

279-2876

12/15/1997

1/8

Please read instructions on reverse before completing form.

Form Approved, OMB No. 2070-0060. Approval expires 2-28-95



United States
Environmental Protection Agency
Washington, DC 20460

Registration
 Amendment
 Other

OPP Identifier Number
259759

Application for Pesticide - Section I

1. Company/Product Number FMC Corporation/279-2876	2. EPA Product Manager Betty Haerber <u>T. LEVINE</u>	3. Proposed Classification <input type="checkbox"/> None <input checked="" type="checkbox"/> Restricted
4. Company/Product (Name) FMC Corporation/Furadan 4F Insecticide-Nematicide	PM# <u>Insecticide Team 04</u> (Formerly Teams 14/19)	
5. Name and Address of Applicant (Include ZIP Code) FMC Corporation Agricultural Products Group 1735 Market Street Philadelphia, PA 19103 <input type="checkbox"/> Check if this is a new address Attn: D. Carlson	6. Expedited Review. In accordance with FIFRA Section 3(c)(3)(b)(i), my product is similar or identical in composition and labeling to: EPA Reg. No. _____ Product Name _____	

Section - II

<input type="checkbox"/> Amendment - Explain below.	<input type="checkbox"/> Final printed labels in response to Agency letter dated _____	NOTIFICATION DEC 15 1997
<input type="checkbox"/> Resubmission in response to Agency letter dated _____	<input type="checkbox"/> "Me Too" Application.	
<input checked="" type="checkbox"/> Notification - Explain below.	<input type="checkbox"/> Other - Explain below.	

Explanation: Use additional page(s) if necessary. (For section I and Section II.)
Notification of change to storage directions in "Storage and Disposal" section in accordance with PR Notices 95-2, II.7 ("Storage and Disposal Statement") and 83-3 I.A. ("Storage Instructions").

Section - III

1. Material This Product Will Be Packaged In:				2. Type of Container	
Child-Resistant Packaging <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Unit Packaging <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Water Soluble Packaging <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input checked="" type="checkbox"/> Metal <input type="checkbox"/> Plastic <input type="checkbox"/> Glass <input type="checkbox"/> Paper <input type="checkbox"/> Other (Specify) _____	
* Certification must submitted		If "Yes" Unit Packaging wgt. 2.5	No. per container 2	If "Yes" Package wgt	No. per container
3. Location of Net Contents Information <input type="checkbox"/> Label <input type="checkbox"/> Container		4. Size(s) Retail Container 2.5 gal, 15 gal, 90 gal, 110 gal		5. Location of Label Directions <input checked="" type="checkbox"/> Supplemental label packet	
6. Manner in Which Label is Affixed to Product <input checked="" type="checkbox"/> Lithograph <input type="checkbox"/> Paper glued <input type="checkbox"/> Stenciled		Other <u>plastic sleeve</u>			

Section - IV

1. Contact Point (Complete items directly below for identification of individual to be contacted, if necessary, to process this application.)		
Name Don Carlson	Title Product Development and Registration Manager	Telephone No. (Include Area Code) 215-299-6436
Certification I certify that the statements I have made on this form and all attachments thereto are true, accurate and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law.		6. Date Application Received (Stamped)
2. Signature 	3. Title Product Development and Registration Manager	
4. Typed Name Don Carlson	5. Date 12/10/97	

December 10, 1997

Ms. Betty Haerberer
Office of Pesticide Programs (H7505C)
Document Processing Desk, Rm. 266A
U.S. Environmental Protection Agency
Crystal Mall Building #2
1921 Jefferson Davis Highway
Arlington, VA 22202

Dear Ms. Haerberer:

Subject: Furadan 4F Insecticide-Nematicide, EPA Reg. No. 279-2876
Notification of Change to Storage Directions in Storage and Disposal Section

FMC Corporation, Agricultural Products Group is herewith submitting a notification of a change to the storage directions for Furadan 4F Insecticide-Nematicide.

