

U.S. ENVIRONMENTAL PROTECTION AGENCY  
OFFICE OF PESTICIDES PROGRAMS  
REGISTRATION DIVISION (73-767)  
WASHINGTON, DC 20460

EPA REGISTRATION NO.

2724-446

DATE OF ISSUANCE

MAY 22 1990

TERM OF ISSUANCE

NAME OF PESTICIDE PRODUCT

Zolotor 27-270 Mosquito  
Growth Regulator

NOTICE OF PESTICIDE:  REGISTRATION  
 REREGISTRATION

(Under the Federal Insecticide, Fungicide,  
and Rodenticide Act, as amended)

NAME AND ADDRESS OF REGISTRANT (Include ZIP code)

[Faint illegible text]  
 [Faint illegible text]

NOTE: Changes in labeling formula 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 U.S. 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.

A copy of the labeling accepted in connection with this Registration/Reregistration is returned herewith.

Registration is in no way to be construed as an indorsement or approval of this product by this 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.

**BEST AVAILABLE COPY**

ATTACHMENT IS APPLICABLE

SIGNATURE OF APPROVING OFFICIAL

*[Signature]*

DATE

5/22/90

*Copy 5-22-90*

4. 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 constitutes acceptance of these conditions.

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

Sincerely,



Phil Hutton  
Product Manager (17)  
Insecticide/Rodenticide Branch  
Registration Division (H7505C)

Enclosure

BEST AVAILABLE COPY

# ZOECON RF-379 MOSQUITO GROWTH REGULATOR SR-20

Prevents Emergence of Adult Floodwater Mosquitoes

ACTIVE INGREDIENT:  
(S)-Methoprene [isopropyl (2E,4E,7S)-11-methoxy-3,7,11-trimethyl-2,4-dodecadienoate]..... 20%  
INERT INGREDIENTS..... 80%

Contains 1.72 lb/gal (205.2 g/liter) active ingredient

**KEEP OUT OF REACH OF CHILDREN**

## CAUTION

See Back Panel For Additional Cautions

Because of the unique mode of action of A.L.L.™ Concentrate, successful use requires familiarity with special techniques recommended for application timing and treatment evaluation. See Guide to Product Application or consult local Mosquito Abatement Agency.

**NET CONTENTS:**

ACCEPTED  
with COMMENTS  
in EPA Letter Dated:

MAY 22 1990

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

2724-446

### PRECAUTIONARY STATEMENTS

**HAZARDS TO HUMANS - CAUTION:** Causes moderate eye irritation. Wash thoroughly with soap and water if eyes or clothing.

**DIRECTIONS FOR USE:** It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

**Instructions for Use --** 1. SHAKE WELL BEFORE USING. Stand and must be thoroughly agitated prior to dilution. 2. Use clean equipment. 3. Partially fill spray tank with recommended amount of Zoecon RF-379, agitate and complete during application is desirable. 4. Spray solution should be used immediately. Always agitate before spraying.

**RECOMMENDED APPLICATIONS --** Introduction: Zoecon RF-379 or 4th larval instars of floodwater mosquitoes to prevent larvae continue normal development to the pupal stage. Zoecon RF-379 has sufficient field life to be effective at recommended larval stages under varying field conditions. For further information, see Product Application.

**Methods of Application -- Aerial:** Use the recommended amount below in sufficient water to give complete coverage. The spray solution per acre is usually satisfactory. Do not apply in areas favor drift from areas treated.

**Ground:** Determine the average spray volume used per acre and/or specific equipment. Mix Zoecon RF-379 in the amount of water to give the rate per acre recommended below.

**Application Rate:** Apply 3/4 to 1 fl.oz. of Zoecon RF-379 (1.72 lb/gal) in water as directed.

**Application Sites -- Pastures:** Zoecon RF-379 may be applied without removal of grazing livestock.

**Rice:** Zoecon RF-379 must be applied to 2nd, 3rd and 4th instar mosquitoes found in rice, usually within 4 days after multiple flooding rice culture is practiced. Zoecon RF-379 should be applied with each flooding. Do not apply after rice reaches the seedling stage.

