

400-461

09/29/2000

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U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Pesticide Programs
Registration Division (H7505C)
1200 Pennsylvania Avenue N.W.
Washington, D.C. 20460

EPA Reg. Number:
400-461

Date of Issuance:
SEP 29 2000

NOTICE OF PESTICIDE:
 Registration
 x Reregistration

Term of Issuance: Conditional

Name of Pesticide Product:
Dimilin 2L

(under FIFRA, as amended)

Name and Address of Registrant (include ZIP Code):

Uniroyal Chemical Company
74 Amity Road
Bethany, CT 06524-3402

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.

Based on your response to the Reregistration Eligibility Document, EPA has reregistered the product listed above. This action is taken under the authority of section 4(g)(2)(C) of the Federal Insecticide, Fungicide, and Rodenticide Act, as amended. Reregistration under this section does not eliminate the need for continual reassessment of pesticides. EPA may require submission of data at any time to maintain the registration of your product.

The labeling referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), as amended, is acceptable subject to the comments given below:

1. Conditions listed in our letter dated April 8, 1999, approving the new use on rice still apply.
2. Revised warranty statement is not acceptable as proposed. It contains overbroad statements in the first and third paragraph concerning limitations of liability, and imply that the buyer has no legal rights to recover damages. Such statements are misleading, and may constitute misbranding under FIFRA. The rights of a person to recover damages from a manufacturer are

Continued on Page 2

Signature of Approving Official:

Tina E. Levine

Tina E. Levine, PhD., Chief
Insecticide-Rodenticide Branch
Registration Division (7505C)

Date:

SEP 29 2000

Notice of Reregistration (continued)
EPA Registration No. 400-461

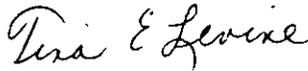
complicated and vary from one jurisdiction to another, depending on statutes and judicial decisions of individual states. These statements must be deleted from the warranty or qualified in such a way as to make it clear that it is the registrant's intent that Uniroyal Chemical Company's liability be limited and that the user assumes risks, and that these statements are not meant to be statements of law.

3. Move the heading "Sensitive Areas" from bottom of page two to top of page three so that the heading and text are not separated.
4. Revised Confidential Statement of Formula (CSF) dated 7/29/1997 is acceptable, and supercedes all previous versions. For the record this is the **only valid** CSF for this product in our files.
5. Submit two (2) copies of the final printed label before your release this product for shipment.

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

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

Sincerely,



Tina E. Levine, Ph.D., Chief
Insecticide Rodenticide Branch
Registration Division (7505C)

Enclosure

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RESTRICTED USE PESTICIDE

Due to toxicity to aquatic invertebrate animals. For retail sale to and use only by Certified Applicators, or persons under their direct supervision, and only for those uses covered by the Certified applicator's certification.

ACCEPTED
with COMMENTS
In EPA Letter Dated:

SEP 29 2000

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

400-461

DIMILIN® 2L

FOR USE ON COTTON, SOYBEANS
RICE AND RANGELAND

INSECT GROWTH REGULATOR SUSPENSION CONCENTRATE

Net contents:

COMPOSITION

Active Ingredient: (% by weight)

diflubenzuron

N-[[[4-Chlorophenyl)amino]carbonyl]-2,6-difluorobenzamide* 22%

Inert Ingredients: 78%

TOTAL 100%

*Contains 2 lbs. diflubenzuron per gallon.

EMERGENCY ASSISTANCE:

UNIROYAL CHEMICAL EMERGENCY PHONE 203-723-3670

SAFETY DATA AND INFORMATION 203-573-3303

TRANSPORTATION EMERGENCY (CHEMTREC) 800-424-9300

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

KEEP OUT OF REACH OF CHILDREN CAUTION

PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS CAUTION

PERSONAL PROTECTIVE EQUIPMENT

Applicators and Other Handlers Must Wear: A long-sleeved shirt & long pants; chemical-resistant gloves such as barrier laminate, nitrile rubber, neoprene rubber or viton when mixing and loading and also when using hand-held equipment; shoes plus socks.

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

When handlers use closed systems (including water soluble bags), 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. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS

This pesticide is toxic to aquatic invertebrates. For terrestrial uses (other than on forest canopy to control forest pests), 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 or runoff from treated areas may be hazardous to aquatic invertebrate organisms in neighboring areas. Do not contaminate water when disposing of equipment wastewater or rinsate.

