops and vegetation may result from failure to observe the following:

- Take all necessary precautions to avoid all direct or indirect contact (such as spray drift) with non-target plants or areas.
- Carefully observe sprayer cleanup instructions, both prior to and after using this product, as spray tank residue may damage crops other than wheat, barley, or oat.

PESTICIDE HANDLING

- Calibrate sprayers only with clean water away from the well site.
- Make scheduled checks of spray equipment.
- Assure accurate measurement of pesticides by all operation employees.
- Mix only enough product for the job at hand.
- Avoid over-filling of spray tank.
- Do not discharge excess material on the soil at a single spot in the field/grove or mixing/loading station.
- Dilute and agitate excess solution and apply at labeled rates/uses.
- Avoid storage of pesticides near well sites.
- When triple rinsing the pesticide container, be sure to add the rinsate to the spray mix.

DIRECTIONS FOR USE

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

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 12 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.
- Waterproof gloves.
- Shoes plus socks.

GLEAN FC should be used only in accordance with recommendations on this label or in separate published DuPont recommendations.

DuPont will not be responsible for losses or damages resulting from the use of this product in any manner not specifically recommended by DuPont.

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

GENERAL INFORMATION

GLEAN FC is a dry-flowable granule that controls weeds in wheat (including durum), barley, and spring oat. In addition, GLEAN FC may also be used on winter oat in Texas, Western Oregon, and Western Washington. GLEAN FC is mixed in water or directly into liquid nitrogen fertilizer solutions and applied as a uniform broadcast spray. A surfactant should be used in the spray mix unless otherwise specified on this label. GLEAN FC is noncorrosive, nonflammable, nonvolatile, and does not freeze.

GLEAN FC controls weeds by both preemergence and postemergence activity. For best preemergence results, apply GLEAN FC before weed seeds germinate. Use sprinkler irrigation or allow rainfall to move GLEAN FC 2 to 3" deep into the soil profile.

For best postemergence results, apply GLEAN FC to young, actively growing weeds. The use rate depends upon the weed spectrum and size of weeds at time of application. The degree and duration of control may depend on the following:

- weed spectrum and infestation intensity
- weed size at application
- environmental conditions at and following treatment.

5914

Environmental Conditions and Biological Activity

GLEAN FC is absorbed through the roots and foliage of broadleaf weeds, rapidly inhibiting their growth. One to 3 weeks after application to weeds, leaves of susceptible plants appear chlorotic, and the growing point subsequently dies.

Postemergent application of GLEAN FC provides the best control in vigorously growing crops that shade competitive weeds. Weed control in areas of thin crop stand or seeding skips may not be as satisfactory. However, a crop canopy that is too dense at application can intercept spray and reduce weed control.

GLEAN FC may injure crops that are stressed from adverse environmental conditions (such as extreme temperatures or moisture), abnormal soil conditions, or cultural practices. In addition, different varieties of the crop may be sensitive to treatment with GLEAN FC under otherwise normal conditions. Treatment of such varieties may injure crops.

In warm, moist conditions, the expression of herbicide symptoms is accelerated in weeds; in cold, dry conditions, expression of herbicide symptoms is delayed. In addition, weeds hardened-off by drought stress are less susceptible to GLEAN FC.

Rainfall is needed to move GLEAN FC into the soil for preemergence weed control, but postemergence weed control may be reduced if rainfall occurs soon after application.

APPLICATION INFORMATION

GLEAN FC can be mixed with water or liquid fertilizer for application. To prepare the tank mix, follow these steps:

1. Add the required amount of water or liquid fertilizer and turn on the agitator.
2. Add the required amount of GLEAN FC.
3. Once the GLEAN FC is dissolved, add any companion products.

Always mix GLEAN FC in the spray solution (water or liquid fertilizer) before adding other products to the same spray tank.

Use the spray solution within 24 hours to avoid product degradation. If the spray solution is left standing, agitate it thoroughly before reusing.

Do not use GLEAN FC with spray additives that reduce the pH of the spray solution to below 3.0.

USE RATES

Preemergence

Winter oat

Texas, Western Oregon and Western Washington only:
Apply GLEAN FC at 1/3 oz per acre.

Texas: Apply GLEAN FC up to 1/2 oz per acre where annual ryegrass is the problem.

Winter wheat

North Central Texas and Southern Oklahoma only:
Apply GLEAN FC at 1/2 oz per acre for suppression of annual ryegrass.

Postemergence

All crops (all states except Southern Idaho and Utah):
Apply GLEAN FC once at 1/6 to 1/3 oz per acre.

Use 1/6 oz per acre for short-term control or suppression; use 1/3 oz per acre for soil residual weed control. Where soil pH is 6.5 or lower, use 1/3 oz per acre where maximum soil residual weed control is desired. Do not use less than 1/6 oz per acre.

All crops (Southern Idaho and Utah): Apply GLEAN FC at 1/6 oz per acre only and only in combination with other broadleaf herbicides having a different mode of action (see Tank Mixtures). GLEAN FC is not to be used in fallow in this area.

FREQUENCY OF APPLICATION

The maximum use rates for GLEAN FC are determined based on the soil pH, soil temperature, and soil moisture for a region. Based on these factors, GLEAN FC use should be limited to the maximum use rates and minimum application intervals specified below. For more information on soil pH, soil temperature, soil moisture, and recropping, see Crop Rotation.