FMC has tested and evaluated typical Furadan 4 Flowable commercial produced material subjected to repeated freeze/thaw cycles and noted no adverse impact on physical properties. Accordingly, the product has been demonstrated to be freeze/thaw stable. With this in mind we are amending our current storage directions to remove the statement "Do not store below 35°F, (2°C)" and replace it with the following:

"Furadan 4F is freeze/thaw stable. If frozen, thaw and agitate before reuse. To keep the product from freezing, store above 32°F."

Enclosed in support of this submission are the following:

- Completed EPA Form 8570-1, Notification
- Five copies of draft labeling with the noted change. For reviewing convenience we have enclosed one extra copy with the change hi-lited.

Please return one stamped approved copy for our file records.

This notification is consistent with the provisions of PR Notice 95-2 and EPA regulations at 40 CFR 152.46, and no other changes have been made to the labeling or the confidential statement of formula of this product. I understand that it is a violation of 18 U.S.C. Sec. 1001 to willfully make any false statement to EPA. I further understand that

Ms. Betty Haerberer
December 10, 1997
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if this notification is not consistent with the terms of PR Notice 95-2 and 40 CFR 152.46, this product may be in violation of FIFRA and I may be subject to enforcement action and penalties under sections 12 and 14 of FIFRA.

Should you have any questions relative to this submission please contact me (215-299-6436).

Sincerely,

A handwritten signature in black ink, appearing to read "Don Carlson". The signature is written in a cursive style with a large, sweeping initial "D".

Don Carlson, PhD
Product Development
and Registrations

Code 279

RESTRICTED USE PESTICIDE

Due to acute oral and inhalation toxicity. For retail sale to and application only by certified applicators or personnel under their direct supervision.

Net Contents

Furadan® 4f insecticide/nematicide

EPA Reg. No. 279-2876

EPA Est. 279-

Active Ingredient:

*Carbofuran	44.0%
Inert Ingredients:	56.0%
	100.0%

*2,3-Dihydro-2,2-dimethyl-7-benzofuranyl(methyl)carbamate.

This product contains 4 lbs. of carbofuran per gallon.

KEEP OUT OF REACH OF CHILDREN

 **DANGER-POISON** 

PELIGRO

See Other Panels for Additional Precautionary Information.

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

NOTIFICATION

DEC 15 1997



FMC Corporation
Agricultural Products Group
Philadelphia PA 19103

11/97 draft

STATEMENT OF PRACTICAL TREATMENT

If swallowed: Drink 1 or 2 glasses of water and induce vomiting by touching back of throat with finger. Do not induce vomiting or give anything by mouth to an unconscious person. Get medical attention.

If inhaled: Remove to fresh air. Call a physician immediately.

If in eyes: Flush with plenty of water for at least 15 minutes. Get medical attention.

If on skin: Wash skin immediately with soap and water.

Antidote

Note to Physician: Carbofuran is an N-methyl carbamate and a reversible cholinesterase inhibitor. Do not use oximes such as 2-PAM. Start by giving 2 mg. atropine intramuscularly. According to clinical response, continue until signs of atropinization occur (dry mouth or dilated pupils). If in eye, instill one drop of homatropine.

For Emergency Assistance Call (800) 331-3148.

PRECAUTIONARY STATEMENTS

Hazards to Humans (and Domestic Animals)

Danger

Poisonous if swallowed or inhaled. May be fatal or harmful as a result of skin or eye contact or by breathing spray mist. Causes cholinesterase inhibition. Warning symptoms of poisoning include weakness, headache, sweating, nausea, vomiting, diarrhea, tightness in chest, blurred vision, pinpoint eye pupils, abnormal flow of saliva, abdominal cramps, and unconsciousness. Atropine sulfate is antidotal.

