

241-418

3-26-2003

1/31



U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Pesticide Programs
Registration Division (H7505C)
401 "M" St., S.W.
Washington, D.C. 20460

EPA Reg. Number:

241-418

Date of Issuance:

MAR 26 2003

NOTICE OF PESTICIDE:

Registration
 Reregistration

(under FIFRA, as amended)

Term of Issuance:

Conditional - Reg.
Expires May 31, 2008

Name of Pesticide Product:

PROWL H2O Herbicide

Name and Address of Registrant (include ZIP Code):

BASF Corporation
26 Davis Drive
Research Triangle Park, NC 27709

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

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

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

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

1. Submit by May 31, 2008, except where otherwise stated, the following studies conducted in accordance with the Good Laboratory Practice Standards, 40 CFR Part 160, and appropriate test guidelines as referenced in EPA's Data Requirements for Registration Regulations, 40 CFR Part 158:

a. to support the rice use and remove the crayfish restriction, a crayfish metabolism study, and, if appropriate, a crayfish feeding study, and a proposed tolerance in crayfish.

b. field residue data for cotton gin trash so appropriate tolerances can be established. In addition to the three different sites in this submission, nine additional sites will be needed. The sites are (number of sites in parenthesis) in Region 2(1), 4(1 additional residue trial), 6(1), 8(3 additional residue trials), and 10(3). A proposed tolerance should also be submitted. Based on the studies submitted, a tolerance of 3 ppm in cotton gin byproducts is recommended until the above studies are submitted and reviewed. The tolerance for cotton gin byproducts may be adjusted, as necessary, after submission and review of studies.

c. a rice processing study, and proposed tolerances on rice processed commodities, if necessary, by May 31, 2006. Also the Pendimethalin RED (Issued June, 1997), recommended that tolerances be established for rice straw at 0.1 ppm. The Registrant should propose the tolerance on rice straw if still outstanding at the time of the submission of the rice processing study.

(Continued On Next Page)

Signature of Approving Official:

Date:

MAR 26 2003

2/31

page 2

EPA Reg. No.241-418

2. In the storage stability study submitted under MRID# 453647-08, the temperature of the stored samples was not provided. The results of the study are acceptable pending submission of an appropriately amended study containing the study storage freezer temperature.

3. Submit a copy of both Method M3396 and the confirmatory analytical methods without the 'Confidential' stamp.

4. Make the following label changes:

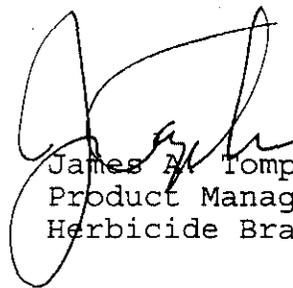
Revise the EPA Registration Number to read, "EPA Reg. No. 241-418" before you release the product for shipment. Also add the EPA establishment number.

5. Submit two copies of the revised final printed labeling before you release the product for shipment.

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

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

Sincerely,



James A. Tompkins
Product Manager 25
Herbicide Branch, RD (7505C)

Attachment: Review of EPA Reg. No. 241-418 (P. Errico, 3/19/2003)

3/31

PROWL® H₂O

Herbicide

FOR USE IN SELECTED CROPS

ACTIVE INGREDIENT:	
pendimethalin (N-(1-ethylpropyl)-3,4-dimethyl-2,6-dinitrobenzenamine).....	38.7%
INERT INGREDIENTS	61.3%
TOTAL	100.0%

(1 gallon contains 3.8 pounds of pendimethalin formulated as an aqueous capsule suspension)

EPA Reg. No. 241-URI

EPA Est. No.

KEEP OUT OF REACH OF CHILDREN

CAUTION!/PRECAUCION!

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

In case of an emergency endangering life or property involving this product, day or night, call 800-832-HELP.

A C C E P T E D

MAR 26 2003

Under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, for the pesticide registered under EPA Reg. No. 241-418

BASF Corporation
26 Davis Drive
Research Triangle Park, NC 27709

BASF

Net Contents:

®Registered Trademark of BASF

4/31

PROWL® H₂O herbicide

FOR USE IN CORN (FIELD, POP, SEED, SWEET), COTTON, EDIBLE BEANS, FORAGE LEGUMES, GARLIC, GRAIN SORGHUM, LENTILS and PEAS, NONBEARING FRUIT AND NUT CROPS, NONBEARING VINEYARDS, ONIONS and SHALLOTS (Dry Bulb), PEANUTS, POTATOES, RICE, SOYBEANS, SUGARCANE, SUNFLOWERS, AND TOBACCO FOR CONTROL OF MOST ANNUAL GRASS WEEDS AND CERTAIN BROADLEAF WEEDS

FIRST AID

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

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

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

Have the product container or label with you when calling a poison control center or doctor or going for treatment.

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION!

Causes moderate eye irritation. Harmful if swallowed or absorbed through the skin. Avoid contact with skin, eyes, or clothing.

Personal Protective Equipment (PPE):

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

Applicators and other handlers must wear:

- * Long-sleeved shirt and long pants
- * Chemical-resistant gloves made of any waterproof material such as nitrile, butyl, neoprene, and/or barrier laminate
- * 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.

Engineering Controls:

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection 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. 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.

ENVIRONMENTAL HAZARDS

This product is toxic to fish. **DO NOT** apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Drift and runoff from treated areas may be hazardous to aquatic organisms in adjacent aquatic sites. **DO NOT** contaminate water when disposing of equipment washwaters.

DIRECTIONS FOR USE

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

Observe all cautions and limitations in this label and the labels of products used in combination with PROWL H₂O. The use of PROWL H₂O not consistent with this label can result in injury to crops, animals, or persons. Keep containers closed to avoid spills and contamination.

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 protection.

DO NOT use in manufacturing products for application to turf and ornamentals.

AGRICULTURAL USE REQUIREMENTS

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

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 24 hours.

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

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

- * Coveralls
- * Chemical-resistant gloves made of any waterproof material such as nitrile, butyl, neoprene, and/or barrier laminate
- * Shoes plus socks

6/31

STORAGE AND DISPOSAL

DO NOT contaminate water, food, or feed by storage or disposal.

STORAGE:

DO NOT STORE BELOW 32°F.

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 directions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

CONTAINER DISPOSAL:

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

For Bulk and Mini-Bulk: Return empty container to point of purchase for repackaging or recycling.

DISCLAIMER

The label instructions for the use of this product reflect the opinion of experts based on research and field use. The directions are believed to be reliable and must be followed carefully. However, it is impossible to eliminate all risks inherently associated with use of this product. Crop injury, ineffectiveness, or other unintended consequences may result because of such factors as weather conditions (e.g., low or high temperatures, wet or dry soils), poor agronomic conditions (e.g., inadequate fertility, low or high pH, poor nutrient uptake), presence of other materials, herbicide resistant weed populations, or the use of, or application of the product contrary to label instructions, all of which are beyond the control of BASF Corporation. All such risks shall be assumed by the user.

BASF shall not be responsible for losses or damages resulting from use of this product in any manner not set forth on this label. User assumes all risks associated with the use of this product in any manner not specifically set forth on this label.

BASF warrants only that the material contained herein conforms to the chemical description on the label and is reasonably fit for the use therein described when used in accordance with the directions for use, subject to the risks referred to above. BASF DOES NOT MAKE OR AUTHORIZE ANY AGENT OR REPRESENTATIVE TO MAKE ANY OTHER WARRANTIES, EXPRESS OR IMPLIED AND EXPRESSLY EXCLUDES AND DISCLAIMS ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. BUYER'S EXCLUSIVE REMEDY AND BASF'S EXCLUSIVE LIABILITY, WHETHER IN CONTRACT, TORT, NEGLIGENCE, STRICT LIABILITY OR OTHERWISE, SHALL BE LIMITED TO REPAYMENT OF THE PURCHASE PRICE OF PROWL H₂O. In no case shall BASF or the seller be liable for consequential, special, or indirect damages resulting from the use or handling of this product.

Uses with Other Products (Tank mixes)

If this product is used in combination with any other product except as specifically recommended in writing by BASF, then BASF shall have no liability for any loss, damage, or injury arising out of its use in any such combination not so specifically recommended. If used in combination recommended by BASF, the liability of BASF shall in no manner extend to any damage, loss, or injury not directly caused by the inclusion of the BASF product in such combination use, and in any event shall be limited to return of the amount of the purchase price of the product.