Location	Maximum Application Rate (oz/A)	GLEAN FC Minimum Application Interval
N. Central TX, Southern OK		
Preemergence use	1/2	Once per crop period
	or	
Postemergence use	1/3	Once per crop period
Central & E. KS (East of Hwy. 183)	1/3	Once per crop period
S. Central NE OK (East of the panhandle except Southern OK)		
TX (East of the panhandle except N. Central TX)		
W. Central & Western KS (West of Hwy. 183)	1/3	Once every 36 months
Eastern NM Western NE OK panhandle TX panhandle		
CA, Northern ID, OR, & WA	1/3	Once every 18 months
Southern ID & UT	1/6	Once every 48 months

All other Areas- Do not use

6914

APPLICATION TIMING

Preemergence (After Planting) to Winter Wheat and Winter Oat for Suppression of Annual Ryegrass

GLEAN FC can be used preemergence on winter wheat in North Central Texas and Southern Oklahoma only and preemergence on winter oat in Texas, Western Oregon, and Western Washington only.

Apply GLEAN FC after planting seed, but before the crop emerges. Rainfall or sprinkler irrigation following treatment is necessary to activate GLEAN FC before weed seeds germinate and develop an established root system. Wheat and oat seeds should be planted at least 1" deep.

In the Pacific Northwest, do not apply GLEAN FC preemergence if cold or dry weather conditions exist. Wait until the weather improves and the crop is growing vigorously before making the application (See Postemergence to Winter Wheat and Winter Barley below).

Preemergence applications of GLEAN FC are not recommended where organophosphate insecticides (such as Di-Syston¹, etc.) have been used as an in-furrow treatment, as crop injury may result.

Do not apply GLEAN FC preemergence to barley.

Postemergence to Winter Wheat and Winter Barley in all areas and Postemergence to Winter Oat in Texas, Western Oregon and Western Washington only.

Apply in the fall or spring anytime after the crop is in the 2-leaf stage, but before boot.

Do not apply during boot or early heading as crop injury may result.

Treat late-seeded wheat or barley after the crop has started to tiller as the combined effect of herbicide stress and stress from cold weather and/or moisture could cause crop injury.

In the Pacific Northwest, to avoid possible crop injury from the combined effects of herbicide stress and severe winter weather, do not apply Glean FC during late fall, winter or early spring unless crop is well established and has started to tiller.

GLEAN FC should not be used within 60 days of crop emergence where organophosphate insecticides (such as "Di-Syston", etc.) have been used as an in-furrow treatment, since crop injury may result.

Postemergence to Spring Wheat, Durum, Spring Barley, and Spring Oat*

In the Pacific Northwest, apply GLEAN FC to crops anytime from the 2-leaf stage through the second joint stage but before the flag leaf is visible.

In all other areas, apply GLEAN FC anytime from the 2-leaf stage but before boot.

*Note: Apply to Vic durum at or early tillering, but before boot.

WEEDS CONTROLLED

GLEAN FC effectively controls the following weeds when applied at the rates shown:

1/6 - 1/4 oz per acre

Blue mustard	Pincappleweed
Conical catchfly	Prostrate pigweed
Curly dock	Redroot pigweed
Cutleaf evening primrose	Shepherd's purse
Field pennycress	Smooth pigweed
Flixweed**	Tansymustard**
Hempnettle	Treacle mustard
Henbit	Tumble mustard (Jim Hill)
Mayweed	Waterpod
Miners lettuce	Wild mustard

1/3 oz per acre

Bur beakchervil	Falseflax
Buttercup	Ladysthumb
Coast fiddleneck (tarweed)	Lambsquarters**
Common chickweed	Mouseear chickweed
Common groundsel	Purslane (common)
Corn spurry	Redstem filaree
Cow cockle	White cockle
False chamomile	Wild carrot
	Wild turnip

WEEDS PARTIALLY CONTROLLED*

GLEAN FC partially controls the following weeds when applied at the rates shown:

1/3 oz per acre

Annual ryegrass**	Prostrate knotweed**
Bedstraw	Russian thistle††
Canada thistle**	Sunflower**
Corn groundsel	Speedwell
Flixweed**	Tansymustard**
Kochia††	Wild buckwheat**
Pennsylvania smartweed	Wild garlic/Wild onion**
Prickly lettuce†	Wild radish**

* Partially controlled weeds exhibit a visual reduction in numbers as well as a significant loss of vigor. For better results, use 1/3 oz GLEAN FC per acre and include a tank-mix partner (refer to Tank Mixtures).

** See Specific Weed Problems for more information.

† Naturally occurring resistant biotypes of these weeds are known to occur in the Central Plains and the Pacific Northwest. See Tank Mixtures and Resistance for additional information.

†† Use GLEAN FC to control these weeds in Central Kansas, Central Nebraska, Central Oklahoma, and North Central Texas only.

SURFACTANTS

Unless otherwise specified, add a DuPont-authorized, nonionic surfactant having at least 80% active ingredient at 0.25 to 0.5% v/v (1 to 2 qt per 100 gal of spray solution).

The higher rate is particularly useful with spray volumes of 5 GPA or less and when using low rates of GLEAN FC. Consult your Agricultural dealer, applicator, or DuPont representative for a listing of approved surfactants.