Personal Protective Equipment:

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

Applicators and other handlers must wear: Long-sleeved shirt and long pants; Chemical-resistant gloves; such as Barrier Laminate or Butyl Rubber, or Nitrile Rubber or Neoprene Rubber or Polyvinyl Chloride or Viton; Shoes plus socks; Protective eyewear when mixing or loading, when performing maintenance or repairs (such as repairing/replacing hoses, cleaning, replacing or unplugging nozzles) on contaminated equipment or equipment containing residual carbofuran, or when cleaning the equipment or vehicle containing, or contaminated with carbofuran. For exposure in enclosed areas: A respirator with either an organic vapor-removing cartridge with a prefilter approved for pesticides (MSHA/NIOSH approval number prefix TC-23C), or a canister approved for pesticides (MSHA/NIOSH approval number prefix TC-14G); For exposures outdoors: Dust/mist filtering respirator (MSHA/NIOSH approval number prefix TC-21C).

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

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. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

Environmental Hazards

This product is toxic to fish, birds and other wildlife. Birds feeding on treated areas may be killed. For waterfowl protection, do not apply immediately before or during irrigation, or on fields in proximity of waterfowl nesting areas, or on fields where waterfowl are known to repeatedly feed. Drift and runoff from treated areas may be hazardous to fish in neighboring areas. Do not dispose of equipment washwater or rinsate in streams, lakes or other surface water bodies. Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark.

USE OF THIS PRODUCT FOR BAITING OR IN BAIT STATIONS IS STRICTLY PROHIBITED AND CAN RESULT IN CRIMINAL AND CIVIL PENALTIES UNDER FEDERAL LAW. The maximum fine for misuse by custom applicators under FIFRA is \$25,000. However, fines may also be levied under other statutes.

Notice: It is a federal offense to use any pesticide in a manner that results in the death of a member of an endangered species. The use of Furadan® 4F insecticide-nematicide may pose a hazard to Federally designated endangered/threatened species. Suggested measures to protect endangered species in your county may exist in an EPA "Interim Measures" pamphlet. You may call EPA's Endangered Species Hotline, 1-800-447-3813 to find out if an "Interim Measures" pamphlet exists for your county and have one sent to you. You also can consult your local county extension office or pesticide state lead agency to determine whether they have imposed any requirements in your area to protect endangered and threatened species.

This product is highly toxic to bees exposed to direct treatment or residues on crops. Do not apply this product or allow it to drift to blooming crops or weeds if bees are visiting the treatment area. Protective information may be obtained from your Cooperative Agricultural Extension Service.

Carbofuran is a chemical which can travel (seep or leach) through soil and can contaminate groundwater which may be used as drinking water. Carbofuran has been found in groundwater as a result of agricultural use. Users are advised not to apply carbofuran where the water table (groundwater) is close to the surface and where the soils are very permeable, i.e., well-drained soils such as loamy sands. Your local agricultural agencies can provide further information on the type of soil in your area and the location of groundwater.

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.

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

Do not use this product on Long Island, N.Y.

AGRICULTURAL USE REQUIREMENTS

Use this product in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. The Standard contains requirements for 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 contains specific instructions and exceptions pertaining to statements on the label about personal protective equipment (PPE), notification to workers, and restricted-entry interval. Requirements in this box only apply to uses of the product covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during restricted entry interval (REI) of 48 hours (except for foliar application to corn, sunflowers, or sorghum). After foliar application on corn, sunflowers, and sorghum, do not enter or allow worker entry into treated area during restricted entry interval (REI) of 14 days. Exception: for last 12 days of REI, workers may enter treated area to perform hand labor or other tasks involving contact with anything that has been treated, such as plants, soil, or water, without time limit, if they wear early entry personal protective equipment listed below.

PPE required for early entry to treated areas permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is: Coveralls, Chemical-resistant gloves, such as Barrier Laminate or Butyl Rubber, or Nitrile Rubber or Neoprene Rubber or Polyvinyl Chloride or Viton, and Shoes plus socks.

Notify workers of application by warning them orally and by posting warning signs at entrances to treated areas.

STORAGE AND DISPOSAL

Pesticide Storage

Not for use or storage in or around the house.

Furadan 4F is freeze/thaw stable. If frozen, thaw and agitate before reuse. To keep the product from freezing, store above 32°F.