I. General Information

PROWL H₂O herbicide is a selective herbicide for controlling annual grass and broadleaf weeds listed in **Table 1**, as they germinate. **PROWL H₂O will not control established weeds.** **PROWL H₂O** herbicide is labeled for use in corn (field, pop, seed, sweet), cotton, edible beans, forage legumes, garlic, grain sorghum, lentils and peas, nonbearing fruit and nut crops, nonbearing vineyards, onions and shallots (dry bulb), peanuts, potatoes, rice, soybeans, sugarcane, sunflowers, and tobacco.

Table 1. Weeds Controlled (See crop sections for additional weeds controlled)

Grasses Controlled		Broadleaves Controlled	
Barnyardgrass	Johnsongrass (seedling)	Amaranth, Palmer	Pigweed species
Crabgrass	Panicum, fall	Bugloss, small	Purslane
Crowfootgrass	Panicum, Texas	Carpetweed	Smartweed, Pennsylvania*
Foxtail, giant	Sandbur, field	Pusley, Florida	Spurge, annual
Foxtail, green	Signalgrass*	Kochia	Velvetleaf*
Foxtail, yellow	Witchgrass	Lambsquarters, common	Waterhemp species
Goosegrass*		Lambsquarters, slimleaf	

*Suppression Only

Mode of Action

PROWL H₂O herbicide is a meristematic inhibitor that interferes with the plant's cellular division or mitosis. This and/or other products with the meristematic inhibiting mode of action may not effectively control naturally occurring biotypes of some of the weeds listed on this label. A weed biotype is a naturally occurring plant within a given species that has a slightly different, but distinct, genetic makeup from other plants. Other herbicides with the meristematic inhibiting mode of action include other dinitroaniline herbicides such as trifluralin. If naturally occurring meristematic inhibiting resistant biotypes are present in a field, **PROWL H₂O** and/or any other meristematic inhibiting mode of action herbicide, should be tank mixed or applied sequentially with an appropriate registered herbicide having a different mode of action to ensure control.

Cleaning Spray Equipment

Clean application equipment thoroughly by using a strong detergent or commercial spray cleaner according to the manufacturer's directions and then triple rinsing the equipment before and after applying this product.

II. Application Instructions

PROWL H₂O will provide most effective weed control when applied by ground or aerial equipment, and is subsequently incorporated into soil by rainfall, sprinkler irrigation, or mechanical tillage prior to weed seedling emergence from soil. **PROWL H₂O** can also be applied through chemigation. **PROWL H₂O** is recommended for preplant incorporated, preplant surface, preemergence, early postemergence or lay-by treatment. See section **VI. Crop-Specific Information** for specific application directions by crop. **PROWL H₂O** may be applied using either water or sprayable fluid fertilizer as the spray carrier. Additionally, **PROWL H₂O** may be impregnated on dry bulk fertilizer. Sprayable fluid fertilizer as a carrier is not recommended for use after crop emergence unless the typical fertilizer burn symptoms on the crop are acceptable.

8/31

Application Rate

Recommended use rates for **PROWL H₂O** when used alone, in tank mix, or sequential applications are given in section **VI. Crop-Specific Information**. Use rates of this product vary by soil texture and organic matter. See **Table 2** for soil texture groupings used in this label.

Table 2. Soil Texture Groups.

COARSE	MEDIUM	FINE
sands loamy sands sandy loams	sandy clay loams* sandy clays loams silt loams silts	silty clay loams* silty clays clay loams clays

*Sometimes considered transitional soils and may be classified as either medium or fine textured soils.

PROWL H₂O is not recommended for use on peat or muck soils, unless otherwise specified in section **VI. Crop-Specific Information**.

Application Timing (See crop sections for additional directions)

Preplant Surface Applications: For use in minimum tillage or no-tillage production systems, apply **PROWL H₂O** alone or in tank mixes up to 45 days before planting. When making early preplant surface applications (15-45 days prior to planting), **PROWL H₂O** should be tank mixed or followed by a postemergence herbicide application. Rainfall or sprinkler irrigation after application is required to move this product into the upper soil surface where weed seeds germinate.

Preplant Incorporated Applications: Apply **PROWL H₂O** and incorporate into the upper (1-2") soil surface up to 60 days before planting. Use an implement capable of giving uniform incorporation; two-pass incorporation usually results in a more consistent result.

Preemergence Surface Applications: Broadcast treatment uniformly to the soil surface at planting and up to 2 days after planting. Rainfall, sprinkler irrigation, or shallow mechanical incorporation after application is required to move this product into the upper soil surface where weed seeds germinate. If adequate rainfall or irrigation does not occur and weed seedling emergence begins, a shallow cultivation or rotary hoeing will improve performance.

Early Postemergence Applications: **PROWL H₂O** must be applied prior to weed seedling emergence or in a tank mix with products that control the emerged weeds. Refer to section **VI. Crop-Specific Information** for specific postemergence application recommendations by crop.

Postemergence Incorporated Applications (CULTI-SPRAY™): Prior to application, crop must be cultivated in such a manner as to throw at least one inch of soil over the base of the crop plants. This will prevent direct contact of **PROWL H₂O** and the zone of brace root formation. **PROWL H₂O** must be applied broadcast with a ground sprayer when crop is at least 4 inches tall up to lay-by. Use drop nozzles if crop foliage will prevent uniform coverage of the soil surface within the rows. Thoroughly and uniformly incorporate **PROWL H₂O** treatments into the soil (1) with a sweep-type or rolling cultivator set to provide thorough incorporation in the top 1 inch of soil, or (2) with adequate overhead irrigation water or rainfall. See section **VI. Crop-Specific Information** (Corn and Grain Sorghum) for more details on CULTI-SPRAY application.

Lay-by Application: Apply **PROWL H₂O** directly to the soil between rows as a directed spray following the last normal cultivation (lay-by). See section **VI. Crop-Specific Information** for more details on lay-by application.

Split Applications: PROWL H₂O may applied preplant incorporated up to 60 days prior to planting and followed by a preemergence application at planting or up to 2 days after planting. The total amount of PROWL H₂O applied per acre per season cannot exceed the highest labeled rate for any given soil type.

Fall Applications: PROWL H₂O may be used in fall application programs in certain crops. See section VI. Crop-Specific Information for details on fall application timing.

Spraying Instructions

Ground Applications (Broadcast)

Uniformly apply in 10 or more gallons of water or 20 or more gallons of liquid fertilizer. Use sprayers with appropriate nozzles that provide uniform spray distribution and minimize drift. Keep the bypass line on or near the bottom of the tank to minimize foaming. Nozzle and in-line screens must be no finer than 50 mesh. Application of PROWL H₂O during periods of gusty winds may result in uneven applications. DO NOT apply PROWL H₂O postemergence in liquid fertilizers.

If liquid fertilizer/herbicide(s) mixture separates in the spray tank, clogged equipment and uneven application can result. Always predetermine the compatibility of PROWL H₂O alone or with other herbicides base on the following compatibility test.

1. Add 1 pint of fertilizer to a quart jar.
2. Add 1 to 4 teaspoon(s) of the Dry Flowable (DF), Wettable Powder (WP), Aqueous Solution (AS), Flowable (F) or Liquid (L) formulation (depending on mixing ratio required) to the liquid fertilizer. The number of teaspoons of the formulation to add can be determined by the following formula:

$$\frac{\text{lbs or pts of product/acre}}{\text{gallons of fertilizer/acre}} \times 11.4 = \frac{\text{number of teaspoons of herbicide}}{\text{to add to 1 pint of fertilizer}}$$

3. Close the jar and agitate until the herbicide(s) are evenly dispersed in the liquid fertilizer. If the materials do not disperse well, it may be necessary to slurry the chemicals in water before adding to the fertilizer.
4. After dispersing the materials, add appropriate number of teaspoons of PROWL H₂O to the jar and shake well. Add water soluble concentrate herbicides to the mixture last and agitate. Let the mixture stand for 30 minutes and then observe the results. Look for signs of separation; an oily layer or globules, sludge, flakes or other precipitates.
5. Evaluate compatibility.
 - (a) If the herbicide(s) and liquid fertilizer mixture does not separate, use this mixture in your spray tank.
 - (b) If the mixture separates, but mixes readily with shaking, the mixture can be used provided that good agitation is maintained in the spray tank.
 - (c) If separation of the mixture occurs and agitation does not correct this problem, a compatibility agent is needed.
6. If the need for a compatibly agent is demonstrated, the following procedure is recommended: Using a clean quart jar repeat step one above and add 1/2 teaspoon of the compatibility agent to the liquid fertilizer. Mix well and repeat steps 2, 3 and 4. If separation or precipitation occurs with the compatibility agent, DO NOT use PROWL H₂O with that specific liquid fertilizer.