Antifoaming agents may be used if needed.

Do not use liquid fertilizer as a substitute for surfactant.

GROUND APPLICATION

To obtain optimum spray distribution and thorough coverage, use flat-fan or low-volume flood nozzles.

When using flat-fan nozzles, use a spray volume of at least 3 gal per acre (GPA). When using flood jet or Raindrop RA² nozzles, use higher spray volume (minimum, 20 GPA) to ensure thorough coverage. However, GLEAN FC may not be applied at less than 10 GPA when using small orifice flooding nozzles such as flood jet TK 5 to TK 7.5 or equivalent. These flooding nozzles must be on a 30-inch spacing or not less than 13 GPA when on a 40-inch spacing. It is essential to overlap the nozzles 100% for all spacings.

Use screens that are 50-mesh or larger.

AERIAL APPLICATION

Use nozzle types and arrangements that provide optimum spray distribution and maximum coverage at 1 to 5 GPA. Use at least 3 GPA in Idaho, Oregon, or Utah.

When applying Glean FC by air in areas where sensitive crops are nearby, use solid stream nozzles oriented straight back. Adjust swath to avoid spray drift damage to downwind sensitive crops and/or use ground equipment to treat border edge of field. See "Spray Drift Management" section of this label.

For aerial application in Washington, follow the directions on the Washington special local need label, "GLEAN FC Herbicide Aerial Application to Wheat, Barley, and Oat In the State of Washington".

PRODUCT MEASUREMENT

GLEAN FC is measured using the GLEAN FC volumetric measuring cylinder. The degree of accuracy of this cylinder varies by $\pm 10.0\%$. For more precise measurement, use scales calibrated in ounces.

RESISTANCE

Biotypes of certain weeds listed on this label are resistant to GLEAN FC and other herbicides with the same mode of action,* even at exaggerated application rates. Biotypes are naturally occurring individuals of a species identical in appearance but with slightly different genetic compositions, the mode of action of a herbicide is the chemical interaction that interrupts a biological process necessary for plant growth and development.

1 2 14

If weed control is unsatisfactory, it may be necessary to respray problem areas using a product with a different mode of action, such as postemergence broadleaf and/or grass herbicides. If resistant weed biotypes such as kochia and Russian thistle are suspected or known to be present, consider using another herbicide treatment or adjust the use rate of the GLEAN FC tank-mix partner to help control these biotypes. Consult your agricultural dealer, consultant, applicator, and/or appropriate state agricultural extension service representative for specific alternative herbicide recommendations available in your area.

It is advisable to keep accurate records of pesticides applied to individual fields to help obtain information on the spread and dispersal of resistant biotypes.

* Naturally occurring weed biotypes that are resistant to Amber⁷ Herbicide, DuPont ALLY[®] Herbicide, DuPont FINESSE[®] Herbicide, DuPont EXPRESS[®] Herbicide or DuPont HARMONY[®] Extra Herbicide will also be resistant to GLEAN FC. In areas where these weed biotypes are known to exist, spray GLEAN FC only in tank mixtures with other broadleaf herbicides that have a different mode of action.

TANK MIXTURES

GLEAN FC may be tank mixed with other suitable registered herbicides to control weeds listed under Weeds Partially Controlled, weeds resistant to GLEAN FC, or weeds other than those listed under Weeds Controlled. Read and follow all manufacturer's label recommendations for the companion herbicide. If those recommendations conflict with this label, do not tank mix the herbicide with GLEAN FC.

Since tankmix partners can interfere with dispersion of GLEAN FC, preslurry of GLEAN FC in a separate container prior to adding it to the tank is recommended.

GLEAN FC can also be mixed with fungicides, insecticides or liquid fertilizer for use on crops.

With 2,4-D (amine or ester) or MCPA (amine or ester)

GLEAN FC can be used annually as a tank-mix treatment with 2,4-D or MCPA (preferably ester formulations) herbicides after weeds have emerged. For best results, use 1/6 to 1/3 oz of GLEAN FC per acre; add 2,4-D or MCPA herbicides to the tank at 1/4 to 1/2 lb active ingredient. Surfactant may be added to the mixture at 1/2 qt per 100 gal of spray solution; however, adding surfactant may increase the potential for crop injury. Do not add a surfactant when GLEAN FC plus 2,4-D or MCPA is applied with liquid fertilizer.

Apply GLEAN FC plus MCPA after the 3- to 5-leaf stage but before boot. Apply GLEAN FC plus 2,4-D after tillering (refer to appropriate 2,4-D's manufacturer's label), but before boot. Applying a tank mixture of GLEAN FC and 2,4-D or MCPA, with liquid fertilizer when temperatures are below freezing or when the crop is stressed from cold weather just prior to winter dormancy can result in severe foliar burn and/or crop injury.

Do not apply GLEAN FC plus 2,4-D or MCPA in combination with organophosphate insecticides.

8 2 14

With DuPont LEXONE® DF

Use 1/6 to 1/3 oz per acre of GLEAN FC with 1 to 10 2/3 oz of LEXONE DF per acre. LEXONE DF is recommended to control downy brome and cheatgrass in winter wheat in Kansas, Idaho, Oklahoma, Oregon, Texas, and Washington or to broaden the spectrum of weeds controlled. Use GLEAN FC with low rates of LEXONE DF (1 to 4 oz) when winter wheat is at the 2-leaf to 3 tiller stage.