Keep out of reach of children and animals. Store in original containers. Store in cool, dry place and avoid excess heat. Carefully open container. After partial use, replace lid and close tightly. Do not put concentrate or dilute material into food or drink containers. Do not contaminate other pesticide, fertilizer, water, food, or feed by storage or disposal.

Bulk holding containers used for Furadan 4F, and associated equipment (pumps, meters, hoses, etc.), should be thoroughly rinsed to avoid cross contamination with materials subsequently introduced into bulk system. Begin by draining remaining product from tank and equipment and storing in approved appropriately labeled containers. Thoroughly rinse inside of tank and cycle rinsate through pump and metering system, repeating rinsing and cycling procedure at least three times. Refer to Pesticide Disposal statement for disposal of rinsate.

In case of spill, avoid contact, isolate area and keep out animals and unprotected persons. Confine spill. Call FMC: 800-331-3148. To confine spill: Dike surrounding area or absorb with sand, cat litter or commercial clay. Place damaged package in holding container. Identify content.

Pesticide Disposal

Wastes associated with this pesticide are acute hazardous waste and must be handled and disposed of in accordance with local, state and federal regulation. Improper disposal of excess pesticide, spray mixture, containers or rinsate is a violation of federal law. If these materials are generated and must be disposed, or if product cannot be used according to label instructions or cannot be returned and must be disposed, contact State Environmental Control Agency or Hazardous Waste representative at nearest EPA Regional Office for disposal guidance.

Container Disposal

Non-returnable Plastic or Metal Containers: If not triple rinsed to remove product, empty Furadan pesticide containers are acute hazardous wastes and must be disposed of in accordance with local, state and federal regulation. Improper disposal of empty pesticide containers or rinsate is a violation of Federal Law. Triple rinse containers. Dispose of rinsate as stated in Pesticide Disposal above. Offer triple rinsed containers for recycle or reconditioning, or puncture triple rinsed containers and incinerate or contact State Environmental Control Agency or Hazardous Waste representative at nearest EPA Regional Office for disposal guidance. DO NOT cut or weld metal containers.

Returnable/Refillable Sealed Container: Do not break seals or add any material to the containers. Do not rinse container or empty remaining product. Return the container intact to point of purchase. Contact point of purchase before returning containers. If seal is broken, container is damaged or material has been added to the container, contact the point of purchase for handling/disposal information.

GENERAL INSTRUCTIONS

Rotational Crops

Do not plant with any crop other than alfalfa, artichokes, bananas, barley, coffee, corn (field, pop or sweet), cotton, cranberries, cucurbits (cucumbers, melons, pumpkins, squash), flax, grapes, non-bearing fruit, oats, ornamentals, peanuts, peppers, potatoes, rice, seed crops (Bermuda-grass, spinach), sorghum, strawberries, soybeans, sugar beets, sugarcane, sunflowers, tobacco, or wheat for at least 10 months following use of this product.

Do not rotate with any crop on soil treated at greater than 3.0 pounds active ingredient per acre for at least 10 months.

Soil Application Precautions

For standard planters and applications systems, do not start insecticide application until planter enters the soil, and stop insecticide application before pulling planter out of the soil. If contaminated seed is exposed to the surface cover completely with soil.

For standard planters equipped with in-furrow systems having automatic shut-off systems (e.g., Custom Delivery Systems (CDS), Custom Injection Systems (CIS)) be sure shut-off devices are maintained and operating properly.

DO NOT FLUSH, DRAIN OR PUMP TANK, LINES OR RINSATE ON NON-CROPLAND SURFACES. Dispose of residual spray mixture left in tank, line(s) and/or rinsate from first flushing of tank and line(s) by application to cropland as directed on this label.

Spray Drift Management

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

AVOIDING SPRAY DRIFT IS THE RESPONSIBILITY OF THE APPLICATOR.

Importance of Droplet Size

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

Controlling Droplet Size - General Techniques

- **Volume** - Use high flow rate nozzles to apply the highest spray volume. Nozzles with higher rated flows produce larger droplets.
- **Pressure** - Use the lower spray pressures recommended for the nozzle. Higher pressure reduces droplet size. WHEN HIGHER FLOW RATES ARE NEEDED, USE A HIGHER-CAPACITY NOZZLE INSTEAD OF INCREASING PRESSURE.
- **Nozzle Type** - Use a nozzle type that is designed for the intended application. Consider using low-drift nozzles.

