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TO: T. Gardner
Product Manager 17
Registration Division
TS-767

FROM: Samuel Creeger, Chief 
Review Section No. 1
Exposure Assessment Branch
Hazard Evaluation Division

Attached please find the environmental fate review of:

Reg./File No.: 279-3014

Chemical: Permethrin

Type Product: Insecticide

Product Name: Pounce 3.4 EC

Company Name: FMC Corporation

Submission Purpose: Add new use on walnuts

ZBB Code: ?

ACTION CODE: 335

Date in: 8/24/84

EFB # 4547

Date Completed: 10/22/84

TAIS (level II) Days

Deferrals To:

63

1

 Ecological Effects Branch

 Residue Chemistry Branch

 Toxicology Branch

1.0 INTRODUCTION

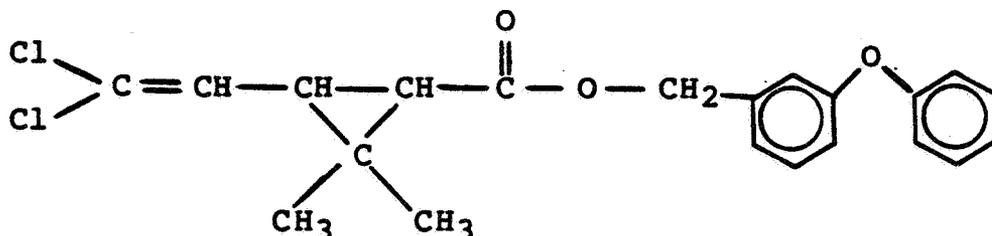
FMC Chemical Co. has submitted an application for the registration of Pounce® 3.2EC Insecticide (permethrin as a. i.) for use on walnuts.

1.1 Chemical

Common name: Permethrin

Chemical name: (3-phenoxyphenyl)methyl (\pm)-cis,trans-3-(2,2-dichloroethenyl)-2,2-dimethyl cyclopropane carboxylate

Chemical structure:



2.0 DIRECTIONS FOR USE

The complete label is attached. Briefly, apply Pounce® 3.2EC at a rate of 8-16 ounces (0.2 to 0.4 lb a. i.) per acre. Do not apply more than 1.6 lbs. ai per acre. per season.

3.0 DISCUSSION OF DATA

No additional data were included in the current submission. Previously submitted data were considered in the review dated 7/31/78 for the registration of Ambush® (permethrin as a. i.) for use on cotton. Also, additional data were considered in reviews dated 5/15/78, 6/9/76, and 4/16/76.

Conclusions of the data were:

Hydrolysis: Permethrin is stable to hydrolysis at expected environmental conditions. At elevated temperature and unlikely pH (>9) the half-life exceeded 50 days. The hydrolysis degradation products are 3-phenoxybenzyl alcohol and cis/trans 3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropanecarboxylic acid (cis/trans-DCVA). Both appear to be stable to further hydrolysis.

Chemical hydrolysis is not expected to be a significant pathway of dissipation of permethrin in the environment.

Photodegradation- Permethrin is unstable to photolysis, but the rate cannot be extrapolated from the data since the experiments were conducted with activators or inhibitors. The photodegradation on soil showed as much unaccountable losses as degradation. Photolysis of separated isomers leads to isomerization, followed by cleavage of the ester linkage yielding 3-phenoxybenzyl alcohol and cis/trans-DCVA. A secondary pathway was also apparent.

Metabolism- Permethrin degrades in soil under laboratory conditions with dependency upon soil type, temperature, and oxygen availability. The rate is slower in soils low in organic matter content (<1.5%) and in soils under anaerobic or flooded conditions. The lack of degradation in sterile soils indicate that the degradation is a function of the presence of soil microorganisms.

The degradation products in soil are primarily 3-phenoxy benzoic acid, 3-phenoxybenzyl alcohol and cis/trans-DCVA. All appeared to be transitory in the soil. It was noted that the cis-isomer of permethrin is generally more stable than the trans-isomer.