Higher rates of LEXONE DF (up to 10 2/3 oz) should be used in combination with GLEAN FC after the crop has at least 3 tillers and has a 2" secondary root system and is actively growing.

GLEAN FC plus LEXONE DF is recommended for barley in Idaho, Oregon and Washington only.

For additional information on LEXONE DF use rates recommended for specific soils, grazing and timing statements, see the LEXONE DF supplemental label for winter wheat, barley, and fallow.

With DuPont KARMEX® DF or Diuron DF

In the Pacific Northwest where prickly lettuce, corn gromwell, annual ryegrass and annual bluegrass are the main weed problems apply 1/2 to 1 1/2 lb KARMEX DF or Diuron DF with GLEAN FC. Apply preemergence or postemergence to actively growing weeds less than 2" tall or 2" across. One-half to 1" rainfall is needed within 1 to 2 weeks after application. Follow all label guidelines and restrictions on the KARMEX DF or Diuron DF labels.

With Other Herbicides

GLEAN FC can be tank mixed with other herbicides to control weeds not listed on this label. Use 1/6 to 1/3 oz per acre of GLEAN FC with the following products at the rates shown.

Buctril® 4EC	1/4 to 1 pt per acre
Bronate®	1/2 to 2 pt per acre
Banvel®	1/8 to 1/4 pt per acre
Banvel® SGF	1/4 to 1/2 pt per acre
Curtail®	1 to 2 pt per acre

When tank mixing GLEAN FC and Assert®, always include another broadleaf herbicide having a different mode of action (for example, MCPA ester, 2,4-D ester, "Bronate," or "Buctril").

Make sure that GLEAN FC is in suspension before adding the companion herbicide. Follow the surfactant recommendation on the companion herbicide label.

With Insecticides

GLEAN FC may be tank mixed with insecticides registered for use on cereal grains. However, under certain conditions (stress from drought, cold weather or warm days and cold nights following application, or crops in the 2-4 leaf stage), tank mixtures or sequential treatments of GLEAN FC and organophosphate insecticides (such as methyl or ethyl parathion, "Di-Syston", etc.) may produce temporary crop yellowing or, in severe cases, crop injury. Test these mixtures in a small area first. If no symptoms of crop injury occur 14 days after treatment, treat the rest of the acreage.

Do not use GLEAN FC plus Malathion, as crop injury may result.

Do not apply GLEAN FC within 60 days of crop emergence where an organophosphate insecticide (such as "Di-Syston") has been applied as an in-furrow treatment, as crop injury may result.

With Fungicides

GLEAN FC may be tank mixed with DuPont BENLATE® Fungicide or DuPont MANZATE® 200 DF Fungicide or other fungicides whenever the proper timing for herbicide and fungicide treatments coincide.

With Liquid Fertilizer

GLEAN FC may be tank mixed with liquid fertilizer for application to crops. Note that adding surfactant to tank mixtures of GLEAN FC and liquid fertilizer increases the risk of crop injury. Therefore, before mixing GLEAN FC with fertilizer, check the compatibility of the tank mix on a small area before treating the entire crop.

Do not use GLEAN FC with liquid fertilizers having a pH of 3.0 or less, as rapid product degradation can result.

Note: Liquid fertilizers are significantly heavier than water per gal of liquid; therefore, to maintain proper spray volumes, adjust the nozzle type and nozzle pressure as necessary. Consult fertilizer solution suppliers and/or sprayer systems company catalogs to determine the appropriate spray nozzles.

SPECIFIC WEED PROBLEMS

Annual Ryegrass (Southeast Oklahoma, Central and North Central Texas): Apply GLEAN FC preemergence at 1/2 oz per acre. One-half to 1" of rainfall is needed to move GLEAN FC into the root zone of weeds prior to ryegrass emergence. Under abnormally wet conditions, fall applications may not adequately control ryegrass and/or broadleaf weeds that germinate in the spring.

For best results, a sequential treatment of GLEAN FC followed by LEXONE DF Herbicide is recommended.

Remove grazing cattle when fields are wet (muddy) to avoid disturbing the herbicide barrier.

Canada Thistle: Apply GLEAN FC with surfactant after the majority of thistles have emerged and while they are small (rosette stage to 4"-6" tall) and actively growing. For maximum long-term effect, yearly treatment may be required.

Flixweed, Tansymustard (Northern Idaho, Oregon and Washington): For best postemergence results, tank mix GLEAN FC at 1/3 oz per acre with another herbicide that is effective on these weeds, such as 2,4-D.

In all other areas, apply GLEAN FC at 1/6 to 1/3 oz per acre when weeds are small and actively growing. If weeds are inactive due to cold, dry weather before and/or after treatment, delay application until moisture and temperature conditions are favorable for active weed growth, or use a tank-mix treatment with 2,4-D or MCPA.

Lambsquarters: For best results, apply at least 1/3 oz per acre GLEAN FC in the fall.