**UNIROYAL
CHEMICAL**

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
- chemical-resistant gloves such as barrier laminate, nitrile rubber, neoprene rubber or viton.
- shoes plus socks.

STORAGE AND DISPOSAL

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

STORAGE - Store in a dry location.

PESTICIDE 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.

GENERAL INSTRUCTIONS AND INFORMATION

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

SPRAY DRIFT LABELING

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 is responsible for considering all these factors when making decisions. The following drift management requirements must be followed to avoid off-target drift movement from aerial applications to agricultural field crops. These requirements do not apply to forestry applications, public health uses or to applications using dry formulations.

1. The distance of the outer most nozzles on the boom must not exceed 3/4 the length of the wingspan or rotor.
2. Nozzles must always point backward parallel with the air stream and never be pointed downwards more than 45 degrees.

Where states have more stringent regulations, they should be observed.

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

Information on Droplet Size

The most effective way to reduce drift potential is to apply large droplets. The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential, but will not prevent drift if applications are made

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improperly, or under unfavorable environmental conditions (see Wind, Temperature and Humidity, and Temperature Inversions).

Controlling Droplet Size

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

- **Pressure** - Do not exceed the nozzle manufacturer's recommended pressures. For many nozzle types lower pressure produces larger droplets. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.
- **Number of nozzles** - Use the minimum number of nozzles that provide uniform coverage.
- **Nozzle Orientation** - Orienting nozzles so that the spray is released parallel to the airstream produces larger droplets than other orientations and is the recommended practice. Significant deflection from the horizontal will reduce droplet size and increase drift potential.
- **Nozzle Type** - Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. Solid stream nozzles oriented straight back produce the largest droplets and the lowest drift.

Boom Length

For some use patterns, reducing the effective boom length to less than 3/4 of the wingspan or rotor length may further reduce drift without reducing swath width.

Application Height

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

Swath Adjustment

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

Wind

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

Temperature and Humidity

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

Temperature Inversions

Applications should not occur during a temperature inversion because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover 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 upwards and rapidly dissipates indicates good vertical air mixing.

Sensitive Areas

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

GENERAL INFORMATION

DIMILIN 2L is an insect growth regulator which is effective on a wide variety of insect pests, predominately from the families Lepidoptera and Diptera. Because of its mode of action, which results in a disruption of the normal molting process of the insect larvae, the action of DIMILIN is slow and several days may elapse before the full effect is seen. Because of its specificity, DIMILIN does not effect bees or other beneficial insects and is therefore an excellent product for use in IPM programs.

GENERAL PRECAUTIONS AND RESTRICTIONS

Do not apply this product to bodies of water where swimming is likely to occur.

For Row Crops, Rangeland and Non-Crop Areas: Do not apply within 25 feet by ground or 150 feet by air of bodies of water such as lakes, reservoirs, rivers, permanent streams, natural ponds, marshes or estuaries. All applications must include a 25 foot buffer strip within the buffer zone to decrease runoff.

RESTRICTIONS ON ROTATIONAL CROPS: Do not plant food or feed crops in DIMILIN treated soils within 1 month following last application, unless DIMILIN is authorized for use on these crops.

APPLICATION INSTRUCTIONS

USE AND MIXING DIRECTIONS IF USED WITH WATER:

1. Fill tank with half of the required amount of water.
2. Begin agitation and add required amount of DIMILIN 2L.
3. Continue agitation while adding remainder of water.
4. Add proper quantity of oil slowly. To avoid formation of an invert emulsion, use at least 2 parts of water for each part of oil.

USE AND MIXING DIRECTIONS IF USED WITHOUT WATER:

Always evaluate any potential mixture for compatibility and sprayability. To ensure thorough mixing of DIMILIN 2L with insecticides or other carriers, it is recommended that ingredients be premixed in a nurse tank prior to being transferred to aerial or ground ULV application equipment. If nurse tank is not available, or unable to simultaneously mix:

1. Fill tank with the required amount of oil and/or oil based insecticide.
2. Begin agitation and add required amount of DIMILIN 2L.
3. After the contents of the tank have been thoroughly agitated, a volume of carrier sufficient to fill the booms and piping system should be drained and then added back to the tank.

Aerial or ground application: Spray should be applied with aerial or ground equipment designed or modified to insure full uniform coverage of the entire plant. Adjust equipment to provide droplets with a diameter of 150 to 220 microns. Provide agitation prior to, during, and after blending and while applying.