Ground Applications (Band)

Uniformly apply the broadcast equivalent rate and volume per acre. To determine these:

$$\frac{\text{Band width in inches}}{\text{Row width in inches}} \times \text{Broadcast Rate per Acre} = \text{Band Rate per Acre}$$

$$\frac{\text{Band width in inches}}{\text{Row width in inches}} \times \text{Broadcast Volume per Acre} = \text{Band volume per Acre}$$

10/31

Ground Applications (Dry Bulk Fertilizer)

Apply **PROWL H₂O**/dry bulk fertilizer mixtures only with ground equipment. DO NOT impregnate **PROWL H₂O** onto coated ammonium nitrate or limestone because these materials will not absorb the herbicide. Dry fertilizer blends containing mixtures of ammonium nitrate or limestone may be impregnated with **PROWL H₂O**. A minimum of 200 pounds of impregnated dry bulk fertilizer, excluding the weight of ammonium nitrate or limestone, must be applied per acre.

Use the following formula to determine the amount of **PROWL H₂O** to be impregnated on a ton of dry bulk fertilizer based on the rate of fertilizer to be applied per acre.

$$\frac{2000}{\text{Pounds of Dry Fertilizer per Acre}} \times \text{PROWL H}_2\text{O (Recommended Rate per Acre)} = \text{PROWL H}_2\text{O per Ton of Fertilizer}$$

To impregnate **PROWL H₂O** on bulk fertilizer, use a closed rotary-drum mixer or other commonly used dry bulk fertilizer blender equipped with suitable spray equipment. Spray nozzles must be placed to provide uniform coverage of **PROWL H₂O** onto the fertilizer during mixing.

Apply the **PROWL H₂O**/dry bulk fertilizer mixture with an accurately calibrated dry fertilizer spreader. The **PROWL H₂O**/dry bulk fertilizer mixture must be spread uniformly on the soil surface.

Aerial Applications

Uniformly apply in 5 or more gallons of water per acre. Adequate spray volume must be used to provide accurate and uniform distribution of spray particles over the treated area and to avoid drift of spray particles to nontarget areas.

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. It is recommended that a flagman or an automatic mechanical flagging unit on the aircraft be used to avoid overlapping and possible crop injury. The applicator must follow the most restrictive use cautions to avoid drift hazards, including those found in this labeling as well as applicable state and local regulations and ordinances.

Chemigation

PROWL H₂O may be applied through sprinkler irrigation systems in cotton, field corn, garlic, dry bulb shallots, direct-seeded and transplanted dry bulb onions, grain sorghum, nonbearing fruit and nut crops, nonbearing vineyards, peanuts, potatoes, soybeans and sunflowers.

Apply this product ONLY through a sprinkler system of the following type; center pivot, lateral move, end tow, side (wheel) roll, traveler, big gun, solid set, or hand move. DO NOT apply this product through any other type of irrigation system. The system must be properly calibrated (with water only) to ensure that the amount of **PROWL H₂O** applied corresponds to the recommended rate. Apply **PROWL H₂O** in 1/2 to 3/4 inches of water during the first sprinkler set (use at least 1 inch of water in the states of Texas, New Mexico and Oklahoma). Maintain agitation in the injection nurse tank to keep a uniform herbicide suspension during application. When application is complete, flush the system with water.

Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from non-uniform distribution of treated water. If you have any questions about calibration, you should contact State Extension Service specialists, equipment manufacturers, or other experts.

Special Precautions for Chemigation

1. Do not connect an irrigation system used for pesticide application to a public water system unless the pesticide label prescribed safety devices for public water systems are in place.

2. A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.
3. The pesticide injection pipeline must contain a functional, automatic, quick-closing, check valve to prevent the flow of fluid back toward the injection pump. It must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
4. The sprinkler-chemigation system must contain a functional check valve, vacuum relief valve, and low-pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow. In addition, systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
5. The sprinkler-chemigation system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops, or in cases where there is no water pump, when the water pressure decreases to the point where pesticide distribution is adversely affected.
6. The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.

Chemigation Systems Connected to Public Water Systems

1. Chemigation systems connected to public water systems must contain a functional, reduced-pressure zone, backflow preventer (RPZ) or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ, the water from the public water system should be discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the outlet end of the fill pipe and the top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe.
2. All chemigation systems connected to public water systems must also follow restrictions listed in the preceding section titled "Chemigation".

III. Additives

Spray adjuvants have little or no influence on performance of **PROWL H₂O** when applications are made prior to weed emergence. However, several tank mixes with **PROWL H₂O** require adjuvants to improve burndown of emerged weeds. Therefore, surfactants, liquid fertilizer (28%, 30%, or 32% UAN or ammonium sulfate), or crop oil concentrate may be used with **PROWL H₂O** tank mixes applied preplant, preemergence, or early postemergence to the crop. Follow the adjuvant recommendations on the tank mix partner's label.

IV. General Tank Mixing Information

PROWL H₂O may be applied in a tank mix or a sequential application with other herbicides registered for use in a given crop. Refer to the companion label for weeds controlled in addition to **PROWL H₂O** alone.

12/31

When using tank mixtures or sequential applications with **PROWL H₂O**, always read the companion product label(s) to determine the specific use rates by soil types, weed species, and weed or crop growth stage. In addition, follow all precautions and restrictions including state and local use restrictions that may apply to specific products. Always follow the most restrictive label.

Mixing Instructions

1. Fill tank 1/2 to 3/4 full with clean water or liquid fertilizer and agitate. Prior to mixing **PROWL H₂O** or **PROWL H₂O** tank mixtures in liquid fertilizer, refer to appropriate label sections for recommended uses in liquid fertilizer, application instructions, and compatibility determinations.

2. **PROWL H₂O Alone**

When using **PROWL H₂O** alone, add **PROWL H₂O** to the partially filled tank while agitating and then fill the remainder of the tank with water or liquid fertilizer.

3. **PROWL H₂O Tank Mixes**

Add the tank mixture ingredients in the order listed below prior to adding **PROWL H₂O**.

(a) **Wettable Powder (WP) formulations** - make a slurry of the WP in water (1:2 ratio). Add the slurry slowly into the partially filled tank while agitating.

(b) **Dry Flowable (DF)/Water Dispersible Granule (WDG) formulations** - add the granules to the partially filled tank while agitating. Make a slurry of the granules in water before adding to liquid fertilizer.

(c) **Flowable (F) formulations** - add the F formulation to the partially filled tank while agitating.

(d) **Add Prowl H₂O to the partially filled tank while agitating.**

(e) **Water Soluble Concentrate (WSC) formulations** - add the WSC formulation to the partially filled tank while agitating.

(f) **Emulsifiable Concentrate (EC) formulations** - add the EC formulation to the partially filled tank while agitating.

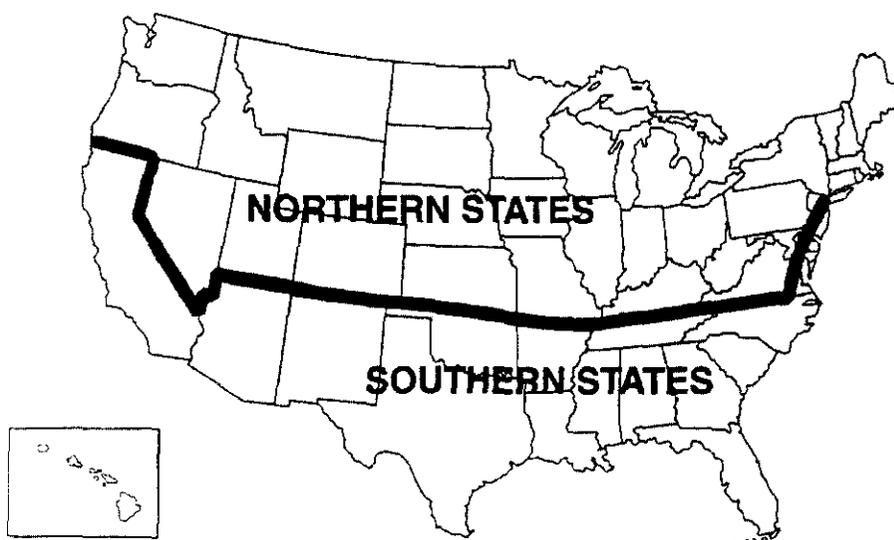
Fill the remainder of the tank with water or liquid fertilizer while agitating.

4. Maintain continuous agitation while adding herbicides and until spraying is completed. If the spray mixture is allowed to settle for any period of time, thorough agitation is essential to resuspend the mixture before spraying is resumed.