For best postemergence suppression, apply GLEAN FC plus either 2,4-D or MCPA after the majority of weeds have emerged (less than 2" tall or 2" across) and are actively growing. Soil moisture should be adequate, and daily temperatures should reach at least 60 °F. Add surfactant at 1/2 to 1 qt per 100 gal of spray solution. Ensure thorough spray coverage. See Tank Mixtures.

9914
7

Prostrate Knotweed: For best results, apply in the fall.

Sunflower (New Mexico, Oklahoma (Panhandle), and Texas): For best results, apply GLEAN FC after the majority of sunflowers have emerged, are actively growing, and are not more than 2" tall. Add surfactant at 2 qt per 100 gal of water. For preemergence applications, apply GLEAN FC in early spring to allow rainfall to move GLEAN FC into the weed root zone before weeds germinate or develop an established root system.

Wild Buckwheat: For best results, apply GLEAN FC preemergence to wild buckwheat. For postemergence applications, tank mix with 2,4-D, MCPA, "Banvel"/"Banvel" SGF, "Buctril" or "Bronate" and surfactant and apply after the majority of seedlings have emerged and are actively growing.

Wild Garlic/Wild Onion: GLEAN FC provides aerial bulblet control only.

Wild Radish: For best results, apply postemergence.

CROP ROTATION

Before using GLEAN FC, carefully consider your crop rotation plans and options. For rotational flexibility, do not treat all of your wheat, barley, oat, or fallow acres at the same time.

MINIMUM RECROPPING INTERVALS

Minimum recropping intervals* are determined by the rate of breakdown of GLEAN FC applied. GLEAN FC breakdown in the soil is affected by soil pH, soil temperature, and soil moisture. Low soil pH, high soil temperature, and high soil moisture increase GLEAN FC breakdown in soil, while high soil pH, low soil temperature, and low soil moisture slow GLEAN FC breakdown.

Of these three factors, only soil pH remains relatively constant. Soil temperature, and to a greater extent, soil moisture, can vary significantly from year to year and from area to area. For this reason, soil temperatures and soil moisture should be monitored regularly when considering recropping.

* The minimum recropping interval represents the period of time from the last application to the anticipated date of the next planting.

SOIL PH LIMITATIONS

GLEAN FC should not be used on soils having a pH above 7.9, as extended soil residual activity could extend crop rotation intervals beyond normal, and under certain conditions, could injure wheat, barley, or oat. In addition, other crops planted in high-pH soils can be extremely sensitive to low concentrations of GLEAN FC.

Checking Soil pH

Before using GLEAN FC, determine the soil pH of the areas of intended use. To obtain a representative pH value for the test area, take several 0 to 4" samples from different areas of the field and analyze them separately. Consult local extension publications for additional information on recommended soil sampling procedures.

Cereals—Recropping Intervals

NE, KS, OK, TX

Soil pH*	Use Rate (oz/acre)	Minimum Recropping Interval (Months)		
		Wheat/Rye/Triticale	Oat	Barley
7.9 or lower	1/6 to 1/3	0	10	10
7.9 or lower	1/2	4	10	16

CA, NORTHERN ID, OR, UT, WA

Soil pH*	Use Rate (oz/acre)	Minimum Recropping Interval (Months)		
		Wheat/Rye/Triticale	Oat	Barley
6.5 or lower	1/6 to 1/3	0	10	10
6.6 to 7.5	1/6 to 1/3	0	10	16
7.6 to 7.9	1/6 to 1/3	4	16	24

* See Maximum Use Rates and Soil pH Limitations section of this label.

Noncereal Crops—Recropping Intervals—Non Irrigated Land

Location		Crop	Soil pH	Application Rate (oz/A)	Cumulative Precipitation (Inches)	Rotation Interval (Months)
State	County or Area					
Kansas	Central (E. of Hwy 183, W. of the Flint Hills)	Grain Sorghum	7.9 or lower	1/6 to 1/3	25	14
		Soybeans	7.5 or lower 7.6 to 7.9	1/6 to 1/3 1/6 to 1/3	25 46	14 26
	W. Central & Western (generally west of Hwy. 183 to the western edge of Grant, Kearny, Logan, Rawlins, Stevens, Thomas and Wichita counties.)	Grain Sorghum	7.5 or lower	1/6 to 1/3	21	14
			7.6 to 7.9	1/6 to 1/3	42	26
	Far Western (In the last tier of counties along the KS/CO border (Cheyenne, Greeley, Hamilton, Morton, Sherman, Stanton and Wallace))	Grain Sorghum	7.5 or lower	1/6 to 1/3	36	26
			7.6 to 7.9	1/6 to 1/3	60	48

10/9/14

Noncereal Crops—Recropping Intervals—Non Irrigated Land (continued)