Note: It appears the half-life(lives) were presented in the study but not recorded by the reviewer. The reviewer notes that the reported half-life was for permethrin only and did not consider the dissipation of the degradates or non-extractable material. In three sandy clay loam and a loamy sand soils, the half-life estimate indicated that 50% of the applied ^{14}C would be evolved as $^{14}\text{CO}_2$ within 10 weeks. Under waterlogged conditions, $^{14}\text{CO}_2$ evolved less rapidly--approx. 15% in 14 weeks.

Mobility- Permethrin does not leach significantly in soil. Adsorption (K) values were 0.386 for a fine sand soil (1.7% organic matter) to 633 for a clay loam soil (5.2% organic matter). Permethrin is strongly adsorbed to soil with adequate amounts of organic matter. Desorption was not investigated.

The reviewer concluded the degradates of permethrin are somewhat more leachable than the parent compound but do not appear to be a problem. Slower degradation in coarse soils may lead to more leaching of residues. Runoff of permethrin has been shown to be a problem and was probably due to physical transport of permethrin-adsorbed soil particles by soil erosion.

Field Dissipation- The reviewer concluded that all the submitted field dissipation data are inadequate. The applicant failed to determine the possible presence of degradation products. Also, the difference in apparent rate of dissipation in various soil types as shown in the laboratory metabolism studies has not been verified (or denied) by the field data.

Accumulation: Catfish, in a static accumulation study, had a maximum bioaccumulation factor of 12-13X (muscle tissue) and 147X (viscera) reached over a period of 10 days and 14 days exposure, respectively, then declined afterward. During the 14 day depuration period, there was a 66% decline in residues in muscle tissue and 90% decline in viscera.

In a dynamic study flow-through using both catfish and bluegill sunfish, the maximum bioaccumulation factors were 21X and 715X for residues in bluegill edible and non-edible tissue, respectively, after 21 to 28 days exposure. In catfish, the maximum bioaccumulation factors were 91 and 703 in edible and non-edible tissues, respectively, after 28 days exposure. During the 14 day depuration period, residues declined 92 and 97% in bluegill edible and non-edible tissues, respectively. In catfish, residues declined 64 and 84% in edible and non-edible tissues, respectively, during the depuration period.

In another study, it was noted that the female fathead minnow accumulated significantly more permethrin residues than the males in the non-edible tissues. The possibility of reproductive problems in fish may be of concern.

The reviewer concluded that the extremely low water solubility of FMC 33297 (permethrin) could lead to accumulation hazard in fish. The chemical identity of the residues in fish was not examined.

Rotational crops- The laboratory study showed that after four months (longest period tested) residues were still present in rotated crops. The field rotational crop study did not identify a time interval at which subsequent crops will not contain permethrin residues. The analytical method was found inadequate for determining permethrin and its degradates in field rotational crop samples.

4.0 RECOMMENDATION

- 4.1 Adequate data are not available to define the environmental fate of Pounce® 3.2EC (permethrin) for the proposed use on walnuts.
- 4.2 The field dissipation studies are deficient in that soil was not analyzed for residues of the degradation products, namely 3-phenoxybenzoic acid and cis/trans-DCVA. These data are now needed to support registration of additional uses of permethrin even though previous registration applications were approved.
- 4.3 Deficiencies in the rotational crop data are not relevant to the proposed use on walnuts.



Clinton Fletcher
Review Section No. 1
Exposure Assessment Branch
Hazard Evaluation Division

Code 3510

Net Contents

RESTRICTED USE PESTICIDE

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.

Pounce. 3.2 EC

Insecticide

EPA REG. NO. 279-3014

EPA Est., 279-FL-1

ACTIVE INGREDIENTS:

Permethrin 38.4%

INERT INGREDIENTS:*** 61.6%

100.0%

*(3-Phenoxyphenyl) methyl (=) cis-trans 3-(2,2-dichloroethenyl)-2,2-dimethylcyclopropanecarboxylate
**cis/trans ratio: Max. 55% (=) cis and min. 45% (=) trans
***Contains xylene range aromatic solvents.