Controlling Droplet Size - Aircraft

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

Boom Height

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

Wind

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

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

Temperature and Humidity

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

Temperature Inversions

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

Sensitive Areas

Risk of exposure to adjacent areas that are known habitat for threatened or endangered species can be reduced by avoiding applications when wind direction is toward the sensitive area.

Crop Use Recommendations

Alfalfa:

Insects Controlled	Rate of Application	Method of Application
For control of Grasshoppers	1/4 to 1/2 pint per acre	Apply as a foliar spray when insect populations and/or damage reaches economic thresholds, refer to Cooperative Extension Pest Management Guidelines. Minimum gallonage requirements. Ten gallons of finished spray per acre with ground equipment, two gallons per acre with aircraft.
For control of Alfalfa Blotch Leafminer and Potato Leafhopper	1 to 2 pints per acre	
For control of Blue Alfalfa Aphid (nymphs and wingless adults)	1/2 to 1 pint per acre	Apply as a foliar spray when insect populations and/or damage reaches economic thresholds, refer to Cooperative Extension Pest Management Guidelines. Use 30 gallons of finished spray per acre with ground equipment, 5 gallons per acre with aircraft.
For control of Alfalfa Weevil Adult	1 to 2 pints per acre	Apply as a foliar spray when insect populations and/or damage reaches economic thresholds, refer to Cooperative Extension Pest Management Guidelines. On short alfalfa early in the season, or on stubble following cutting that cannot be checked with a sweep net, treatment is indicated when growth is retarded because of weevil feeding. Minimum gallonage requirements. Ten gallons of finished spray per acre with ground equipment, two gallons per acre with aircraft.
For control of Alfalfa Weevil Larvae, Egyptian Alfalfa Weevil, Pea Aphid and in N.Y. State for Snout Beetle	1/2 to 2 pints per acre	
For control of Lygus Bugs	2 pints per acre	Apply prior to bloom.

Do not make more than one application per season. Apply only to fields planted to pure stands of alfalfa. Do not move bees to alfalfa fields within 7 days of application. For waterfowl protection do not apply on fields in proximity of waterfowl nesting areas and/or fields where waterfowl are known to repeatedly feed. Observe the indicated number of days after application before cutting or grazing.

Pints of Furadan 4F Per Acre	Do not cut or graze within
1/2	7 days
1	14 days
2	28 days

Cotton: Thrips—Use Furadan 4F at 2.5 fluid ounces per 1,000 linear feet of row (1 quart per acre with 40 inch row spacing). Apply in the seed furrow at planting. Furadan 4F may be mixed with water or liquid fertilizer. When Furadan 4F is used with liquid fertilizers, premix one part of Furadan 4F with two parts of water. Check physical compatibility before mixing large quantities. Add this premix to the tank of fertilizer along with the rinsings from the premixing container. Maintain agitation in the tank after mixing and during application. Do not mix until ready to use. Observe all precautions listed in the Soil Application Precautions Section. Do not feed cotton forage.

Field Corn, Popcorn, Sweet Corn—At Planting: Corn Rootworms, Flea Beetles and to aid in the control of first generation European Corn Borer—Use 2.5 fluid ounces of Furadan 4F per 1,000 linear feet of row (1 quart per acre with 40 inch row spacing). Apply at planting, as a 7 inch band over the row or inject on each side of the row by mixing with water or liquid fertilizers.

Corn Rootworms, Flea Beetles, Seedcorn Maggot, Wireworms, and to aid in the control of first generation European Corn Borer and Armyworm for approximately 4 to 6 weeks after planting—Use 2.5 fluid ounces of Furadan 4F insecticide-nematicide per 1,000 linear feet of row (1 quart per acre with 40 inch row spacing). Apply at planting directly into the seed furrow.