SOYBEANS (except California)

VELVET BEAN CATERPILLAR, MEXICAN BEAN BEETLE AND GREEN CLOVER WORM: DIMILIN 2L will control larvae of velvetbean caterpillar, Mexican bean beetle and green cloverworm. Apply DIMILIN 2L at the rate of 2 to 4 ounces per acre. Make application when larvae are small (less than 0.5 inches) to give greater control and minimum insect damage to leaves. Repeat application if damaging numbers reappear. The minimum reapplication interval is 30 days.

DIMILIN 2L may be applied at the lower rate (2 ounces) to prevent velvetbean caterpillar build-up when the vegetative growth of soybeans is completed and as pod formation begins. Consult local Extension Service regarding infestation levels requiring treatment.

BEET AND FALL ARMYWORM AND SOYBEAN LOOPER: To control larvae of beet and fall armyworm and to provide suppression of soybean

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looper, apply 4 ounces of DIMILIN 2L per acre. Application must be made when worms are small before the 3rd instar and before populations build.

ADJUVANT USAGE: See Cotton Section.

Aerial Application: Apply recommended amount of DIMILIN 2L in sufficient water (3 to 5 gallons per acre) to achieve uniform coverage of foliage.

Ground Application: Apply recommended amount of DIMILIN 2L in 9 to 35 gallons of water per acre to give uniform coverage.

Do not make more than two applications per season. Do not apply within 21 days of harvest.

DIMILIN 2L inhibits the molting process of larvae, therefore it does not provide immediate kill. From 5 to 7 days may be required before populations are reduced.

SOYBEAN YIELD ENHANCEMENT: In the absence of significant insect pressure and under certain growing conditions, an increase in soybean seed yield has been demonstrated with DIMILIN under field conditions on both determinate and indeterminate cultivars. Application of 0.031 to 0.062 lb. a.i. per acre (2 to 4 fl. oz. DIMILIN 2L per acre) to high yield potential soybean plants at the R3 to R3.5 growth stage period has been more consistent in increasing yields than applications at other reproductive stages of the soybean plant. This reproductive period represents beginning pod growth (pod $\frac{3}{16}$ inch long at one of the four uppermost nodes on the main stem with a fully developed leaf) to just prior to full pod elongation (pod $\frac{3}{4}$ inch long at one of the four uppermost nodes on the main stem with a fully developed leaf).

Use on soybeans not registered by the California Department of Pesticide Regulation.

COTTON

BEET ARMYWORM:

EARLY SEASON (before first bloom): For early infestations on young cotton, DIMILIN 2L should be applied at the first sign of beet armyworm activity (2 egg masses or hatch outs/100 feet of row) with 2 to 4 fl. oz. per acre in multiple applications, either as directed or broadcast spray. Use on a 5 to 7 day interval until up to 8 fl. oz. per acre have been applied. Do not exceed 6 applications per season and do not exceed 24 fl. oz. DIMILIN 2L per season. Multiple applications of DIMILIN 2L will provide acceptable beet armyworm control and because it has little activity on beneficial insects (parasites and predators) and has good persistence, will help prevent populations of beet armyworm from building up later in the growing season. Use of DIMILIN 2L in this way allows for more complete coverage of new foliage during the period of rapid vegetative growth.

MID SEASON: Starting around first bloom and through mid-bloom, apply 4 to 8 fl. oz. of DIMILIN 2L per acre. Repeat application until up to 8 fl. oz. per acre have been applied, using a 5 to 7 day interval between applications. The higher application rate should be used on larger cotton and/or under conditions of greater larval pressure. Do not exceed 6 applications per season and do not exceed 24 fl. oz. DIMILIN 2L per season. First application should coincide with peak beet armyworm moth catches in pheromone traps, indicating another generation of larvae is imminent. DIMILIN is more effective on early stages of larval development, therefore cotton leaves should be treated before populations become established.

LATE SEASON: After mid-bloom and prior to 14 days before harvest, apply 6 to 8 fl. oz. of DIMILIN 2L per acre. The higher application rate should be used on more advanced cotton or under conditions of greater larval pressure. Do not exceed 6 applications per season and do not exceed 24 fl. oz. DIMILIN 2L per season. Do not exceed 3 applications and 12 fl. oz. DIMILIN 2L post boll opening. Application should coincide with peak beet armyworm moth catches in pheromone traps. Additional applications of 6 to 8 fl. oz. per acre may be needed if larval pressure continues.