Contains 3.2 pounds permethrin per gallon.

U.S. Patent No. 4,024,163

KEEP OUT OF REACH OF CHILDREN CAUTION

For Emergency Assistance Call 716-735-3765.

See other panels for additional precautionary information.

FMC.

FMC Corporation
Agricultural Chemical Group
2000 Market Street
Philadelphia Pennsylvania 19103

First Aid:

If in eye: flush eyes with water for 15 minutes. Call a physician.

If swallowed: do not induce vomiting. Call a physician.

If on skin: remove contaminated clothing. Wash with plenty of soap and water. Get medical attention if irritation persists.

Note to Physician: Vomiting should be supervised by a physician or the professional staff because of the possible pulmonary damages by aspiration of the solvent.

PRECAUTIONARY STATEMENTS

Hazards to Humans (& Domestic Animals)

CAUTION

Harmful if swallowed or absorbed through skin. Causes moderate eye irritation. Avoid contact with eyes, skin or clothing. Wash thoroughly after handling. Remove and wash clothing before reuse.

Environmental Hazards

This product is highly toxic to bees exposed to direct treatment or residues on crops or weeds. Do not apply this product or allow it to drift to crops or weeds on which bees are actively foraging. Additional information may be obtained from your Cooperative Extension Service.

This product is extremely toxic to fish. Use with care when applying in areas adjacent to any body of water. Do not apply directly to water. Do not apply when weather conditions favor drift from treated areas. Do not contaminate water by cleaning of equipment, or disposal of wastes.

Physical or Chemical Hazards

Do not use or store near heat or open flame.

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 such a manner as to directly or through drift expose workers or other persons. The area being treated must be vacated by unprotected persons.

Do not enter treated areas without protective clothing until sprays have dried.

Protective clothing means, at least, a hat or other suitable head covering, a long sleeved shirt and long legged trousers or a coverall type garment (all of closely woven fabric covering the body, including the arms and legs), shoes and socks.

Because certain states may require more restrictive reentry intervals for various crops treated with this product, consult your State Department of Agriculture for further information.

Written or oral warnings must be given to workers who are expected to be in a treated area or in an area about to be treated with this product. Inform workers of areas or fields that may not be entered without specific protective clothing, period of time field must be vacated and appropriate actions to take in case of accidental exposure. An example of such information is given under written warnings. When oral warnings are given, warnings shall be given in a language customarily understood by workers. Oral warnings must be given if there is reason to believe that written warnings cannot be understood by workers. Written warnings

CAUTION

Area treated with Pounce 3.2 EC on (insert date). Do not enter without appropriate protective clothing until sprays have dried (insert State Department of Agriculture's re-entry interval, if more restrictive).

In case of accidental exposure to pesticide spray or dust, wash the skin thoroughly with soap and water. Remove contaminated clothing and wash before reuse. If in eyes, flush with plenty of water. If inhaled, go to an area where the pesticide has not been applied. Get medical attention if needed.

STORAGE AND DISPOSAL

Pesticide Storage

Do not store below 10°F, (-12°C).

Do not use or store near heat, open flame or hot surfaces.

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

In case of spill, avoid contact, isolate area and keep out animals and unprotected persons. Confine spills. Call FMC collect: (716) 735-3765.

To confine spill: If liquid, dike surrounding area or absorb with sand, cat litter or commercial clay. If dry material, cover to prevent dispersal. Place damaged package in a holding container. Identify contents.

Pesticide Disposal

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

Container Disposal

Metal Containers: Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities. Do not cut or weld metal containers.

Glass Containers: Triple rinse (or equivalent). Then dispose of in a sanitary landfill or by other approved State and local procedures.

This label must be in the possession of the user at the time of application.