V. Restrictions and Limitations

- DO NOT exceed the maximum labeled rate for any soil type.
- **PROWL H₂O** will not control established weeds. Destroy emerged weeds prior to application. **PROWL H₂O** is most effective in controlling weeds when adequate rainfall or overhead irrigation is received after application.
- When using tank mixtures with **PROWL H₂O**, always read the companion product label(s) to determine the specific use rates by soil types, weed species, and weed or crop growth stage. In addition, follow all precautions and restrictions including state and local use restrictions that may apply to specific products. Always follow the most restrictive label.

- In the event of a crop loss due to weather conditions, any crop registered for a preplant incorporated application of **PROWL H₂O** can be replanted without adverse effects the same year (see section **VI. Crop-Specific Information** for exceptions). If replanting is necessary, **DO NOT** work the soil deeper than the treated zone.
- **DO NOT** apply **PROWL H₂O** to peat or muck soils unless specified in section **VI. Crop-Specific Information**.
- Refer to section **VI. Crop-Specific Information** for crop-specific preharvest intervals and feeding and grazing restrictions.
- Crop rotation restriction:
 - Land treated with **PROWL H₂O** may be planted to other crops the following year. See restrictions below for sugar beets, red beets, and spinach.
 - **Winter Wheat and Winter Barley** may be planted in the fall 4 months after a **PROWL H₂O** application in any registered crop. Winter wheat and winter barley may be planted in the fall 3 months after a **PROWL H₂O** CULTI-SPRAY application in irrigated field corn or grain sorghum. The treated crop must be grown to maturity and harvested before planting wheat or barley. In areas where irrigation is necessary to produce the crop treated with **PROWL H₂O**, **DO NOT** plant winter wheat or winter barley as follow crops if crop failure/destruction occurs and land is fallowed during the summer as crop injury may result. **DO NOT** plant winter wheat or winter barley as follow crops in treated land until the next growing season if **PROWL H₂O** is applied at 4.2 pints or higher. **DO NOT** feed forage or graze livestock for 75 days after planting wheat or barley in treated land.
 - **Sugarbeets, Red Beets, Spinach;** To avoid crop injury, do not plant sugarbeets, red beets, or spinach for 12 months following a **PROWL H₂O** application. To insure thorough mixing of soil prior to planting these crops, land should be plowed using a moldboard plow to a depth of 12 inches.
 - When **PROWL H₂O** is used in tank mix or sequential combinations, refer to label of other herbicides for additional follow crop restrictions.
 - Use of **PROWL H₂O** herbicide in accordance with label directions is expected to result in normal growth of rotational crops in most situations; however, various environmental and agronomic factors make it impossible to eliminate all risks associated with the use of this product.
- Use area



14/31

VI. Crop-Specific Information

CORN
(Field, Pop, Seed, Sweet)

PROWL H₂O may be applied in conventional, minimum, or no-till as a preemergence, postemergence, or postemergence incorporated (CULTI-SPRAY™) application in field corn.

PROWL H₂O may be applied in conventional tillage as a preemergence or postemergence application in sweet corn, seed corn, or popcorn.

In conventional tillage systems, plant into a seedbed that is firm and free of clods and trash. Use only where adequate tillage is practiced to provide good soil coverage of the corn seed. Plant corn at least 1½ inches deep and completely cover with soil.

In no-till systems, utilize a no-till planter that is capable of planting through crop residue. The use of no-till planters under conditions that do not allow good soil coverage of the corn seed can result in reduced crop stand or injury if **PROWL H₂O** contacts the germinating corn seed. Check equipment to ensure good seed coverage. **Plant corn at least 1½ inches deep and completely cover with soil.**

PROWL H₂O or **PROWL H₂O** tank mix combination treatments are most effective in controlling weeds when adequate rainfall or overhead irrigation is received after application. If cultivation is necessary because of soil crusting or weed germination, use shallow tillage and make certain corn seeds are below the tilled area.

Additional Weeds Controlled: In addition to the weeds listed in Table 1, **PROWL H₂O** will control the following weeds in corn; woolly cupgrass, wild proso millet (CULTI-SPRAY application), shattercane (CULTI-SPRAY application), Pennsylvania smartweed, and velvetleaf.

Use Methods and Timings

Preemergence – Apply after planting, but before weeds and crop emerge

Postemergence – Apply postemergence until field corn is 30 inches tall (20-24 inches tall for pop, seed and sweet corn) or in the V8 growth stage, whichever is more restrictive. If the corn canopy prevents applications from reaching the soil, use drop nozzles and apply as a directed spray.

CULTI-SPRAY - Apply **PROWL H₂O** alone or **PROWL H₂O** plus atrazine when field corn is at least 4 inches tall until last cultivation (lay-by). **PROWL H₂O** plus atrazine must be applied before the field corn reaches 12 inches in height. **DO NOT exceed 1.2 lb a.i. per acre of atrazine or less as specified on the atrazine label.** Under situations of low rainfall or soil moisture, when deep germinating weeds such as shattercane or field sandbur are anticipated, mechanical incorporation will provide best results. If cultivation is needed after application and incorporation of **PROWL H₂O**, the depth of cut should be no deeper than the depth of cut used to incorporate.

15/31

Use Rates

Preemergence or Postemergence Applications

Rate per Acre

Soil Texture	Organic Matter		
	<1.5 %	1.5 - 3.0 %	>3.0 %
Coarse	2.0 pts	3.0 pts	3.0 pts
Medium	3.0 pts	3.0 pts	4.0 pts
Fine	3.0 pts	4.0 pts	4.0 pts

CULTI-SPRAY Applications - Field Corn ONLY

Rate Per Acre

Soil Texture	Southern States ¹	Northern States ¹
Coarse	1.5 pts	2.0 pts
Medium	2.0 pts	3.0 pts
Fine	3.0 pts	3.0 pts

¹ See section V. **Restrictions and Limitations** for Map of Specific States.

Restrictions and Limitations

- DO NOT apply PROWL H₂O in reduced, minimum or no-till sweet corn, seed corn or popcorn.
- DO NOT apply **PROWL H₂O** in no-till in California.
- DO NOT apply preplant incorporated.
- DO NOT apply postemergence in liquid fertilizer.
- Livestock can graze or be fed forage from treated corn after 21 days following application.
- DO NOT exceed one application per crop season at the highest rate per acre for any given soil type and application method.

COTTON

PROWL H₂O may be applied in conventional, minimum, stale seedbed, or no-till as a preplant surface, preplant incorporated, preemergence, or lay-by application in cotton.

Preplant surface, preemergence, and lay-by treatments are most effective in controlling weeds when adequate rainfall or overhead irrigation is received after application. A shallow cultivation is recommended if soil crusting or soil compaction occurs. If weeds begin to germinate or adequate moisture is not received after application, use shallow tillage (rotary hoe or light harrow) and make sure cotton seeds are below tilled area. The use of a postemergence herbicide treatment may be required to control weed escapes at planting or following cotton emergence.

Additional Weeds Controlled: In addition to the weeds listed in Table 1, **PROWL H₂O** will suppress Russian thistle in the state of Arizona.

Use Methods and Timings

Preplant Surface - Apply **PROWL H₂O** up to 15 days prior to planting. Apply **PROWL H₂O** tank mixes and sequential programs as specified under the tank mix section.

Preplant Incorporated - Apply **PROWL H₂O** up to 60 days prior to planting and incorporate. Apply **PROWL H₂O** tank mixes and sequential programs as specified under the tank mix section.

16/31

Preemergence - Apply **PROWL H₂O** at planting or up to 2 days after planting. Apply to a seedbed which is firm and free of clods. Apply **PROWL H₂O** tank mixes and sequential programs as specified under the tank mix section.

Preplant Incorporated followed by Preemergence - Apply **PROWL H₂O** up to 60 days prior to planting and incorporate. Apply overlay application of **PROWL H₂O** at planting or up to 2 days after planting. Total amount of **PROWL H₂O** applied per acre cannot exceed the highest labeled rate for a given soil type. Preplant incorporated and preemergence applications of **PROWL H₂O** may be applied with labeled tank mix herbicide(s).

Lay-by Application (at last cultivation) - Apply **PROWL H₂O** directly to the soil between rows as a directed spray following the last normal cultivation (lay-by). Lay-by applications can be applied in cotton previously treated with **PROWL H₂O** or any herbicide(s) registered for use in cotton. Consult the labels of those herbicides for suggested treatments, rates to be used, and precautions or restrictions for use in cotton and for follow crop restrictions. The total amount of **PROWL H₂O** applied per acre per season cannot exceed the highest labeled rate for a given soil type.

DO NOT apply as a broadcast spray over the top of the cotton or **SERIOUS CROP INJURY CAN RESULT. AVOID CONTACT OF THE SPRAY** to the non-woody portion of cotton stems and to cotton foliage or **SERIOUS CROP INJURY CAN RESULT.** To reduce the potential for crop injury caused by herbicide contact with cotton foliage and stems, use protective shields when conditions favoring spray drift occur.

