

INTRODUCTION

Methoprene, the active ingredient in APEX 5E insect growth regulator (IGR) is a chemical analog of a natural insect hormone. Unlike traditional pesticides, the presence of methoprene does not result in immediate insect kill, it interferes with the normal process of insect development. APEX 5E will prevent the emergence of adult sciarid flies when incorporated into the mushroom growing medium. Under most conditions fly control is achieved without adverse effects on mycelium growth or mushroom yield. Pupa and adults present at the time of application will not be affected. If high adult populations are present initially, use of a conventional adulticide will ensure the best over all results. After treatment with APEX 5E, larvae will continue to develop to the pupal stage where they will die. Estimation of adult fly populations should be no earlier than two weeks after treatment to assess the full benefit of APEX 5E.

**PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS
CAUTION**

Avoid contact with eyes. In case of contact, immediately flush eyes with plenty of water. Get medical attention if irritation persists.

STORAGE AND DISPOSAL

Store in a cool place. Do not contaminate water, food or feed by storage or disposal. Open dumping is prohibited. Triple rinse and offer for recycling, reconditioning, or disposal in approved landfill or bury in safe place.

Pesticide, spray mixture, or residue that cannot be used or chemically reprocessed should be disposed of according to procedures approved by Federal, State or Local disposal authorities.

Rinse container and offer for recycling, reconditioning or bury in a safe place.

Consult Federal, State, or Local disposal authorities for approved alternative procedures.

WARRANTY AND CONDITIONS OF SALE

Zoecon Corporation warrants that this product conforms to the chemical description on the label and is useful for the control of sciarid flies as described herein. Neither Zoecon nor the seller makes any other warranty, express or implied.

Label No. 1280



**An Insect Growth Regulator to Prevent
the Emergence of Adult Sciarid Flies
in Mushroom Culture**

ACTIVE INGREDIENTS:

Methoprene [Isopropyl (E)-11-methoxy-3,7,11-trimethyl-2,4-dodecadienoate]	65.7%
Xylene Range Aromatic Solvents	20.4%
INERT INGREDIENTS	13.9%
TOTAL	100.0%

This product contains 5 lbs. (gallon) (667 grams liter) methoprene active ingredient.

**Keep Out of Reach of Children
CAUTION**

See side panel for additional precautionary statements.

Net Contents: 84.5 FL. oz. (2,500 ml)

ZOECON CORPORATION
Palo Alto, California

U.S. Patents 1,901,662 & 1,912,815
EPA Reg. No. 20954-B9 EPA Est. No. 20954-A-1

ZOECON

Follow either METHOD A, METHOD B, or METHOD C Application Instructions

ACCEPTED
with COMMENTS
in EPA Label Panel:

DEC 2 1982

Under the authority of the Administrator, the following pesticide label is hereby approved for use in accordance with the registration number 20954-B9.
20954-89

**DIRECTIONS:
GENERAL CLASSIFICATION**

This is a violation of Federal Law to use this product without its labeling.

METHOD, RATE AND TIME

For best results, APEX 5E should be incorporated into growing medium.

FOLLOW EITHER METHOD A OR METHOD B APPLICATION INSTRUCTIONS

A. INCORPORATE IN CASING AT TIME OF PLACEMENT OF CASING
Apply APEX 5E at the rate of 5 1/2 fl. oz. per cubic foot of casing. Operate the casing operation evenly and mechanically mix into the casing. Make application evenly and mechanically after setting it in place.

B. INCORPORATE IN COMPOST AT TIME OF PLACEMENT OF COMPOST
Apply APEX 5E at the rate of 5 1/2 fl. oz. per cubic foot of compost. Operate the spawning machine or other suitable method to mix the compost at the time of spawning and the spawning machine or other suitable method. Make application evenly and mechanically after setting it in place.

MIXING AND HANDLING

1. Add the measured amount of APEX 5E to the water, mix and complete filling with water.
2. Use diluted spray solution within 48 hours of mixing.

EFFECT ON MUSHROOM YIELD

In most cases treatment with APEX 5E has no effect on mushroom yield through control of damaging sciarid flies. Test different practices followed in mushroom culture on small plots to determine the effect under his own cultural conditions.

C. COMPOST SURFACE DRENCH CASING AT TIME OF PLACEMENT

For those crops that have a spawn run, a split application is recommended.

First Application, on a spawn run, apply APEX 5E to the surface at the rate of 2 fl. oz. in adequate water for even distribution.

Second Application, in a spawn run, apply APEX 5E to the surface at the rate of 2 3/4 fl. oz. per cubic foot of casing material prior to the casing operation. Make application evenly and mechanically after setting it in place.

ACTION

APEX 5E insect growth regulator is an insect hormone. Unlike traditional insecticides, it does not result in immediate insect death. Instead, it regulates the normal process of insect development. APEX 5E will control flies when incorporated into the casing or mushroom yield. Pupa development will not be affected. If high pupation is achieved, pupae will not be affected. If high pupation is achieved, pupae will not be affected. If high pupation is achieved, pupae will not be affected. If high pupation is achieved, pupae will not be affected.

STATEMENTS TO HUMANS

In case of contact, immediately flush eyes with water. If irritation persists, consult a physician.