GENERAL INSTRUCTIONS

Pounce 3.2 EC is a 3.2 pounds per gallon formulation of the insecticide permethrin. Apply Pounce when insects appear or feeding is noticed. The higher rate should be used as pest populations increase. Repeat the application as necessary to maintain control. Pounce may be applied by both ground and aerial equipment. Use sufficient water to obtain full coverage. With the exception of crops listed below, rotational crops should not be planted within 60 days of last application.

Almonds: To control Navel Orangeworm, Peach Twig Borer—Use Pounce 3.2 EC at a rate of 8-16 ounces (0.2 to 0.4 pounds active) per acre. Apply when insects appear. Do not make more than two applications during hull split. Do not make more than 5 applications per season. Apply in a minimum of 15 gallons of finished spray per acre by aircraft or 20 gallons of finished spray per acre with ground equipment. Do not apply within seven days of harvest. Do not graze livestock in treated orchards.

Apples: To control Plum Curculio, Redbanded Leafroller, Rosy Apple Aphid, Spotted Tentiform Leafminer, Tarnished Plant Bug, White Apple Leafhopper, Oblique Banded Leafroller and Green Fruitworm—Use Pounce 3.2 EC at a rate of 4-8 ounces (0.1 to 0.2 pounds active) per acre with ground equipment only. Apply in 25 to 400 gallons of finished

spray per acre when insects appear and repeat as required to maintain control. Do not make more than three applications per season. Do not apply after petal fall.

Broccoli, Brussels Sprouts, Cauliflower: To control Beet Armyworm, Cabbage Looper, Imported Cabbageworm and Diamondback Moth—Use Pounce 3.2 EC at a rate of 2 to 4 ounces (0.05 to 0.1 pound active) per acre. Apply in a minimum of 3 gallons of finished spray per acre by aircraft and 20 gallons per acre by ground equipment. Do not make more than 8 applications per season. Do not apply within one day of harvest.

Cabbage: To control Beet Armyworm, Cabbage Looper, Diamondback Moth, and Imported Cabbageworm—Use Pounce 3.2 EC at a rate of 2 to 4 ounces (0.05 to 0.1 pound active) per acre. Apply in a minimum of 1 gallon of finished spray per acre by aircraft and 20 gallons per acre with ground equipment. Do not make more than 10 applications per season. Do not apply within one day of harvest.

Celery: To control Leafminer, Cutworms and Southern Armyworm—Use Pounce 3.2 EC at a rate of 4 to 8 ounces (0.1-0.2 pound active) per acre on a 3 to 5 day schedule, or as needed to maintain control. Apply in a minimum of 5 gallons of finished spray per acre by aircraft and 10 gallons per acre by ground equipment. Do not make more than 10 applications per season in California. Do not apply within 3 days of harvest. Do not graze celery forage nor feed trimmings from treated fields to livestock.

Chrysanthemums (Greenhouse): For control of *Liriomyza* Leafminer flies, use Pounce 3.2 EC at a rate of 20 fluid ounces (0.5 pound active) per 100 gallons (1 teaspoon per gallon). Avoid spraying the blooms. Pounce may be applied on a weekly schedule.

Caution: Pounce 3.2 EC is not phytotoxic to the following cultivars: Blaze, Brilliant Ann, Cream, Fire Power, Gay Anne, Icecap, Princess Anne, Purity, Ruston and Sea Foam. Other cultivars may vary in sensitivity and a small number of plants should be treated to determine plant safety prior to commercial use.

Conifers (Container and Field Grown): For control of Nantucket Pine Tip Moth use Pounce 3.2 EC at a rate of 4 to 8 fluid ounces (0.1 to 0.2 pound active) per acre. Pounce may be diluted in a non-volatile vegetable oil or water in a minimum of 1 gallon of finished spray per acre using equipment calibrated to give adequate coverage. Begin application when the adults appear and repeat at 5-7 day intervals or as needed throughout the season.