Location		Crop	Soil pH	Application Rate (oz/A)	Cumulative Precipitation (Inches)	Rotation Interval (Months)	
State	County or Area						
Nebraska	S. Central (Franklin, Nuckolls, Thayer and Webster counties)	Grain Sorghum	7.9 or lower	1/6 to 1/3	25	14	
		Soybeans	7.5 or lower 7.6 to 7.9	1/6 to 1/3 1/6 to 1/3	25 46	14 26	
	Western (W. of Hwy 183 to WY border)	Field Corn, Millets, Grain Sorghum, Soybeans	7.5 or lower 7.6 to 7.9	1/6 to 1/3 1/6 to 1/3	40 60	24 36	
Oklahoma	Central & Eastern (E. of Hwy 183)	Grain Sorghum, Cotton, Mung Beans, Soybeans	7.9 or lower	1/6 to 1/2	25	14	
	Western (W. of Hwy 183 & E. of the Pan-handle)	Cotton, Grain Sorghum	7.9 or lower	1/6 to 1/3	25	14	
	Panhandle	Grain Sorghum	7.9 or lower	1/6 to 1/3	30	25	
Oregon	See Oregon 24(c) label for rotation intervals for recropping of annual and perennial ryegrasses, crimson and red clovers, snap beans, and corn.						
Idaho*	Northern counties (Benewah, Bonner, Boundary, Clearwater, Idaho, Koontenai, Letah, Lewis and Nez Perce)	Pea (dry)	6.5 or lower	1/6 to 1/3	35	24	
		Lentils	6.5 or lower	1/6 to 1/3	50	36	
Oregon*	Northeastern counties (Baker, Umatilla, Union and Wallowa)	Pea (dry)	6.5 or lower	1/6 to 1/3	35	24	
		Lentils	6.5 or lower	1/6 to 1/3	50	36	
Washington*	Eastern counties (Asotin, Columbia, Garfield, Pend Oreille, Spokane, Stevens, Walla Walla and Whitman)	Pea (dry)	6.5 or lower	1/6 to 1/3	35	24	
		Lentils	6.5 or lower	1/6 to 1/3	50	36	
Texas	Eastern counties *	Grain Sorghum, Cotton, Mung Beans, Soybeans	7.9 or lower	1/6 to 1/2	25	14	
		* The Eastern counties are: Archer, Bell, Bosque, Bowie, Camp, Cass, Clay, Colin, Cooke, Coryell, Dal'as, Delta, Denton, Ellis, Falls, Fannin, Franklin, Grayson, Hill, Hood, Hopkins, Hunt, Jack, Johnson, Kaufman, Lamar, Limestone, McLennan, Milam, Montague, Morris, Navarro, Palo Pinto, Parker, Rains, Red River, Robertson, Rockwall, Somervell, Tarrant, Titus, Upshur, Van Zandt, Wichita, Williamson, Wise, Wood and Young.					
		Central counties†	Cotton, Grain Sorghum	7.9 or lower 7.9 or lower	1/6 to 1/3 1/2	25 46	14 26
		† The Central counties are: Baylor, Callahan, Eastland, Foard, Hardeman, Haskell, Knox, Shackelford, Stephens, Throckmorton and Wilbarger.					
		Panhandle	Grain Sorghum	7.9 or lower	1/6 to 1/3	30	25
<p>* A field or LRBSM bioassay is required if soil pH is above 6.5. Note: Do not plant sorghum grown for hybrid seed production. Unless a crop rotation interval is specified, a field bioassay must be completed before rotating to any crop not listed. See Bioassay for information on conducting a field or LRBSM bioassay in target areas.</p>							

11 9 14
7

GRAZING

There are no grazing restrictions on GLEAN FC.

SPRAY EQUIPMENT

For specific application equipment, refer to the manufacturer's recommendations for additional information on GPA, pressure, speed, nozzle types and arrangements, nozzle heights above the target canopy, etc.

Be sure to calibrate air or ground equipment properly before application. Select a spray volume and delivery system that will ensure thorough coverage and a uniform spray pattern with minimum drift. Use higher spray volumes to obtain better coverage when crop canopy is dense. Avoid swath overlapping, and shut off spray booms while starting, turning, slowing, or stopping, to avoid injury to the crop.

Do not make applications using equipment and/or spray volumes or under weather conditions that might cause spray to drift onto nontarget sites. For additional information on spray drift, refer to the Spray Drift Management section of this label.

Continuous agitation is required to keep GLEAN FC in suspension.

SPRAYER CLEANUP

Spray equipment must be cleaned before GLEAN FC is sprayed. Follow the cleanup procedures specified on the labels of previously applied products. If no directions are provided, follow the six steps outlined in After Spraying GLEAN FC below.

At the End of the Day

When multiple loads of GLEAN FC herbicide are applied, it is recommended that at the end of each day of spraying, the interior of the tank be rinsed with fresh water and then partially filled, and the boom and hoses flushed. This will prevent the buildup of dried pesticide deposits which can accumulate in the application equipment.

After Spraying GLEAN FC and Before Spraying Crops Other Than Wheat, Barley, or Oat

To avoid subsequent injury to desirable crops, thoroughly clean all mixing and spray equipment immediately following applications of GLEAN FC as follows:

1. Drain tank; thoroughly rinse spray tanks, boom, and hoses with clean water. Loosen and physically remove any visible deposits.
2. Fill the tank with clean water and 1 gal of household ammonia* (contains 3% active) for every 100 gal of water. Flush the hoses, boom, and nozzles with the cleaning solution. Then add more water to completely fill the tank. Circulate the cleaning solution through the tank and hoses for at least 15 min. Flush the hoses, boom, and nozzles again with the cleaning solution, and then drain the tank.
3. Remove the nozzles and screens and clean separately in a bucket containing cleaning agent and water.
4. Repeat step 2.