Furadan 4F may be mixed with water or liquid fertilizers. If Furadan 4F is used with liquid fertilizers, premix one part of Furadan 4F with two parts of water. Check physical compatibility before mixing large quantities. Add this premix to the tank of fertilizer along with the rinsings from the premixing container. Maintain agitation in the tank after mixing and during application. Do not mix until ready to use. Observe all precautions listed in the Soil Application Precautions Section. Do not feed forage within 30 days of last application.

Field Corn, Popcorn—Post Plant: Corn rootworms (northern, southern and western)—Use 2.5 fluid ounces of Furadan 4F per 1,000 linear feet of row (1 quart per acre with 40 inch row spacing). Apply as a post emergent spray by banding over the row, or by side dressing or basal spraying both sides of the row after corn emerges. Control will generally be improved if the treatment is cultivated into the soil. Observe all precautions listed in the Soil Application Precautions Section. Do not feed forage within 30 days of last application.

Field Corn—Foliar Application
European Corn Borer—Use 1½ to 2 pints of Furadan 4F per acre as a foliar spray. Follow moth trap detections to assure timely monitoring for egg masses and proper initiation of treatments. Refer to Cooperative Extension Pest Management Guidelines. Use the higher rate for heavier pest infestations. For treatment with aerial equipment apply as a broadcast spray using a minimum of 1 gallon of finished spray per acre. For treatment with ground equipment, direct the spray into the corn whorl for first brood and into the ear zone for second brood, using a minimum of 10 gallons of finished spray per acre. Observe all precautions listed below.

Southwestern Corn Borer—Use Furadan 4F at 1 to 2 pints per acre as a broadcast foliar spray. Follow moth trap detections to assure timely monitoring for egg masses and proper initiation of treatments. Refer to Cooperative Extension Pest Management Guidelines. Rate used will depend on desired residual activity. If infestation continues, retreat in 7 days after a 1 pint application and within 14 days after a 2 pint application. Apply in sufficient water for thorough coverage using a minimum of 1 gallon of finished spray per acre with air equipment or 10 gallons of finished spray per acre with ground equipment. Observe all precautions listed below.

Banks Grass Mites (suppression)—Furadan 4F when applied at 2 pints per acre for the control of European or Southwestern Corn Borers will also suppress Banks Grass Mites.

Grasshoppers—Apply Furadan 4F as a foliar spray at ¼ to ½ pint per acre when insect populations and/or damage reaches economic thresholds. Refer to Cooperative Extension Pest Management Guidelines.

--Use the ¼ pint rate under light to moderate population levels (0 to 14 grasshoppers per sq. yd.).

—Use the ½ pint rate under more severe population levels (15 or more grasshoppers per sq. yd.).

Apply in sufficient water for thorough coverage using a minimum of 2 gallons of finished spray per acre with air equipment or 10 gallons of finished spray per acre with ground equipment. Observe all precautions listed below.

Do not make more than two foliar applications per season or more than one foliar application if Furadan 4F was used as a soil application pest control treatment. Do not forage cut or harvest within 30 days of last application. Do not use Furadan 4F as a foliar treatment on seed corn.

Sweet Corn—Foliar Application (Machine Harvested Only): European Corn Borer—For control of second generation borers apply 1 pint of Furadan 4F per acre. Follow moth trap detections to assure timely monitoring for egg masses and proper initiation of treatments. Refer to Cooperative Extension and/or Processor Pest Management Guidelines. Do not make more than two (2) foliar applications per season or more than one foliar application if Furadan 4F was used as a soil application pest control treatment. Do not apply within seven (7) days of harvest. If prolonged, intimate contact will result do not reenter treated field within 14 days of application without wearing proper protective clothing. Do not graze or harvest stalks within 21 days of last application.

Minimum gallonage requirements: 10 gallons of finished spray per acre with ground equipment, 2 gallons per acre with aircraft.