Cotton: To control Beet Armyworm (California and Arizona only), Bollworm, Cabbage Looper, Cotton Fleahopper, Cotton Leaf Perforator, Cutworm, Lygus Bugs, Pink Bollworm, Tarnished Plant Bug and Tobacco Budworm—Use Pounce 3.2 EC at a rate of 4 to 8 ounces (0.1 to 0.2 pound active) per acre. To control Boll Weevil, alternate Pounce 3.2 EC at 4 ounces (0.1 pound active) per acre with Pounce 3.2 EC at 2 ounces (0.05 pound active) per acre every 3-4 days until control is achieved.

Apply the above rates in a minimum of one gallon of water per acre by aircraft and 5 gallons of water per acre with ground equipment. Pounce 3.2 EC may also be applied using refined non-volatile vegetable oil for control of the above named insects. Pounce 3.2 EC should be diluted with oil and applied in a minimum of one quart total volume/acre using equipment calibrated to give adequate coverage. To control Bollworm and Tobacco Budworm use 2 to 8 ounces (0.05 to 0.2 pounds active) per acre. The 2 ounce rate per acre should be used only when insect infestation levels are light and the cotton is closely scouted before and after application.

To control cutworms—Use Pounce 3.2 EC at a rate of 4 to 8 ounces (0.1 to 0.2 pounds active) per acre. Apply prior to planting or pre-emergent to crop. Use a minimum of 1 gallon of water per acre by aircraft and 5 gallons of water per acre by ground equipment. Pounce 3.2 EC has been found to be effective and compatible in tank mixtures with herbicides and liquid fertilizers.

Do not make more than 15 applications per season. Do not apply within 14 days of harvest. Do not graze or feed cotton forage.

Cotton Tank-Mix: Pounce 3.2 EC Plus Tank Mixtures (all cotton growing states). Mix Pounce 3.2 EC at 4.0 to 8.0 ounces (0.1 to 0.2 pound active) per acre with other insecticides recommended on this label for control of cotton insect pests. Pounce 3.2 EC has been found to be

effective and compatible in tank mixtures with the following products:

Methyl Parathion
EPN plus Methyl Parathion
Methomyl
Guthion
Azinphos-Methyl
Malathion
Chlordimeform

When using Pounce 3.2 EC in tank mixtures, observe all restrictions and precautions which appear on the labels of these products. Apply tank mixtures immediately after mixing.

Eggplants: To control Colorado Potato Beetle—Use Pounce 3.2 EC at the rate of 8 ounces (0.2 lbs. active) per acre. To control Vegetable Leafminer—Use Pounce 3.2 EC at the rate of 4 to 8 ounces (0.1 to 0.2 lbs. active) per acre. Apply using sufficient water to obtain uniform coverage. Apply as needed. Do not exceed 16 applications. Do not apply within 3 days of harvest.

Field Corn, Popcorn

Preemergent Use: To control Armyworm and Cutworms—Use Pounce 3.2 EC at a rate of 4 to 8 ounces (0.1 to 0.2 pounds active) in the time period from five days prior to planting up to emergence of the crop. Apply as a broadcast spray in a minimum of 20 gallons of finished spray per acre with ground equipment. Pounce may be mixed with the herbicide Paraquat CL in accordance with label limitations and precautions. Label dosage rates should not be exceeded.

Foliar Use: For control of Cutworms, European Corn Borer and Armyworm, apply Pounce 3.2 EC at a rate of 4 to 8 ounces (0.1 to 0.2 pounds active) prior to ear formation. Apply a minimum of 1 gallon of finished spray per acre by air and 10 gallons per acre with ground equipment. Pounce may also be injected into overhead sprinkler irrigation water provided (1) an anti-backflow check valve is present between the injection point and the water source, (2) the injection system has a check valve in the line to prevent irrigation water from entering the chemical supply tank and (3) the irrigation injection system must have interlocking on-off switches.

Head Lettuce: To control Alfalfa Looper and Cabbage Looper—Use Pounce 3.2 EC at a rate of 2 to 8 ounces (0.05 to 0.2 pound active) per acre. To control Beet Armyworm, Corn Earworm and Tobacco Budworm—Use Pounce 3.2 EC at a rate of 4 to 8 ounces (0.1 to 0.2 pounds active) per acre. Apply a minimum of 5 gallons of finished spray per acre by aircraft and 15 gallons per acre with ground equipment. Do not make more than 15 applications per season.