Adjuvant Usage: Always use oil (1 to 2 quarts) with DIMILIN 2L if

conditions are favorable for water evaporation (e.g. high air temperature and/or low humidity). For ground or aerial LV application, 1 pint to 2 quarts of emulsified vegetable or paraffinic crop oil is recommended to enhance canopy penetration and to reduce spray droplet evaporation and subsequent drift. For ULV application, use DIMILIN 2L in a minimum of 20 oz. of emulsified cottonseed, vegetable or petroleum based oil carrier. A compatibility agent may be needed if non-emulsified cottonseed oil is used. Consult your supplier or Uniroyal representative for oil specifications.

Aerial Application: Apply in 3 to 5 gallons total volume per acre. For ULV application, use a total volume of 20 to 48 oz. per acre. (See preceding sections on mixing directions and on use of adjuvants).

Ground Application: Apply in 10 to 20 gallons of total volume per acre to give uniform coverage. For ULV application, use a total volume of 20 to 64 oz. per acre (See preceding sections on mixing directions and on use of adjuvants).

Use sufficient application volume to assure adequate coverage. DIMILIN 2L may be mixed with other insecticides being applied for other cotton insects. When emulsifiable concentrate insecticide formulations are used with oil and DIMILIN in tank mixes, they may result in phytotoxicity. Care should be taken where such mixture is used. Because of the unique mode of action of DIMILIN, its visible effects may not be seen for 5 to 7 days following application.

FALL ARMYWORM, YELLOWSTRIPED ARMYWORM, SOUTHERN ARMYWORM, SOYBEAN LOOPER, CABBAGE LOOPER AND SALTMARSH CATERPILLAR: For larvae of fall armyworm, yellowstriped armyworm and southern armyworm, and larval suppression of soybean looper, cabbage looper and saltmarsh caterpillar, apply 4 to 8 fl. oz. of DIMILIN 2L per acre. Application should be made during early stages of larval development. Repeat application until at least 8 fl. oz. per acre have been applied using a 5 to 7 day interval. See **BEET ARMYWORM** for recommendations on adjuvants, and application by air or ground. See **BEET ARMYWORM** for use restrictions.

BOLL WEEVIL:

EARLY SEASON (before first bloom): DIMILIN 2L will control boll weevil by suppressing reproduction. Apply 4 to 8 fl. oz. of DIMILIN 2L per acre in combination with 2 to 4 quarts of emulsified cottonseed oil, vegetable oil, or paraffinic crop oil. For ULV application, use 4 fl. oz. of DIMILIN 2L in a minimum of 8 fl. oz. of emulsified cottonseed oil, oil based insecticide, or vegetable or petroleum based oil carrier. A compatibility agent may be needed if a non-emulsified cottonseed oil is used. Consult your supplier or Uniroyal representative for oil specifications.

For best suppression of boll weevil reproduction, make first application at pinhead square stage of cotton growth when overwintering boll weevils are entering the fields. Repeat treatments should allow a minimum of 7 days between application.

LATE SEASON: DIMILIN 2L will reduce the numbers of weevils that emerge in the following spring if applications are made when adult weevils are going into diapause to overwinter. Apply when cotton plant has reached full vegetative growth or when it begins blooming out the top. For ground or aerial LV application, spray 2 to 4 fl. oz. of DIMILIN 2L per acre in combination with 2 to 4 quarts of an emulsifiable vegetable or paraffinic oil per acre. For ULV application, use 2 to 4 fl. oz. DIMILIN 2L in a minimum of 8 oz. of emulsified cottonseed oil, oil based insecticide, or vegetable or petroleum based oil carriers. A compatibility agent may be needed if a non-emulsified cottonseed oil is used. At least 2, but not more than 3, applications at 7 to 14 day intervals should be made.

Aerial application: Apply in 3 to 5 gallons total volume per acre. For ULV application, use total volume of 20 to 32 fl. oz. per acre. (See section on use of adjuvants above).

Ground application: Apply in 10 to 20 gallons of total volume per acre to give uniform coverage. For ULV application, use total volume of 20 to

64 fl. oz. per acre. (See section on use of adjuvants above).

DIMILIN 2L does not kill the adult boll weevils, however, eggs deposited by affected female weevils will not hatch, thus limiting reproduction. The control of egg hatch and larval development within the square prevents its shedding and will then allow normal boll development. After initial treatment of the female weevil, 7 to 10 days are required before non-hatching eggs are laid; however, once affected, non-hatching eggs will be laid for approximately 10 days, and longer if the female encounters more DIMILIN. Thus treat early and use multiple applications.