Grapes (For use in California): Nematodes (Root Knot and Dagger) and Grape Phylloxera—Apply Furadan 4F insecticide-nematicide at 2½ gallons per acre as a broadcast treatment only to the soil surface between the vine rows and immediately incorporate by mechanical means. Do not apply within 200 days of harvest. Remove dense weed growth prior to treatment. Do not use on soils of pH 8.0 or greater. Do not make more than one application per crop year.

Ornamentals—Container Grown

Root Weevil Larvae—Prepare a stock solution by thoroughly mixing 1 to 2 fluid ounces of Furadan 4F per 100 gallons of water. Apply as a soil drench in sufficient volume to saturate the entire soil profile within each container. The following guidelines give approximate amounts to use on various sized containers. Make a single application when larvae are present (usually from July to mid-October in outdoor growing areas). Later application may be less effective due to lower temperatures and/or the presence of more mature larvae.

Container Size	Amount of Stock Solution Per Container
6 inches diameter	1 pint
8 inches diameter	1 to 2 pints
10 inches diameter	2 to 4 pints
12 inches diameter	3 to 6 pints
16 inches diameter	4 to 8 pints

Early marginal necrosis or leaf drop may occur on Hydrangea or Birch. Not all species or varieties of ornamentals have been tested. Before treating large numbers of plants of a particular variety, treat a few plants and observe prior to full scale application.

Application of Furadan 4F through overhead sprinkler equipment is prohibited

Pine Seedlings: Pales Weevil and Pitch-Eating Weevil in pine plantations—Apply a 1% (W/W) active Furadan clay slurry (see following for preparation) to the roots of pine seedlings prior to transplanting. Treat seedlings by dipping roots or use any other suitable means which allows thorough coating. Keep roots moist until transplanted. Prepare the slurry as follows: Add 1.6 ounces (2½ tablespoons) of Furadan 4F to ½ gallon of water. Mix thoroughly. Add 2 pounds of pulverized kaolin clay (pH 4.5) to this suspension. Mix thoroughly. This is sufficient to treat the roots of 150 to 200 seedlings. Adequate ventilation is required for indoor treatment.

Potatoes: Potato Tuberworm (Virginia only); Colorado Potato Beetle, European Corn Borer, Potato Flea Beetle, Potato Leafhopper—Use 1 to 2 pints of Furadan 4F in sufficient water to treat one acre. Apply as a foliar spray when insect populations and/or damage reaches economic thresholds, refer to Cooperative Extension Pest Management Guidelines. Do not make more than 3 foliar applications per season. Do not apply more than 2 pints per application. Do not apply within 14 days of harvest. Minimum gallonage requirements: 10 gallons of finished spray per acre with ground equipment and 3 gallons per acre with aircraft.

Do not use this product on Long Island, New York.

For waterfowl protection do not apply:

- Immediately before or during furrow irrigation
- on fields in proximity of waterfowl nesting areas
- on fields where waterfowl are known to repeatedly feed

Small Grains (Wheat, Oats, Barley): Grasshoppers—Use Furadan 4F at ¼ to ½ pint per acre. Apply as a foliar spray when insect populations and/or damage reaches economic thresholds, refer to Cooperative Extension Pest Management Guidelines. Apply before heads emerge from boot. Do not make more than two applications per season. Do not feed treated forage to livestock.

Minimum gallonage requirements: Ten gallons of finished spray per acre with ground equipment two gallons per acre with aircraft.

For waterfowl protection do not apply on fields in proximity of waterfowl nesting areas and/or on fields where waterfowl are known to repeatedly feed.

Soybeans: Grasshoppers—Use Furadan 4F at ¼ to ½ pint per acre. Apply as a foliar spray when insect populations and/or damage reaches economic thresholds, refer to Cooperative Extension Pest Management Guidelines. Do not make more than 2 foliar applications per season. Do not apply within 21 days of harvest. Do not graze or feed foliar-treated forage to livestock or cut for silage or hay. Minimum gallonage requirements: 20 gallons of finished spray per acre with ground equipment, 1½ gallons per acre with aircraft.