Horseradish: To control Imported Crucifer Weevil (*Burs lepridi*).

As a spring preplant dip—Use a 0.1% active solution (2 pints, 1 ounce of Pounce 3.2 EC per 100 gallons). Soak sets for 30 minutes and air-dry before planting.

For foliar application, use Pounce 3.2 EC at a rate of 1 pint (0.2 pound active) per acre. Apply by ground equipment in a minimum spray volume of 20 gallons per acre. Make up to 3 foliar applications as needed to control weevil adults during oviposition.

Do not apply within 22 days of harvest.

Ornamental Nursery Stock (Field Grown): To control Beet Armyworm, Cabbage Looper, Citrus Thrips, *Heliothis* spp., Leafhoppers, Leafminers and Whiteflies—Use 4 to 8 ounces per 100 gallons of water. Pounce 3.2 EC may be used to control specified pests on non-edible ornamentals and non-bearing plants of fruiting species.

Caution: Marginal leaf burn may occur on *Salvia*, *Dieffenbachia* and *Pteris* Fern. Application to blooming plants may cause browning of petals. Pounce has demonstrated excellent plant safety; however, not all species and varieties have been tested. Before treating large numbers of plants of a particular variety, treat a few plants and observe prior to full scale application.

Peaches: To control Lesser Peach Tree Borer, Peach Twig Borer, Rose Chaler, Plum Curculio, Tarnished Plant Bug, Green Fruitworm, Oriental Fruit Moth—Use Pounce 3.2 EC at a rate of 2-4 ounces (0.05-0.1 pound active) per 100 gallons of water. Do not exceed 400 gallons per acre. Apply when insects appear. Make applications with ground equipment, using sufficient water to obtain uniform coverage. Do not apply within 7 days of harvest. Do not make more than 8 applications per season. Do not graze livestock in treated orchards.

Pears (Dormant through Delayed Dormant): To control Pear Psylla—Apply Pounce 3.2 EC at a rate of 8 to 16 ounces (0.2 to 0.4 pound active) per acre. Pounce 3.2 EC may be combined with 2 to 8 gallons of spray oil per acre. Apply during the dormant through delayed dormant growth periods only. Apply in 3 to 20 gallons of finished spray per acre by aircraft and 25 to 400 gallons per acre by ground equipment. Do not make more than two applications per season.

Pears (Summer): To control Pear Psylla, Green Fruitworm, Codling Moth—Use Pounce 3.2 EC at a rate of 8-16 ounces (0.2-0.4 pound active) per acre. Use in sufficient water to achieve runoff and apply by ground equipment. Do not make more than 3 applications per season. Do not apply within 14 days of harvest.

Peppers (Bell): To control Vegetable Leafminer, Cabbage Looper, Flea Beetle, Corn Earworm, Pepper Weevil—Use Pounce 3.2 EC at a rate of 4 to 8 ounces (0.1 to 0.2 lbs. active) per acre. To control European Corn Borer—Use Pounce 3.2 EC at the rate of 8 ounces (0.2 lbs. active) per acre. Apply using sufficient water to obtain uniform coverage. Apply as needed. Do not exceed 8 sprays per season. Do not apply within 3 days of harvest.

Pine Seed Orchards: To control Coneworms, Seed Bugs—Use Pounce 3.2 EC at the following rates:

13 ounces in 100 gallons of water (0.025% dilution by weight) for high volume sprayers;

68 ounces in 100 gallons of water (0.125% dilution by weight) for low volume sprayers;

48 ounces in not less than 10 gallons of water per acre for aerial application.