Glyphosate containing products may be applied with **PROWL H₂O** at lay-by in cotton with the Roundup Ready[®] gene. **DO NOT apply glyphosate containing products at lay-by on non-Roundup Ready cotton. DO NOT apply PROWL H₂O and glyphosate tank mix as a broadcast spray over the top of cotton or CROP INJURY MAY RESULT.**

Fall Application - **PROWL H₂O** may be applied for weed control in cotton in the fall, after October 15 (up to 140 days prior to planting cotton) in Arizona, California, Louisiana, New Mexico, Mississippi, Oklahoma and Texas. Apply **PROWL H₂O** at the broadcast rate of 2.0 pints on coarse or medium soils and 3.0 pints on fine soils.

Use Rates

Preplant, Preemergence and Lay-By Applications
Rate per Acre

Soil Texture	Conventional or Minimum Tillage	No-Till ²
Coarse	2.0 ¹ pts	2.0 pts
Medium	2.0 pts	3.0 pts
Fine	3.0 pts	4.0 pts

1 DO NOT exceed 1.6 pts/A on coarse textured soils in California.
2 Not recommended for soils with more than 3% organic matter.

Restrictions and Limitations

- DO NOT apply **PROWL H₂O** in no-till in California.
- Pre Harvest Interval (PHI) is 60 days between the last **PROWL H₂O** application and harvest.
- DO NOT feed forage or graze livestock in treated cotton fields.
- DO NOT exceed the highest seasonal rate per acre for any given soil type.

PROWL H₂O
 PROWL H₂O (Sulfentrazone) (Sulfentrazone)
 Southern Peas (Cowpeas) and Sweet Lupines

PROWL H₂O may only be applied preplant incorporated in chickpeas (garbanzo beans), dry beans, lima beans, snap beans, and southern peas (cowpeas).

PROWL H₂O may be applied preplant incorporated or preemergence in sweet lupines.

Use Methods and Timings

Preplant Incorporated - Apply up to 60 days prior to planting and incorporate.

Preemergence - Apply ONLY to sweet lupines at planting or up to 2 days after planting. Apply to a seedbed that is firm and free of clods.

Use Rates

Preplant Incorporated and Preemergence Applications
 Rate per Acre

Soil Texture	Southern States ¹	Northern States ¹	
		< 3% Organic Matter	> 3% Organic Matter
Coarse	1.5 pts	2.0 pts	2.0 pts
Medium	2.0 pts	2.5 pts	3.0 pts
Fine	3.0 pts	3.0 pts	3.0 pts

¹ See section V. **Restrictions and Limitations** for Map of Specific States.

Restrictions and Limitations

- DO NOT feed lupine hay and forage or graze livestock in treated lupine fields.

PROWL H₂O
 PROWL H₂O (Sulfentrazone) (Sulfentrazone)

PROWL H₂O may be applied preemergence, postemergence, or split application by ground, air, or chemigation.

Use Methods and Timings

Preemergence: After planting but before crop and weeds emerge.

Postemergence: 1st to 5th true leaf growth stage.

Split Application: At both preemergence and postemergence timings.

Chemigation: Apply between the 2nd and 9th true leaf stage (2nd to 6th true leaf stage in California). DO NOT irrigate in excess of 0.5 inches or water. Refer to Chemigation in section II. **Application Instructions** for specific instructions.

18/31

Use Rates

Preemergence, Postemergence, and Chemigation Applications

Broadcast Rate per Acre

Soil Texture	Rate
Coarse	1.5 pts
Medium	2.0 pts
Fine	3.0 pts

Restrictions and Limitations

- **DO NOT** exceed 3.2 pints per acre per crop (except Idaho, Oregon, and Washington).
- **DO NOT** apply within 60 days of harvest in California and within 45 days of harvest in all other states.
- **DO NOT** feed or graze these crops.

GRAIN SORGHUM

PROWL H₂O or **PROWL H₂O** plus atrazine may be applied as a post emergence incorporated (CULTI-SPRAY) application in grain sorghum grown in all states.

In addition, **PROWL H₂O** plus atrazine may be applied early postemergence in grain sorghum grown in states east of the Mississippi River and in Arkansas, eastern Texas, Louisiana, and the Missouri 'bootheel'.

DO NOT APPLY **PROWL H₂O** in grain sorghum preplant incorporated or preemergence as serious crop injury can result. DO NOT APPLY **PROWL H₂O** in grain sorghum more than once per crop season.

Additional Weeds Controlled: In addition to the weeds listed in Table 1, **PROWL H₂O** as a CULTI-SPRAY application will control the following weeds in grain sorghum; wild proso millet and shattercane.

Use Methods and Timings

CULTI-SPRAY: PROWL H₂O treatments can be applied from the 4-inch growth stage to as late as the last cultivation (lay-by) of grain sorghum. **PROWL H₂O** plus atrazine must be applied before the grain sorghum reaches 12 inches in height. See specific directions for CULTI-SPRAY applications under section **II. Application Instructions.**

Early Postemergence: For use ONLY in states east of the Mississippi River plus Arkansas, eastern Texas, Louisiana, and the bootheel of Missouri.

The seedbed should be firm and free of clods and trash. Use only where adequate tillage is practiced to provide good seed coverage. Plant grain sorghum AT LEAST 1½ inches deep to ensure good seed coverage.

Uniformly apply **PROWL H₂O** plus atrazine tank mix treatment in water by ground equipment or by aircraft. Apply **PROWL H₂O** plus atrazine tank mixture only after grain sorghum has reached the 2-leaf stage and when weeds are no more than 1 inch tall.

19/31

Use Rates

CULTI-SPRAY Application¹
Rate per Acre

Soil Texture	Southern States ²	Northern States ²
Coarse	1.5 pts	2.0 pts
Medium	2.0 pts	3.0 pts
Fine	3.0 pts	3.0 pts

1 For **PROWL H₂O** plus atrazine tank mixtures, apply 1.0 lb a.i. per acre of atrazine. DO NOT apply tank mixes on coarse textured soils.
2 See section V. **Restrictions and Limitations** for Map of Specific States.

Early Postemergence Application
Rate per Acre

Soil Texture	PROWL H ₂ O + Atrazine
Coarse	DO NOT USE
Medium and Fine	2.0 pts + 1.0 to 1.2 lbs a.i.

Restrictions and Limitations

- DO NOT apply **PROWL H₂O** preplant incorporated or preemergence.
- DO NOT apply **PROWL H₂O** as a CULTI-SPRAY treatment in grain sorghum planted in double row beds.
- DO NOT replant grain sorghum if crop loss occurs due to weather conditions.
- DO NOT apply in liquid fertilizer.
- Livestock can graze or be fed forage from **PROWL H₂O** plus atrazine treated grain sorghum fields after 21 days following application.



PROWL H₂O may be applied preplant incorporated for weed control in peas.

Additional Weeds Controlled: In addition to the weeds listed in Table 1, **PROWL H₂O** will control the following weeds in lentils and peas; wild proso millet, common chickweed, and shepherdspurse.

Use Methods and Timings

Preplant Incorporated - **PROWL H₂O** may be applied 60 days prior to planting up to immediately before planting. After application, rotary hoeing and shallow cultivation/tillage can be practiced without reducing weed control. Avoid tillage that will bring untreated soil to the surface.

Use Rates

Preplant Incorporated Application
Rate Per Acre

Soil Texture	Rate
Coarse	1.5 pts
Medium	2.0 pts
Fine	3.0 pts

20/31

Restrictions and Limitations

- DO NOT use in California
- DO NOT apply **PROWL H₂O** preemergence in peas.
- DO NOT apply **PROWL H₂O** more than once per cropping season.
- DO NOT apply to peas, lentils, pea or lentil forage, pea silage, pea hay, or pea straw grown for livestock feed.
- DO NOT apply in any type of irrigation system.
- Any crop registered for a preplant incorporated application of **PROWL H₂O** can be double cropped after peas.

NONBEARING FRUIT AND NUT CROPS AND NONBEARING VINEYARDS

PROWL H₂O may be applied for preplant incorporated, preplant surface, or preemergence weed control in several nonbearing fruit and nut crops and nonbearing vineyards. **PROWL H₂O** may be used before or after transplanting the following nonbearing crops:

Almond	Citrus	Nectarine	Pecan	Tangelo
Apple	Grape	Orange	Pistachio	Tangerine
Apricot	Grapefruit	Peach	Plum	Walnut, English
Cherry	Lemon	Pear	Prune	

Apply the spray directly to the ground beneath the trees or vines. DO NOT apply over the top of trees or vines with leaves or buds. Contact with leaves, shoots, or buds by the spray mixture may cause malformed plant tissues.