5. Rinse the tank, boom, and hoses with clean water.
6. Dispose of the rinsate on site or at an approved waste disposal facility.
 - * Equivalent amounts of an alternate-strength ammonia solution or a DuPont-approved cleaner can be used in the cleanout procedure. Carefully read and follow the individual cleaner instructions. Consult your Agricultural dealer, applicator, or DuPont representative for a listing of approved cleaners.

Notes:

1. Caution: Do not use chlorine bleach with ammonia as dangerous gases will form. Do not clean equipment in an enclosed area.
2. Steam-cleaning aerial spray tanks is recommended prior to performing the above cleanout procedure to facilitate the removal of any caked deposits.
3. When GLEAN FC is tank mixed with other pesticides, all required cleanout procedures should be examined and the most rigorous procedure should be followed.
4. In addition to this cleanout procedure, all precleanout guidelines on subsequently applied products should be followed as per the individual labels.
5. Where routine spraying practices include shared equipment frequently being switched between applications of GLEAN FC and applications of other pesticides to GLEAN FC-sensitive crops during the same spray season, it is recommended that a sprayer be dedicated to GLEAN FC to further reduce the chance of crop injury.
6. Since the presence of tank-mix partners can interfere with the dispersion of GLEAN FC when multiple tank loads of the same mix are being prepared, preslurry GLEAN FC in a dedicated container of clean water prior to adding to the tank.

SPRAY DRIFT MANAGEMENT

The interaction of many equipment and weather-related factors determines the potential for spray drift. The applicator is responsible for considering all these factors when making application decisions.

AVOIDING SPRAY DRIFT IS THE RESPONSIBILITY OF THE APPLICATOR.

IMPORTANCE OF DROPLET SIZE

The most effective way to reduce drift potential is to apply large droplets (>150 - 200 microns). The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. The presence of sensitive species nearby, the environmental conditions, and pest pressure may affect how an applicator balances drift control and coverage. **APPLYING LARGER DROPLETS REDUCES DRIFT POTENTIAL, BUT WILL NOT PREVENT DRIFT IF APPLICATIONS ARE MADE IMPROPERLY OR UNDER UNFAVORABLE ENVIRONMENTAL CONDITIONS!** See Wind, Temperature and Humidity, and Temperature Inversions sections of this label.

Controlling Droplet Size - General Techniques

- **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 A HIGHER-CAPACITY NOZZLE INSTEAD OF INCREASING PRESSURE.**
- **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.

Controlling Droplet Size - Aircraft

- **Number of Nozzles** - Use the minimum number of nozzles with the highest flow rate that provide uniform coverage.
- **Nozzle Orientation** - Orienting nozzles so that the spray is emitted backwards, parallel to the airstream will produce larger droplets than other orientations.
- **Nozzle Type** - Solid stream nozzles (such as disc and core with swirl plate removed) oriented straight back produce larger droplets than other nozzle types.
- **Boom Length** - The boom length should not exceed 3/4 of the wing or rotor length - longer booms increase drift potential.
- **Application Height** - Application more than 10 ft above the canopy increases the potential for spray drift.

BOOM HEIGHT

Setting the boom at the lowest labeled height (if specified) which provides uniform coverage reduces the exposure of droplets to evaporation and wind. For ground equipment, the boom should remain level with the crop and have minimal bounce.

WIND

Drift potential increases at wind speeds of less than 3 mph (due to inversion potential) or more than 10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given wind speed. **AVOID GUSTY OR WINDLESS CONDITIONS.**

Note: Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

TEMPERATURE AND HUMIDITY

When making applications in hot and dry conditions, set up equipment to produce larger droplets to reduce effects of evaporation.

TEMPERATURE INVERSIONS

Drift potential is high during a temperature inversion. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain close to the ground and move laterally in a concentrated cloud. Temperature inversions are characterized by increasing temperature 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 concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

SHIELDED SPRAYERS

Shielding the boom or individual nozzles can reduce the effects of wind. However, it is the responsibility of the applicator to verify that the shields are preventing drift and not interfering with uniform deposition of the product.

AIR ASSISTED (AIR BLAST) FIELD CROP SPRAYERS

Air assisted field crop sprayers carry droplets to the target via a downward directed air stream. Some may reduce the potential for drift, but if a sprayer is unsuitable for the application and/or set up improperly, high drift potential can result. It is the responsibility of the applicator to determine that a sprayer is suitable for the intended application, is configured properly, and that drift is not occurring.

Note: Air assisted field sprayers can affect product performance by affecting spray coverage and canopy penetration. Consult the application equipment section of this label to determine if use of an air assisted sprayer is recommended.

BIOASSAY

A bioassay (field or LRB™) must be completed before rotating to crops not listed on this label or when rotating at intervals shorter than those listed in the Crop Rotation section.

Field Bioassay

A field bioassay is necessary if crops other than wheat, barley, oat, or those listed on this label are to be planted on land previously treated with GLEAN FC. To conduct a field bioassay, grow test strips of the crop or crops you plan to grow the following year in fields previously treated with GLEAN FC. Crop response to the bioassay will indicate whether or not to rotate to the crop(s) grown in the test strips.

If a field bioassay is planned, check with your local DuPont representative or call toll-free 1-800- 574-4769 for a fact sheet detailing field bioassay procedure.