Apply first application within 1 week of female flower closure or peak pollen flight for webbing coneworm control. For other coneworms and seed bugs, apply first application within 30 days following female flower closure. Repeat applications at 4 week intervals, but do not apply more than 6 applications. Apply approximately 5-10 gallons of the 0.025% dilution per tree with high volume sprayers. With low volume sprayers, apply 100 gallons of the 0.125% dilution per acre. Do not graze or harvest cover crop. Avoid contact with open water.

Potatoes: To control Beet Armyworm, Cabbage Looper, Colorado Potato Beetle, Cutworms, European Corn Borer, Potato Flea Beetle, Potato Leafhopper, Potato Psyllid, Potato Tubeworm, Aster Leafhopper and Tarnished Plant Bug. Use Pounce 3.2 EC at a rate of 4 to 8 ounces (0.1 to 0.2 pound active) per acre. Apply in a minimum of 3 gallons of finished spray per acre by air or 20 gallons of finished spray per acre using ground equipment. Do not make more than 12 applications per season. Do not apply within 7 days of harvest. Do not graze or feed potato forage.

Range Grass: To control Range Caterpillar—Use Pounce 3.2 EC at a rate of 0.4 ounces (0.01 lbs. active) per acre. Apply using sufficient water to obtain uniform coverage. Do not apply more than once per year. Cattle may be present during application. Do not harvest or feed hay to livestock.

Roses (Field Grown): For control of *Heliothis* sp., use 4 to 8 fluid ounces (0.1 to 0.2 pound active) per acre. Pounce may be applied in 5 gallons of finished spray per acre with ground equipment and 1 gallon per acre by air.

Roses (Greenhouse): For control of Beet Armyworm, Cabbage Looper and Omnivorous Leafroller, use Pounce at a rate of 8 fluid ounces (0.2 pound active) per 100 gallons of water.

Caution: Pounce is not phytotoxic to the following varieties of greenhouse roses: Ballena, Bettina, Cara Mia, Coquette, Excitement, Forever Yours, G. Wave, Jack Frost, Jr. Bridesmaid, Matador, Paul's Pink, Samantha, Seventeen, Sonia, Town Crier, Tropicana and Visa. Other varieties may vary in their sensitivity to Pounce, and a small number of plants should be treated under local conditions to determine plant safety prior to commercial use.

Soybeans: To control Cabbage Looper, Corn Earworm, Green Clove-worm, Mexican Bean Beetle, Soybean Looper, and Velvetbean Caterpillar, Bean Leaf Beetle and Potato Leafhopper—Use Pounce 3.2 EC at a rate of 2-4 ounces (0.05 to 0.1 pound active) per acre. To control Beet Armyworm—Use Pounce 3.2 EC at a rate of 4-8 oz. (0.1 to 0.2

lbs. active) per acre. Use higher dosage rate as population pressure increases. Apply a minimum of one gallon of finished spray per acre by aircraft and 5 gallons with ground equipment.

Pounce 3.2 EC may also be applied using refined non-volatile vegetable oil for control of the above named insects. Pounce 3.2 EC should be diluted with oil and applied in a minimum of one quart total volume/acre using equipment calibrated to give adequate coverage.

Do not make more than two applications per season. Do not apply within 60 days of harvest. Do not graze or feed soybean forage. Do not plant rotational crops within 60 days of last application.

Spinach: To control Beet Armyworm, Corn Earworm, Cabbage Looper, Cutworms, European Corn Borer, Green Cloverworm, Leafhoppers—Use Pounce 3.2 EC at a rate of 4 ounces (0.1 pound active) per acre. Apply when insects appear. Apply in sufficient water to obtain uniform coverage. Do not make more than 7 applications per season. Do not apply within 7 days of harvest.

Sweet Corn: To control Corn Earworm, European Corn Borer, Fall Armyworm—Use Pounce 3.2 EC at a rate of 4-8 ounces (0.1-0.2 pound active) per acre. Apply every 5 days or as needed. Do not apply more than 6 applications. Do not apply within 1 day of harvest of ears or forage or livestock grazing.