FOR NEWLY TRANSPLANTED AND ONE YEAR OLD GRAPEVINES: Apply only to dormant grapevines. DO NOT apply if buds have started to swell. Application after buds have started to swell may result in leaf distortion. DO NOT apply to newly transplanted trees or vines until ground has settled and no cracks are present.

Additional Weeds Controlled: In addition to the weeds listed in Table 1, **PROWL H₂O** will control the following weeds in nonbearing fruits and nuts and nonbearing vineyards; annual bluegrass, woolly cupgrass, Junglerice, Lovegrass, Browntop panicum, sprangletop, carpetweed, common chickweed, Fiddleneck, henbit, prostrate knotweed, Puncturevine, London rocket, shepherdspurse, Pennsylvania smartweed, and velvetleaf.

Use Methods and Timings

Preplant surface - Prior to transplanting, uniformly apply in 10 or more gallons of water per acre with ground or aerial equipment. Avoid root contact with treated soil when placing transplants into the hole or injury may occur.

Preplant Incorporated - Uniformly apply **PROWL H₂O** prior to transplanting but before weeds emerge. Incorporate **PROWL H₂O** to a depth of 1 to 2 inches. Application and incorporation must be made prior to transplanting to avoid mechanical injury to the crop. Avoid root contact with treated soil when placing transplants into the hole or injury may occur.

Chemigation - **PROWL H₂O** may be applied through solid set, hand move; low volume sprinkler (micro sprinkler) and drip (trickle) irrigation systems. **DO NOT** apply this product through any other type of irrigation system. Follow all recommendations, special instructions, and precautions in the general section covering Chemigation in section **II. Application Instructions**.

Preemergence - Applications may be in a band or broadcast.

Use Rates

Preplant or Preemergence Applications

Rate per Acre	
Short-term control (4 months)	2.0 qts
Long-term control (6 to 8 months)	4.0 qts

Chemigation Applications

Low Volume (Micro) Sprinkler and Drip (Trickle) Irrigation Instructions

Output of low volume sprinkler = 4 to 50 gallons per hour (gph) per emitter; output of drip irrigation system = 0.5 to 3 gph per emitter. Point of application should be above ground.

Irrigation system should run a sufficient amount of time prior to **PROWL H₂O** injection to have all emitters functioning properly. After system is operating properly, length of injection should be such that at one period of time during the injection, the first and last emitters in the system contain **PROWL H₂O** treated water. Add **PROWL H₂O** to the supply tank already filled with the volume of water required for the injection period. Maintain proper agitation in **PROWL H₂O** injection tank. **PROWL H₂O** should be mixed in clean water and injected down-line from filters. Following **PROWL H₂O** injection, system should be flushed for a period of time sufficient to clear the line of **PROWL H₂O**. (If **PROWL H₂O** application is made during a normal irrigation cycle, injection should be made during the last stage.)

Chemigation Calibration (for low volume micro sprinklers)

Calculation of use rate is based on **wetted area** around emitters - **NOT** on tree acres. To determine correct amount of **PROWL H₂O**, use the following formula:

1. Treated area per each emitter = A; $A = 3.14 \times (\text{radius} \times \text{radius})$
2. The area in square feet wet in each acre = B; $B = \frac{A \times \text{emitters/acre}}{144}$
3. The total area (in square feet) wet by your system = C; $C = B \times \text{acres covered by system}$
4. Rate per treated acre of **PROWL H₂O** (based on length of control desired) = R
Amount of **PROWL H₂O** to inject = S; $S = \frac{C}{43,560} \times R = \text{qts of PROWL H}_2\text{O}$

Example:

If the average distance from emitter to perimeter of wetted area measured one inch below soil surface is 13 inches, then

$$A = 3.14 \times (13'' \times 13''), \text{ and } A = 530.7 \text{ square inches}$$

If there are 300 emitters per acre, then

$$B = \frac{530.7 \times 300}{144} \text{ and } B = 1105.6 \text{ square feet wetted per acre.}$$

If the system covers 20 acres, then

$$C = 1105.6 \text{ square feet per acre} \times 20 \text{ acres, and } C = 22,112 \text{ square feet wetted by system}$$

If the desired application rate per treated acre is 2.0 qts of **PROWL H₂O**, then

$$S = \frac{22,112}{43,560} \times 2.0, \text{ and } S = 1.0 \text{ qt of PROWL H}_2\text{O should be injected into the system.}$$

Restrictions and Limitations

- DO NOT feed forage or graze livestock in treated fields.

22/31

**ONIONS (Direct Seeded and Transplanted Dry Bulb) and
SHALLOTS (Dry Bulb)**

PROWL H₂O may be applied by ground, air or chemigation.

Chemigation: Apply between the 2nd and 9th true leaf stage (2nd to 6th true leaf stage in California) unless otherwise specified below. DO NOT irrigate in excess of 0.5 inches or water. Refer to Chemigation in section **II. Application Instructions**.

Mineral Soils

Use Rates, Methods and Timings

Mineral Soils	
Broadcast Rate per Acre	
Soil Texture	Rate
Coarse	1.5 pts
Medium	2.0 pts
Fine	3.0 pts

State Specific Instructions

In All States Except California:

Apply PROWL H₂O as a broadcast treatment when onions or shallots have 2 to 9 true leaves.

Additional Use in Colorado, Kansas, and Nebraska:

PROWL H₂O may be applied sequentially in seeded onions. Apply first application of PROWL H₂O at loop stage. Apply sequential application of PROWL H₂O early postemergence (2nd to 9th true leaf stage). DO NOT exceed the maximum labeled rate for a given soil texture. DO NOT apply PROWL H₂O at loop stage through the 9th true leaf stage if heavy rains are expected or severe crop injury may result.

Additional Use in Colorado and the High Plains of Texas:

For transplanted onions only, apply and shallow incorporate (less than 2" deep) PROWL H₂O into preformed beds prior to transplanting.

Additional Use in Idaho, Oregon, and Washington:

Apply PROWL H₂O as a broadcast treatment when onions or shallots are between the flag leaf to 9th true leaf stage.

PROWL H₂O may be used at 3.0 to 4.0 pints per acre for dodder control on medium and fine textured soils. DO NOT apply PROWL H₂O using chemigation at the dodder control rate.

PROWL H₂O may be applied in the fall or spring to the furrow area of land bedded in the fall in preparation for planting seed of dry bulb onions the following spring. Apply PROWL H₂O as a banded application at rates based on appropriate soil texture. Band width should be approximately 1/2 the width of the row spacing. Keep PROWL H₂O away from the area where onion seed will be planted. Harrow-off tops of beds following PROWL H₂O furrow applications prior to planting onions. For selective weed control in the onion row, apply PROWL H₂O as a banded postemergence application to flag leaf onions at the labeled rates based on soil texture. Apply PROWL H₂O only once to the furrow area and once to the onion row as a postemergence application.

Additional Use in Michigan:

For mineral soils containing >10% organic matter, follow the directions for muck soils (see below).

In California:

PROWL H₂O may only be applied as a single application when onions or shallots have 2 to 6 true leaves.

Restrictions and Limitations (Mineral Soils)

- DO NOT mechanically incorporate except as specified for use on dry bulb onions in Colorado and the Texas High Plains.
- DO NOT apply to green (bunching) onions or leeks.
- DO NOT exceed 3.2 pints per acre per crop (except Idaho, Oregon, and Washington).
- DO NOT apply within 60 days of harvest in California and within 45 days of harvest in all other states.
- DO NOT feed or graze these crops.
- DO NOT apply PROWL H₂O preemergence through the loop stage if heavy rains are expected or else severe crop injury may result. If irrigating immediately after PROWL H₂O application at the preemergence through loop stage, DO NOT irrigate in excess of 0.5 inches of water.

Muck Soils

Use Rates, Methods and Timings

PROWL H₂O may be applied sequentially on muck soils as follows:

Muck Soils Rate per Acre	
Application Timing and Growth Stage	Rate
Preemergence through Loop Stage	4.0 pts
Early Postemergence (2 nd to 6 th true leaf stage)	4.0 pts
Late Postemergence (6 th to 9 th true leaf stage)	4.0 pts

Restrictions and Limitations (Muck Soils)

- DO NOT apply to muck soils in California.
- DO NOT apply to green (bunching) onions or leeks.
- DO NOT apply within 45 days of harvest.
- DO NOT feed or graze these crops.
- DO NOT apply more than 12.5 pints per acre per growing season on muck soils. To maximize crop safety, ensure good soil coverage during planting or transplanting and delay preemergence applications to the loop stage if possible.
- DO NOT apply PROWL H₂O preemergence through the loop stage if heavy rains are expected or else severe crop injury may result. If irrigating immediately after PROWL H₂O application at the preemergence through loop stage, DO NOT irrigate in excess of 0.5 inches of water.
- DO NOT plant sugarbeets, red beets, spinach, winter wheat, or winter barley as rotational crops on muck soils for 12 months from the time of last application if more than 3.2 pints per acre of PROWL H₂O is applied to the onion crop; see the PROWL H₂O leaflet label for additional follow crop restrictions.
- If loss of onion crop occurs due to adverse weather conditions, DO NOT replant any crop other than onions in muck soil during the same cropping year and DO NOT work the soil deeper than 2 inches.