When DIMILIN 2L is used alone for boll weevil control, it allows normal build-up of beneficial insects which may aid in control of bollworm and budworm. Emulsifiable concentrate insecticide formulations used in tank mixes, in the presence of oil, may result in phytotoxicity. Care should be taken where such mixture is used.

USE RESTRICTIONS FOR COTTON: Do not exceed 6 applications per season and do not exceed 24 fl. oz. DIMILIN 2L per season. Do not exceed 3 applications and 12 fl. oz. DIMILIN 2L post boll opening. Do not apply closer than 14 days before harvest.

RICE

RICE WATER WEEVIL

Southern U.S. Rice Belt:

For Drill Seeded; Dry Seeded; or Water Seeded, Delayed Flood Rice, make a single 12 to 16 fl. oz. application of DIMILIN 2L per acre per year to control larvae when adult infestations reach economic threshold and/or at initial oviposition, usually within a time frame of 2-5 days after permanent flood establishment. If adult weevil infestations are historically high and/or migration into the field is prolonged, use the higher application rate.

For Water Seeded, Pinpoint Flood, or Continuous Flood Rice, split applications should be made. Apply 8 fl. oz. after the permanent flood when adult infestations reach economic threshold and/or at initial oviposition, usually when rice leaves are exposed above the water surface. The second 8 fl. oz. treatment must be made 5-7 days after the first application. Failure to make the second 8 fl. oz. application within the above timeframe could result in inadequate control of rice water weevil larvae, especially if adult infestations are high and/or migration into the rice is prolonged.

California:

To Control Larvae of Rice Water Weevil, apply 12 to 16 fl. oz. DIMILIN 2L per acre per year at initiation of oviposition by adults. During a typical year this coincides with 2 to 8 days after rice emergence above the water. For best results target the application for 2 to 5 days after rice emergence above the water (2 to 4 leaf stage). Use the higher application rate if infestations have been historically high.

All States:

Consult your local extension service for determination of economic threshold and/or determination of initiation of oviposition.

DIMILIN does not appear to control adult weevils. It controls rice water weevil by preventing larval emergence from the egg. Eggs laid under the surface of treated water are controlled. Additionally, adults feeding on treated plant surfaces do not lay viable eggs.

Apply DIMILIN 2L by air using at least 5 gallons total volume per acre.

Do not apply DIMILIN 2L if flooding is in progress. Activity will be reduced. Since DIMILIN 2L is water active, the entire field should be treated.

For maximum activity of DIMILIN 2L do not disturb flood after a single application for at least 7 days. With split applications in water seeded, pinpoint flood, or continuous flood rice, flood should not be disturbed for a minimum of 4 days following the first treatment and 7 days following the second application. Treated water should be held at least 14 days to allow for dissipation of DIMILIN 2L.

DIMILIN 2L is not phytotoxic to rice. DIMILIN 2L can be safely applied

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in combination with post permanent flood herbicides such as FACET®, GRANDSTAND® and LONDAX®. However, before using a tank mix combination, read each product label carefully and follow Precautionary Statements on each label.

©Facet is a registered trademark of BASF AG; ©Grandstand is a registered trademark of DowElanco; ©Londax is a registered trademark of E.I. DuPont de Nemours and Company.

USE RESTRICTIONS FOR RICE:

- Do not apply within 80 days of harvest.
- Do not use on rice fields in which crayfish (crawfish) farming is included in the cultural practice.
- Do not drain treated water into fields where crayfish farming is intended.
- Do not apply to rice immediately adjacent to sites of crayfish aquaculture.
- Do not use treated rice flood waters for irrigating crops except for uses currently established for DIMILIN.
- Do not impregnate on granular materials.
- Do not use on wild rice (*Zizania* spp.).

RANGELAND AREAS

GRASSHOPPERS / MORMON CRICKETS: DIMILIN 2L will control grasshopper/Mormon cricket infestations in rangeland areas. Higher rates and gallonages are suggested for areas with dense vegetation, when nymphs are beyond the 2nd instar stage, and when climatic conditions are favorable for grasshopper/Mormon cricket survival and increase.

APPLICATION RATES AND RECOMMENDATIONS*

Insect	No. of Applications	Rate per Acre	Timing
Grasshoppers and Mormon crickets	1	0.5 to 1.0 oz.	Early instar (majority in the 2nd to 3rd instar nymphal stages)
	2	0.5 fl. oz.	If a second application is made, apply 2 to 3 weeks after the first application.