DISPOSAL

Do not contaminate water, food or feed by storage or disposal. Triple rinse and offer for recycling, reuse, or landfill or bury in safe place. Do not use or chemically alter that cannot be used or chemically altered according to procedures approved by state or federal authorities for approved recycling, reconditioning or bury in a safe place.

CONDITIONS OF SALE

This product conforms to the chemical specifications for the control of sciarid flies as determined by the seller makes any other warranty.

Label No 1280



An Insect Growth Regulator to Prevent the Emergence of Adult Sciarid Flies in Mushroom Culture

ACTIVE INGREDIENTS:

Methoprene [Isomethoprene (E)-11-methoxy-3,7,11-trimethyl-2,4,6-decatrienoate]	65.7%
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INERT INGREDIENTS	13.9%
TOTAL	100.0%

This product contains 5 lbs. per gallon (500 grams/liter) methoprene active ingredient.

**Keep Out of Reach of Children
CAUTION**

See safety sheet for additional precautionary statements.

Net Contents: 84.5 FL. oz. (2,500 ml)

ZOECON CORPORATION
Palo Alto, California

U.S. Patents 3,904,662 A, 3,912,815
EPA Reg. No. 20954-B9-FRM Est. No. 20954-151

zoecon

Follow either METHOD A, METHOD B, or METHOD C Application Instructions

ACCEPTED
with COMMENTS
by EPA on 12/2/82

DEC 2 1982

Under the provisions of the Federal Insecticide, Fungicide, and Rodenticide Act, this product is registered under the name of ZOECON CORPORATION, Palo Alto, California, U.S.A. Registration No. 20954-89

**DIRECTIONS FOR USE
GENERAL CLASSIFICATION**

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

METHOD, RATE AND TIMING OF APPLICATION

For best results, APEX 5E should be incorporated in the mushroom growing medium.

FOLLOW EITHER METHOD A OR METHOD B APPLICATION INSTRUCTIONS

- A. INCORPORATE IN CASING AT TIME OF CASING
Apply APEX 5E at the rate of 5 1/2 fluid oz. per 1000 sq. ft. Make application evenly and mechanically mix into casing material prior to the casing operation, or drench evenly onto the surface of the casing immediately after placement.
- B. INCORPORATE IN COMPOST AT TIME OF SPAWNING AND IN CASING AT TIME OF PLACEMENT OF CASING LAYER
In Compost: Apply APEX 5E at the rate of 5 1/2 fluid oz. per 1000 sq. ft. in adequate water for even distribution. Spray or sprinkle on the surface of compost at the time of spawning and thoroughly incorporate using a spawning machine or other suitable mechanical means.
In Casing: Apply APEX 5E at the rate of 2 3/4 fluid oz. per 1000 sq. ft. Make application evenly and mechanically mix into casing material prior to the casing operation, or drench evenly onto the surface of the casing immediately after setting in place.

MIXING AND HANDLING INSTRUCTIONS

1. Add the measured amount of APEX 5E to a spray tank partially filled with water and complete filling with recommended quantity of water.
2. Use diluted spray solution within 48 hours of mixing. Agitate before each use.

EFFECT ON MUSHROOMS

In most cases treatment with APEX 5E has a beneficial effect on mushroom yield through control of damaging sciarid fly larvae. Due to the widely differing practices followed in mushroom culture, the user should conduct test treatments on small plots to determine that reduced crop yields will not occur under his own cultural conditions.

C. COMPOST SURFACE DRENCH BEFORE CASING AND IN CASING AT TIME OF PLACEMENT OF CASING LAYER.

For those crops that have a 16-day or longer spawn run, a split application can be used.

First Application, on compost: Apply APEX 5E 12 - 13 days after spawning. Drench APEX evenly on the surface at the rate of 2 3/4 fl.oz. per 1000 sq ft. in adequate water for even distribution.

Second Application, in casing: Apply APEX 5E at the rate of 2 3/4 fl.oz. per 1000 sq. ft. Make application evenly and mechanically mix into casing material prior to the casing operation, or drench evenly onto the surface of the casing immediately after setting in place.

Zoecon Corporation
975 California Avenue
Palo Alto, CA 94304

Gentlemen:

Subject: Apex^(TM) SE Insect Growth Regulator
EPA Registration No. 20954-89
Your Submission of September 23, 1982

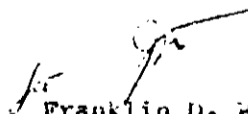
The amendment referred to above, submitted in connection with registration under FIFRA sec. 3(c)(7)(A), is acceptable for an incorporation of an additional method of application for mushroom crops that have a 16 day or longer spawn run, provided that you:

1. Submit and/or cite all data required for registration/reregistration of your product under FIFRA sec. 3(c)(5) when the Agency requires all registrants of similar products to submit such data.
2. Submit five (5) copies of your final printed labeling before you release the product for shipment.

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

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

Sincerely yours,


Franklin D. R. Gee
Product Manager (17)
Insecticide-Rodenticide Branch
Registration Division (25-767C)

Enclosure

IRB-RD:NELSON:DCR-29513:WANG-1313C:hk:Raven:479-2013:11/24/82

300/8010
18/4
717
OK
WHL
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