24/31

PEANUTS

PROWL H₂O may be applied preplant incorporated in peanuts. **PROWL H₂O** may also be applied preemergence to peanuts grown under overhead irrigation. DO NOT use in California.

Use Methods and Timings

Preplant Incorporated - Apply PROWL H₂O up to 60 days prior to planting and incorporate.

Preemergence - Apply **PROWL H₂O** at planting or up to 2 days after planting and before crop emergence. To prevent decreased crop pegging, adequate incorporation must be achieved by applying a minimum of 0.75 inches of overhead irrigation or rainfall within 48 hours of application.

Use Rates

Preplant Incorporated or Preemergence Applications
Rate per Acre

Region	Rate
Texas, Oklahoma and New Mexico	2.0 pts
Other peanut growing states*	2.0 pts

*For heavy weed infestations, especially of Texas panicum, up to 3.2 pints of **PROWL H₂O** can be used in Alabama, Georgia or Florida.

POTATOES

PROWL H₂O may be applied preemergence, preemergence incorporated, or early postemergence in potatoes.

Additional Weeds Controlled: In addition to the weeds listed in Table 1, **PROWL H₂O** will control the following weed in potatoes; stinging nettle.

Use Methods and Timings

Preemergence - Apply **PROWL H₂O** after planting but before potatoes and weeds emerge or after drag-off.

Preemergence Incorporated - Apply **PROWL H₂O** and incorporate after planting but before potatoes and weeds emerge. Where drag-off is practiced, apply **PROWL H₂O** and incorporate before, at, or after drag-off but before potatoes and weeds emerge. Care must be taken so that incorporation equipment does not damage seed pieces or elongating sprouts.

Early Postemergence - Apply **PROWL H₂O** from crop emergence to the 6-inch stage of growth. DO NOT apply **PROWL H₂O** postemergence if potatoes are under stress from cold/wet or hot/dry conditions or crop injury may occur.

Chemigation - Apply **PROWL H₂O** preemergence after planting, after drag-off, or early postemergence through sprinkler irrigation systems. See Chemigation in section **II. Application Instructions** for complete instructions.

Use Rates

**Preemergence, Postemergence, or Chemigation
Rate per Acre**

Soil Texture	< 3% Organic Matter	> 3% Organic Matter
Coarse	1.5 pts	1.5 pts
Medium	2.0 pts	3.0 pts
Fine	3.0 pts	3.0 pts

Restrictions and Limitations

- DO NOT apply to sweet potatoes or yams.
- DO NOT apply preplant.
- DO NOT make more than one application of **PROWL H₂O** per season.
- Application of **PROWL H₂O** on White Rose variety potatoes during or followed by cool and/or wet weather conditions may result in crop injury.

RISE

PROWL H₂O may be applied as a delayed preemergence application in drilled, dry-seeded rice or as an early postemergence application in dry-seeded rice. Treatments may be applied to conventional, reduced or minimum tillage, and no-till (stale seed-bed) rice. The seedbed should be firm and free of clods, and must be prepared to allow for good seed coverage. The use of a planter under conditions that do not allow good soil coverage of the rice seed can result in reduced stand or stunting if **PROWL H₂O** contacts germinating rice seed.

For use in California, refer to BASF's supplemental labeling entitled "For Weed Control in Drilled, Dry-Seeded Rice in California".

Additional Weeds Controlled: In addition to the weeds listed in Table 1, **PROWL H₂O** will control the following weeds in rice; Junglerice and sprangletop.

Use Methods and Timings

Delayed Preemergence - Apply **PROWL H₂O** alone or with tank mix partner for delayed preemergence weed control in grain-drilled, dry-seeded rice. Apply **PROWL H₂O** alone or in tank mixture to levees after the levees are pulled and planted. Exposed seeds that come in contact with **PROWL H₂O** may be injured. Apply **ONLY** when growing conditions favor vigorous rice growth. The seedbed should have adequate moisture for seed germination.

Uniformly apply the recommended rate of **PROWL H₂O** after rice planting and before rice and weed emergence (spiking). Apply after the rice seed has absorbed water and germinated and after the soil has been previously sealed over the seed by at least 1 inch of rainfall or by irrigation (flush). If the soil has not been sealed by rain or flush, apply when 80 percent of germinated seeds have a primary root (radicle) or shoot at least 1/2 inch long. If there is insufficient moisture, flushing is recommended before **PROWL H₂O** application to supply moisture for root (radicle) initiation and for vigorous rice and weed growth.

If applied to soil prior to these conditions, or to cracked soil, then stand reduction or stunting of rice may occur. Under some conditions, use of gibberellic acid-treated seed, heavy rainfall after application, or flushing after application may result in herbicide injury to rice. Rice can overcome moderate injury with appropriate cultural practices.

26/31

Due to the residual activity of **PROWL H₂O**, this treatment may be applied if rice is too small to maintain a flood on the field for weed control. However, proper water management practices must be followed for normal rice growth and activity of **PROWL H₂O**.

Early Postemergence - Apply **PROWL H₂O** as a tank mix partner. Base applications on weed and crop size guidelines of the tank mix partner. DO NOT apply to fields with standing water. If necessary, fields may be flushed prior to treatment to produce vigorous rice and weed growth. Since soil and weeds must be completely exposed to spray coverage, no flood water should be on the field at time of application. Cloddy soil, standing water (puddles) at the time of application, or cracks in the soil that form after application may result in reduced weed control. Because of the residual activity of **PROWL H₂O**, this treatment may be applied if rice is too small to maintain a flood on the field for weed control. However, proper water management practices must be followed for normal rice growth and activity of **PROWL H₂O**.

Use Rates

Delayed Preemergence Applications
Rate per Acre

Soil Texture	PROWL H ₂ O
Sands, loamy sands	DO NOT USE
Sandy loams	1.5 pts
Loams, silt loams, silts, sandy clay loams	2.0 pts
Silty clay loams, clay loams, sandy clays, silty clays, clays	2.0 pts

Early Postemergence Application
Rate per Acre

Soil Texture	PROWL H ₂ O
Coarse	1.5 pts
Medium	2.0 pts
Fine	2.0 pts

Restrictions and Limitations

- DO NOT apply **PROWL H₂O** through any type of irrigation system.
- DO NOT apply in liquid fertilizer.
- DO NOT use on water-seeded rice, except as specified in other BASF labeling.
- DO NOT apply to rice fields if fields are used for fish production, especially catfish or crayfish farming.
- DO NOT bale or use rice straw from treated fields for feed or bedding.
- DO NOT use water containing **PROWL H₂O** residues from rice cultivation to irrigate food or feed crops that are not registered for use with **PROWL H₂O**.
- In case of a crop failure due to weather conditions or disease following treatment with **PROWL H₂O** alone or in a tank mixture, only drilled dry-seeded rice may be immediately replanted; however, the grower assumes all risks and consequences associated with replanting of rice because there is the potential for stand reduction or stunting. A 10 percent increase in seeding rate is recommended. Replant seed below the herbicide layer because reduced stand or stunting may occur if **PROWL H₂O** contacts germinating rice seed. DO NOT replant with gibberellic acid-treated seed. DO NOT reapply **PROWL H₂O** alone or in a tank mixture.
- DO NOT apply **PROWL H₂O** and then flush for germination.
- DO NOT apply to stressed rice. Stress factors include cold or hot temperature extremes, excessive moisture or drought, problem soils, poor field drainage, or deep water after application.
- DO NOT apply early preemergence nor preplant incorporated as severe rice injury is possible.

27/31

SOYBEANS

PROWL H₂O may be applied in conventional, minimum, or no-till as a fall surface, fall incorporated, preplant surface, preplant incorporated, or preemergence application in soybeans.

Additional Weeds Controlled: In addition to the weeds listed in Table 1, **PROWL H₂O** will control or reduce competition from the following weeds in soybeans; woolly cupgrass, itchgrass, red rice, and shattercane. For specific rates for red rice and itchgrass management, see table at end of this section.