Sweet Corn (Florida only) fresh market use only: To control Corn Earworm, European Corn Borer, Fall Armyworm, Southern Armyworm—Use 4-10 ounces (0.1-0.25 pound active) per acre. Apply every 5 days or as needed.

Do not apply more than 3.25 pounds active ingredient per acre per crop season. Do not graze livestock in treated areas or harvest for forage.

Subterranean Termite Control—Preconstruction Treatment

Use a 1% solution of Pounce 3.2 EC and water (1 gallon Pounce 3.2 EC in 39 gallons of water.)

Slab-on-Ground Construction: Apply 1% solution at the rate of 1 gallon per 10 square feet uniformly over entire surface of soil covered by the slab floor. Apply 1% solution at 1½ gallons per 10 square feet if fill under slab is gravel or other coarse aggregate. Additionally, apply 1% solution uniformly at the rate of 4 gallons per 10 linear feet to such critical areas as (1) along inside of foundation walls (2) along expansion joints and (3) around plumbing and other features penetrating the slab.

For treatment along the outside of foundation walls, rod or dig a narrow trench (6 inches wide) no deeper than the top of the footing. Uniformly apply 1% solution at a rate of 4 gallons per 10 linear feet using a low pressure spray. When trenching, mix the emulsion spray with the soil as it is being replaced in the trench. Cover the treated soil with a thin layer of untreated soil.

Rodding, injection, and/or trenching using low pressure sprays may be used for post-construction treatment. Rod holes should be spaced (about one foot apart) in a manner that will allow for a continuous chemical barrier.

Buildings with Basements: Apply 1% solution at the rate of 1 gallon per 10 square feet over entire surface of soil covered by the slab floor. Apply 1% solution at 1½ gallons per 10 square feet if fill under slab is gravel or other coarse aggregate. Additionally, apply 4 gallons per 10 linear feet to such critical areas as (1) along inside of foundation walls, (2) along expansion joints and (3) around plumbing and other fixtures penetrating the slab.

For treatment on the outside of basement walls, dig a narrow trench 6 inches wide and 6 inches deep. Uniformly apply 1% solution at the rate of 4 gallons per 10 linear feet for each foot of depth, by rodding with low pressure spray. Where the footing is greater than 30 inches, apply 1% solution by rodding to the footing, spacing the rod holes so that a continuous chemical barrier is obtained. When trenching, mix the emulsion spray with the soil as it is being replaced in the trench. Cover the treated soil with a thin layer of untreated soil. Treat all voids in masonry block foundations at the rate of 2 gallons per 10 linear feet in a manner to insure that the solution reaches the footing.

Place opaque polyethylene sheeting over any soil treated with Pounce 3.2 EC which will not be covered by concrete or soil on the same day as treatment. Do not treat crawl spaces or exposed wood with Pounce 3.2 EC. Structures treated with Pounce 3.2 EC as described above will receive a minimum of five years control.

Always apply Pounce 3.2 EC in a manner such that runoff is avoided. Avoid contamination of public and private water supplies by (1) using anti-backflow equipment or procedures, (2) not treating soil beneath structures that contain below-grade wells or cisterns, (3) not treating water-saturated or frozen soils and (4) consulting state and local specifications for recommended distance of treatment areas from wells. Also, when rodding or injecting, avoid heat and air conditioning ducts, vents, water and sewer lines, and electrical conduits.

In order to comply with F.H.A. termite proofing requirements, refer to the latest edition of the Housing and Urban Development (HUD) *Minimum Property Standards*.

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 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.

WALNUTS: To control Navel Orangeworm, Codling ~~Moth~~ and Walnut Husk Fly - Use Pounce 3.2 EC at a rate of 8-16 ounces (0.2 to 0.4 pounds active) per acre. Apply when insects appear. Do not apply more than 1.6 lbs ai per acre per season. Apply in a minimum of 20 gallons of finished spray per acre by aircraft or 100 gallons of finished spray per acre with ground equipment. Do not apply within 1 day of harvest. Do not graze livestock in treated orchards.