DuPont LRB™ Bioassay Service

The DuPont LRB™ Bioassay Service is available in Idaho, Oregon, and Washington through certain dealers and/or consultants. This service uses soil samples taken by DuPont-certified individuals for laboratory bioassay analysis. LRB™ results serve as a crop rotation recommendation. Check with your local DuPont representative or call toll free 1-800-782-3557 for information regarding the LRB™ Bioassay Service.

PRECAUTIONS

Varieties of wheat, oat, and barley differ in their tolerance to herbicides. When using GLEAN FC for the first time on a particular variety, limit initial use to one bottle. If no symptoms of crop injury occur 14 days after treatment, the balance of acreage can be treated.

Do not apply GLEAN FC to wheat, oat, or barley that is stressed by severe weather conditions, drought, low fertility, water-saturated soil, disease or insect damage, as crop injury may result. Severe winter stress, drought, disease, or insect damage following application may also result in crop injury.

Do not apply GLEAN FC during boot or early heading as crop injury may result.

Do not apply to wheat, barley, or oat undersown with legumes and grasses, as injury to the forages will result.

Do not apply to frozen ground where surface runoff may result.

Do not apply to snow-covered ground.

Do not apply to irrigated land where tailwater will be used to irrigate other cropland.

The combined effects of the preemergence use of GLEAN FC plus preemergence wild oat herbicides may cause crop injury to spring wheat when crop stress (soil crusting, planting too deep, prolonged cold, wet weather, or drought) causes poor seedling vigor.

Wherever land has been or is to be treated with "Assert" or Amber⁷ herbicide and GLEAN FC, plant only wheat or barley until a bioassay (see Bioassay section of label) demonstrates that other crops can be successfully grown. On land that is frequently rotated to crops other than wheat or barley, do not use GLEAN FC wherever "Assert" has been or will be used. The additive effect of soil residues from these treatments has not been determined, and crop rotation guidelines and minimum rotation intervals are not known; injury to rotational crops may result.

In the Pacific Northwest, to prevent crop injury due to cold weather, avoid making preemergence applications or early postemergence applications (2-4 leaf stage) to wheat or barley during late fall or winter when cold weather conditions are unpredictable and can be severe. The combined effects of herbicide stress plus cold weather stress can result in greater crop injury than either stress factor alone.

Preemergence weed control or suppression may be unsatisfactory on soils containing 5% or more organic matter.

Fall applications on coarse textured soils (especially those having a pH of greater than 7.0) may not provide adequate control or suppression of spring germinating weeds.

To reduce the potential for movement of treated soil due to wind erosion, do not apply to powdery dry or light sandy soils until they have been stabilized by rainfall, trashy mulch, reduced tillage or other cultural practices. Injury to immediately adjacent crops may result when treated soil is blown onto land used to produce crops other than cereal grains.

For ground applications applied postemergence to weeds when dry, dusty field conditions exist, control of weeds in wheel track areas may be reduced. The addition of 2,4-D or MCPA should improve weed control under these conditions.

Preemergence applications of 2,4-D or herbicides containing 2,4-D made within two weeks of planting spring cereals may cause crop injury when used in conjunction with preemergence or early postemergence applications of GLEAN FC.

Tank mix applications of GLEAN FC plus "Assert" may cause temporary discoloration/stunting or injury to the crop when heavy rainfall occurs shortly after the application.

In far-western Kansas (last tier of counties along the Colorado/Kansas border), Western Nebraska, Eastern New Mexico, and the Oklahoma and Texas panhandles, take the following precautions:

- Do not use a tank mix containing ALLY Herbicide within 22 months of GLEAN FC application.
- Do not use GLEAN FC in continuous cereals or cereal/fallow/cereal rotations.
- GLEAN FC in a tank mix at 1/6 to 1/3 oz per acre may be used only as a fallow treatment in corn or sorghum stubble in wheat/sorghum/fallow, or wheat/corn/fallow rotations where other residual broadleaf herbicides having different modes of action are used.

In California, Northern Idaho, Oregon, and Washington, take the following precautions:

- Do not make an early season treatment where a tank mix cannot be made.
- Do not apply GLEAN FC during fallow.

STORAGE AND DISPOSAL

STORAGE: Store product in original container only, away from other pesticides, fertilizer, food or feed.

PRODUCT DISPOSAL: Do not contaminate water, food or feed by storage or disposal. Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

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

NOTICE TO BUYER: Purchase of this material does not confer any rights under patents of countries outside of the United States. Use of this quantity of purchased GLEAN FC is permitted under claim 24 of U.S. Patent 5,084,082.

14 9 14
7

NOTICE OF WARRANTY

Du Pont warrants that this product conforms to the chemical description on the label thereof and is reasonably fit for purposes stated on such label only when used in accordance with directions under normal use conditions. It is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness, or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or the manner of use or application, all of which are beyond the control of Du Pont. In no case shall Du Pont be liable for consequential, special or indirect damages resulting from the use or handling of this product. All such risks shall be assumed by the buyer. DU PONT MAKES NO WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS STATED ABOVE.

Registered trademark of:

- [1] Miles Inc.
- [2] Delavan Corporation.
- [3] Rhone-Poulenc Ag Company.
- [4] Sandoz Crop Protection Corporation.
- [5] DowElanco.
- [6] American Cyanamid Company.
- [7] Ciba-Geigy Corporation.

D - 170-1 101294

11