Use Methods and Timings

Fall Applied - PROWL H₂O may be surface applied or incorporated in the fall, after fall harvest and prior to ground freeze, in states north of I-80 and the entire states of Iowa, Illinois, Indiana, Kansas, Kentucky, Missouri, Nebraska, Ohio, Oklahoma, and Texas. Fall applications of **PROWL H₂O** will not provide season-long weed control.

Preplant Surface - Apply **PROWL H₂O** up to 15 days prior to planting. **PROWL H₂O** may be applied up to 45 days prior to planting when used in a tank mix or applied sequentially with **EXTREME[®]**, **RAPTOR[®]**, or **PURSUIT[®]** herbicides. Apply **PROWL H₂O** tank mixes and sequential programs as specified under the tank mix section.

Preplant Incorporated - Apply **PROWL H₂O** up to 60 days prior to planting and incorporate.

Preemergence - Apply **PROWL H₂O** at planting or up to 2 days after planting. Apply to a firm seedbed, free of clods. DO NOT make applications of **PROWL H₂O** preemergence north of Interstate 80, except in the states of Indiana, Michigan and Ohio, or as specified in other supplemental BASF labeling.

Use Rates

Fall Surface, Fall Incorporated, Preplant Surface, or Preplant Incorporated

Rate Per Acre

Soil Texture	< 3% Organic Matter	> 3% Organic Matter
Coarse	1.5 pts	2.0 pts
Medium	2.5 ¹ pts	3.0 pts
Fine ²	3.0 pts	3.0 pts

1 DO NOT exceed 2.1 pts for Southern states; see section V. Restrictions and Limitations for Map of Specific States.

2 For heavy clay soils, apply **PROWL H₂O** at the broadcast rate of 3.2 pints per acre.

Preemergence Applications

Rate Per Acre

Soil Texture	< 3% Organic Matter	> 3% Organic Matter
Coarse	1.5 pts	1.5 pts
Medium	2.0 pts	2.0 pts
Fine	2.0 pts	2.5 pts

28/31

**Preplant Incorporated Applications for Red Rice Control
and Itchgrass Suppression
Rate Per Acre**

Soil Texture	Up to 3% Organic Matter ¹
Coarse	3.0 pts
Medium	3.0 pts
Fine	4.0 pts

¹ This use is not recommended for soils with more than 3% organic matter.

Restrictions and Limitations

- DO NOT use PROWL H₂O in soybeans in California.
- Livestock can graze or be fed forage from treated soybean fields.
- DO NOT apply within 85 days of harvest.
- DO NOT exceed one application per crop season at the highest rate per acre for any given soil type and application method.

SUGARCANE

PROWL H₂O may be applied preemergence through lay-by to plant or ratoon sugarcane.

Additional Weeds Controlled: In addition to the weeds listed in Table 1, PROWL H₂O will control the following weeds in sugarcane; guineagrass, swollen fingergrass, itchgrass, junglerice, and Browntop panicum.

Use Methods and Timings

PROWL H₂O may be applied preemergence through lay-by to plant or ratoon sugarcane. Although there may be adequate crop tolerance for postemergence applications at lay-by, the spray must be directed under the sugarcane canopy in order to obtain effective weed control.

Use Rates

**Preemergence Through Lay-By Applications
Rate per Acre**

Use Area	Rate ¹
All States, Except Hawaii	4.2 – 6.2 pts
Muck soils (Florida only)	4.2 – 8.4 pts
Hawaii	4.2 – 8.4 pts

¹ Use the high rate, if: clay soils; no mechanical incorporation is planned; heavy weed populations are anticipated; itchgrass infestation is anticipated; or no shaving is planned.

Restrictions and Limitations

- DO NOT exceed 12.5 pints of PROWL H₂O per acre in one growing season.
- Ratoon sugarcane must be lightly shaved in early spring to remove the old stubble before incorporation over the line of sugarcane is possible. Carefully adjust equipment to incorporate without causing excessive damage to emerging shoots.
- DO NOT make aerial applications at close-in because complete and uniform coverage cannot be obtained.
- DO NOT apply through any type of irrigation system.
- DO NOT apply within 90 days of harvest.
- DO NOT graze treated fields or feed treated forage or fodder to livestock.

29/31

SUNFLOWERS

PROWL H₂O may be applied preplant incorporated in all states. Fall preplant incorporated applications may be made in North Dakota, South Dakota and Minnesota only. **PROWL H₂O** may be applied preplant surface or preemergence in no-till sunflowers. **PROWL H₂O** may be applied preemergence in conventional tillage sunflowers.

Use Methods and Timings

Preplant Incorporated (Spring) - Apply up to 60 days prior to planting and incorporate.

Preplant Incorporated (Fall applications in North Dakota, South Dakota and Minnesota) - Apply **PROWL H₂O** and immediately incorporate in late fall prior to planting sunflowers the following spring. Apply **PROWL H₂O** in the late fall when soil temperatures are 45°F or below but before the ground freezes. DO NOT apply when the air temperature is below 45°F.

Prior to sunflower planting in the spring, fields treated with **PROWL H₂O** should receive at least one shallow additional incorporation. Spring incorporation should be at an angle to the last tillage operation.

Preemergence - Apply **PROWL H₂O** at planting or up to 2 days after planting. Preemergence applications of **PROWL H₂O** on conventional tillage sunflowers may increase the likelihood of crop injury and decrease herbicide performance compared to preplant incorporated applications. If dry conditions with limited precipitation exist or unseasonably cool temperatures following planting are forecasted, apply **PROWL H₂O** prior to planting and mechanically incorporate with tillage.

Use Rates

Preplant Incorporated (Spring) or Preemergence (Conventional Tillage)
Rate per Acre

Soil Texture	Southern States ¹	Northern States ¹	
		< 3% Organic Matter	> 3% Organic Matter
Coarse	1.5 pts	2.0 pts	2.0 pts
Medium	2.0 pts	2.5 pts	3.0 pts
Fine	3.0 pts	3.0 pts	3.0 pts

¹ See section V. **Restrictions and Limitations** for Map of Specific States.

Preplant Incorporated (Fall) Application¹
Rate per Acre

Soil Texture	< 3% Organic Matter	> 3% Organic Matter
Coarse	2.5 pts	2.5 pts
Medium	3.0 pts	3.5 pts
Fine	3.5 pts	3.5 pts

¹ For use in North Dakota, South Dakota and Minnesota only

30/31

No-Till Sunflowers

PROWL H₂O may be applied at 3.0 pts per acre up to 30 days before planting (preplant) to immediately after planting (preemergence). PROWL H₂O is most effective in controlling weeds when adequate rainfall or overhead irrigation is received shortly after application.

Additional Weeds Controlled: In addition to the weeds listed in Table 1, **PROWL H₂O** will control the following weed in no-till sunflowers; carpetweed.

DO NOT use on fine soils with > 3% organic matter.

Restrictions and Limitations (All tillage types)

- DO NOT apply PROWL H₂O postemergence.
- DO NOT feed forage or graze livestock in treated sunflower fields.

Tobacco

PROWL H₂O may be applied preplant incorporated or as a lay-by application in transplanted tobacco.

Use Methods and Timings

Preplant Incorporated - Apply **PROWL H₂O** with ground sprayer and incorporate up to 60 days prior to transplanting tobacco.

Applied according to directions and under normal growing conditions, PROWL H₂O will not harm transplanted tobacco. Under stress conditions for plant growth such as cold/wet or hot/dry weather, PROWL H₂O can produce a temporary retardation of tobacco development.

Lay-by - **PROWL H₂O** may be applied as a directed spray following the last normal cultivation (lay-by), usually 4 to 6 weeks after transplanting tobacco. Apply PROWL H₂O in a 16 to 24-inch band between the crop rows. The spray should not contact tobacco plants.

Use Rates

Preplant Incorporated Application
Rate per Acre

Use Area	Soil Texture	Use Rate
Florida, Georgia, Maryland, North Carolina, South Carolina, Virginia	Coarse	2.0 pts
	Medium	
	sandy clay loams, loams	2.0 pts
	silt loams, silts	2.5 pts
	Fine	2.5 pts
Other states	Coarse	2.0 pts
	Medium	3.0 pts
	Fine	3.0 pts

31/31

Lay-By Application
Rate per Acre

Soil Texture	Use Rate
Coarse	1.5 pts
Medium	2.0 pts
Fine	2.0 pts

Restrictions and Limitations

- DO NOT apply as a broadcast spray as contact may cause malformed tobacco leaves.

Provi is a registered trademark of BASF Corporation

© 2003 BASF Corporation
NVA 2003-04-129-0038

BASF Corporation
26 Davis Drive
Research Triangle Park, NC 27709

BASF