AERIAL APPLICATION: Apply in 1 to 5 gallons of water per acre and include 1 pt. to 2 qts. of emulsified vegetable or paraffinic crop oil if conditions are favorable for water evaporation (e.g. high air temperature and/or low humidity). For ULV application, use a total volume of at least 12 to 32 fl. oz. per acre and use at least 4 fl. oz. of emulsified vegetable or paraffinic crop oil per acre. Use at least 2 parts of water for each part of oil. For low volume and ULV applications, make sure the boom is filled with spray mixture containing the correct concentration of DIMILIN 2L before the first application begins.

GROUND APPLICATION: Apply in 5 to 20 gallons of water per acre. Include 1 pt. to 2 qts. of emulsified vegetable or paraffinic crop oil if conditions are favorable for water evaporation.

TIMING OF APPLICATION: Applications may be made anytime after eggs begin to hatch. For optimum results, applications should be made when the majority of the nymphs have reached the 2nd to 3rd instar stage of development. DIMILIN 2L remains active on the foliage and will continue to control grasshoppers/Mormon crickets that hatch later in the season. DIMILIN 2L is not effective in controlling grasshoppers/Mormon crickets once they have reached the adult stage. Since it is an insect growth regulator, effects of DIMILIN 2L may not be seen until 3 to 10 days after treatment.

***REDUCED AREA AND AGENT TREATMENTS (RAATs):** A RAATs application is an IPM strategy that takes advantage of grasshopper movement and conservation biological control to allow DIMILIN 2L to be applied on a reduced treated area and at reduced rates, while sustaining acceptable grasshopper/Mormon cricket control. RAATs

may provide ranchers with an economic means to reduce grasshopper competition on their rangeland, depending on insect age and plant canopy. Using this program Dimilin 2L may be applied on as little as 50% of the infested acreage (e.g. skipping a 100 ft. swath for every 100 ft. treated), up to 100% infested acreage. Apply 0.75 to 1 fl. oz. Dimilin 2L per treated acre. The rate to use per acre and amount of area treated will depend on grasshopper/Mormon cricket age, plant canopy and topography. Skip up to 50% of the infested area and use the lower rate under uniform topography with early instar ages and sparse vegetation. If the majority of the population is late instars, vegetation is dense, terrain is considered rough, and conditions are hot during treatment, then the coverage and rate of Dimilin 2L should be increased up to a blanket (100%) coverage with 1 fl. oz. per acre. Refer to application methods and oil requirement conditions in Aerial Applications section above.

NON-CROP AREAS

[Field border, fence rows, roadsides, farmsteads, Conservation Reserve Program (CRP) land]

GRASSHOPPERS/MORMON CRICKETS: Apply 1.0 fl. oz. DIMILIN 2L per acre to manage grasshoppers/Mormon crickets in their breeding areas before they move into cropland. See RANGELAND section for timing of application.

AERIAL APPLICATION: Apply in 1 to 5 gallons of water per acre (Note oil requirement condition above).

GROUND APPLICATION: Apply in 5 to 30 gallons of water per acre. (Note oil requirement condition above).

USE RESTRICTIONS FOR GRASSHOPPERS/MORMON CRICKETS IN BOTH RANGELAND AND NON-CROP AREAS:

- Do not exceed a total of 1.0 fl. oz. DIMILIN 2L per acre per year.
- Do not make more than 2 applications of DIMILIN 2L per year.

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

MODE OF ACTION: DIMILIN affects the formation and/or deposition of chitin in the insect's exoskeleton (cuticle, exuvia). Chitin is a polysaccharide occurring mainly in the exoskeleton. When a larva/nymph is exposed to DIMILIN, the exoskeleton at molting is weakened and the larva/nymph is unable to successfully molt. If an adult female grasshopper consumes DIMILIN, the eggs she lays may not hatch (transovarial activity). Besides a fatal incomplete molting, grasshoppers may exhibit missing posterior legs, hernias, abdominal segments malformed, twisted antennae, hemolymph exudation, and wrinkled wings. Additionally, they may move slower, have limited jumps and unsteady landings, show a reduction in feeding, have atrophy of posterior legs or be unable to fly. Any nymph/adult possessing these symptoms is likely more susceptible to predatory insects. DIMILIN has been shown not to impact adult populations of various ground dwelling and flying non-target arthropods in a rangeland ecosystem.

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