Sugarcane: Sugarcane Borer—Apply 1 to 1½ pints Furadan 4F per acre as a foliar spray using ground or aerial equipment. Check sugarcane fields weekly, beginning in early June and continuing through August. Make first application only after visible joints form and 5% or more of the plants are infested with young larvae feeding in or under the leaf sheath and which have not bored into the stalks. Repeat when field checks indicate the infestation exceeds 5%. Refer to Cooperative Extension Pest Management Guidelines for other area specific treatment criteria. Do not make more than two (2) foliar applications. Do not apply within 17 days of harvest. Do not use in Hawaii.

Sunflowers (Confectionary and Oil)—At Planting

Sunflower Stem Weevil, Sunflower Beetle, Grasshoppers—Use 2.5 fluid ounces of Furadan 4F per 1000 linear feet of row (1.4 quarts per acre with 30 inch row spacing). Apply directly into the seed furrow. Furadan 4F may be mixed with water or liquid fertilizer. When Furadan 4F is used with liquid fertilizers, premix one part of Furadan 4F with two parts of water. Check physical compatibility before mixing large quantities. Add this premix to the tank of fertilizer along with the rinsings from the premixing container. Maintain agitation in the tank after mixing and during application. Do not mix until ready to use. Observe all precautions listed in the Soil Application Precautions Section.

Sunflowers (Confectionary and Oil)—Foliar Application

Sunflower Moth, Banded Sunflower Moth, Stem Weevils, Seed Weevils—Use Furadan 4F at 1 pint per acre. **Grasshoppers**—Use Furadan 4F at ¼ to ½ pint per acre. **Sunflower Beetle**—Use Furadan 4F at ¼ to ½ pint per acre. Apply as a foliar spray when insect populations and/or damage reaches economic thresholds, refer to Cooperative Extension Pest Management Guidelines. Apply prior to bloom. When a rate range is indicated, use higher rate for heavier insect infestations. Do not make more than two (2) foliar applications per season. Apply a minimum of two gallons of finished spray per acre with aircraft and 10 gallons by ground equipment. Do not harvest crop within 28 days of last application.

Tobacco—Burley: Flea Beetles—Use 1 gallon of Furadan 4F per acre. Apply as a broadcast spray over the soil surface prior to transplanting and incorporate into the top 3 inches of soil with a suitable device. Observe the following soil application precaution: DO NOT FLUSH, DRAIN OR PUMP TANK, LINES OR RINSATE ON NON-CROPLAND SURFACES. Dispose of residual spray mixture left in tank, line(s) and/or rinsate from first flushing of tank and line(s) by application to cropland as directed on this label.

Tobacco—Flue-Cured: Flea Beetles, Wireworms, and to aid in the control of Budworms and Root Knot Nematodes—Use 1½ gallons of Furadan 4F per acre—OR—Use 1 gallon of Furadan 4F per acre for control of Flea Beetles only. Apply as a broadcast spray over the soil surface prior to forming beds. Incorporate into the top 3 inches of soil. Form beds and plant as usual. This product may induce flecking of the bottom or lower leaves. Observe the soil application precaution noted above under Tobacco-Burley.

Dealers Should Sell in Original Packages Only.

Terms of Sale or Use: On purchase of this product buyer and user agree to the following conditions:

Warranty: FMC makes no warranty, expressed or implied, concerning the use of this product other than indicated on the label. Except as so warranted, the product is sold as is. Buyer and user assume all risk of use and/or handling and/or storage of this material when such use and/or handling and/or storage is contrary to label instructions.

Directions and Recommendations: Follow directions carefully. Timing and method of application, weather and crop conditions, mixture with other chemicals not specifically recommended and other influencing factors in the use of this product are beyond the control of the seller and are assumed by the buyer at his own risk.

Use of Product: FMC's recommendations for the use of this product are based upon tests believed to be reliable. The use of this product being beyond the control of the manufacturer, no guarantee, expressed or implied, is made as to the effects of such or the results to be obtained if not used in accordance with directions or established safe practice.

Damages: Buyer's or user's exclusive remedy for damages for breach of warranty or negligence shall be limited to direct damages not exceeding the purchase price paid and shall not include incidental or consequential damages.

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