**Intermittently Flooded Noncrop Areas:** Zoecon RF-379 may be applied when flooding may result in floodwater mosquito habitat. Do not apply in freshwater swamps and marshes, woodland pools and meadows, drainage areas, waste-treatment and settling ponds, ditches, and man-made depressions. Around estuarine areas, treat habitats above high tide water level.

**Dense vegetation or canopy areas:** Apply a Zoecon RF-379 granular dispersal equipment. For detailed preparation and application, see Product Application.

**Mixing and Handling Instructions:** 1. Add measured amount of concentrate to tank partially filled with water, mix and complete fill with water. 2. Use diluted spray solution within 48 hours of each use.

**STORAGE & DISPOSAL --** Store in cool place away from food and feed. In case of leakage or spill, soak up with absorbent material. Triple rinse or equivalent. Then offer to responsible authority and dispose of in a sanitary landfill, or incinerate. State and local authorities, by burning. If burned, resulting from the use of this product may be disposed of at a waste disposal facility. Do not contaminate water, soil, or food with the product.

**Seller makes no warranty, express or implied, concerning the performance of this material when such use and handling are contrary to the label.**

Zoecon Corporation  
A Sandoz Company  
12200 Denton Drive, Dallas, Texas

EPA Reg. No. 2724-  
U.S. Pats. 3,904,662; 3,912,815  
0189-A-0145E

7/14

## GUIDE TO PRODUCT APPLICATION

### FOR THE FIRST TIME USER

Zoecon RF-379 Mosquito Growth Regulator SR-20 is the result of extensive research into the intricacies of natural biochemical and physiological development of insects. New chemical technology and biological findings were combined to develop a unique mosquito larvicide.

Zoecon RF-379, an insect growth regulator (IGR), acts by inducing morphological changes which interfere with normal development. These effects, not immediately apparent, result in the failure of adult mosquitoes to emerge from pupae. Zoecon RF-379 is not a conventional pesticide. It does not produce the nondiscriminatory rapid, directly toxic effects that are associated with traditional larvicides.

Zoecon RF-379 differs from other larvicides you may have used only in the manner and time course of its action after application.

Zoecon RF-379 is applied to second, third or fourth instar larvae using standard larviciding equipment in a manner similar to other larvicides.

After application to second, third or fourth instar larvae at recommended rates, absolutely no effects on larvae will be observed. They will continue developing normally and will pupate. Pupae will appear unaffected, but will eventually die. Adults will not emerge. Infrequently, a few adults may be seen at the water surface but they will have abnormalities preventing flight and will not survive.

Because the effect of Zoecon RF-379 is neither death nor widespread mortality immediately following pupation, the number of adults which emerge is the only criterion for accurately assessing control. Checks by dip counts during larval and pupal stages will give no measure of effectiveness.

Refer to the following diagram and checklist, in addition to label instructions for guidance in timing of application and performance evaluation. They will assist you in obtaining the best possible results with this unique product.

### CHECKLIST

Things to remember when using Zoecon RF-379 Mosquito Growth Regulator SR-20

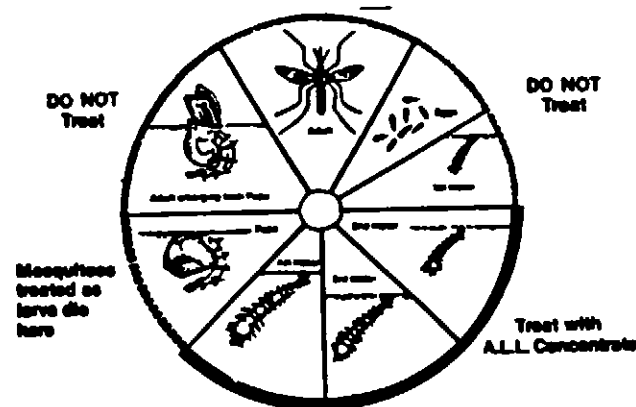
DO the following:

1. DO treat second, third and/or fourth larvae, not pupae or adults. (First instar larvae are so small they are not readily detectable.)
2. DO wait until treated larvae have pupated. Then collect pupae and transfer to laboratory to observe for emergence of adults.
3. DO observe pupae for several days, since death of IGR treated mosquitoes occurs when pupae would normally emerge as adults. (Careful observation is necessary since dead pupae decompose rapidly and thus are not easily seen.)
4. DO monitor emerging adults at the treatment site. This absolutely requires that emergence traps be placed in treatment areas to capture adult mosquitoes as they emerge.

DO NOT do the following

1. DO NOT take dip counts of larvae after treatment for the purpose of performance evaluation. Normal looking larvae will be present.
2. DO NOT take dip counts of pupae after treatment for the purpose of performance evaluation. Normal looking pupae will be seen but these will not develop into normal adults.
3. DO NOT think Zoecon RF-379 has failed if some adult mosquitoes are flying in treated areas; they probably have flown in from nearby untreated areas. Numbers 2 and 4 of the "DO" checklist are the only methods of accurately assessing effectiveness.
4. DO NOT spray again, either with Zoecon RF-379 or a conventional insecticide, because larvae or pupae are present after application. This is normal. The effectiveness of Zoecon RF-379 can only be measured by lack of adult emergence.

## LIFE CYCLE OF MOSQUITO WHEN TO APPLY ZOECON RF-379 MOSQUITO GROWTH REGULATOR SR-20



### Preparation of ALTOSAND® Granular Formulation

An "On-Site" Method of Preparing a Granular Formulation of Zoecon RF-379 Mosquito Growth Regulator SR-20

### INTRODUCTION

A method of application of Zoecon RF-379, using sand as a carrier, has been developed for use in floodwater mosquito breeding areas with dense vegetation or canopy. The characteristics of ALTOSAND provide excellent foliage penetration, insuring that the active ingredients reach the water where they are released from the sand. ALTOSAND will prevent the emergence of species of the floodwater mosquito complex when applied to second, third or fourth larval instars at a rate of eight to ten pounds per acre.

### PREPARATION INSTRUCTIONS

The following materials are required to prepare a 100-pound batch of ALTOSAND:

- 99 lbs. washed, dry sand (20-45 mesh)
- 0.5 lbs. Zoecon RF-379, (7.5 fluid oz.)
- 0.5 lbs. Hissil 233 (silicon dioxide)
- Small funnel
- Cement mixer

1. Measure the time required for a level funnel full of sand to empty.
2. Into a rotating-type mixer place 99 pounds of dry (20-45 mesh) sand. While the mixer is rotating, slowly pour 0.5 pound (7.5 fluid ounces) Zoecon RF-379, onto the sand. (If better wetting is required, Zoecon RF-379 may be diluted in up to an equal volume of water.)
3. Mix until the sand is uniformly coated with Zoecon RF-379, (usually five to ten minutes).
4. Stop the mixer and add 0.5 pound of Hissil 233. Cover the mixture to reduce dust. Start the mixer and run for approximately five minutes. (The quantity of Hissil 233 necessary to achieve a dry, free-flowing mixture will vary depending on the particle size distribution and moisture on the sand.)
5. Compare the flow rate of the ALTOSAND mixture with that of untreated sand in step No. 1. Add more Hissil if it flows significantly slower and reduce the amount of Hissil in subsequent batches if the mixture flows at the same or a faster rate and is excessively dusty.

### APPLICATION RATE AND METHODS

Apply at a rate of eight to ten pounds of the final mixture per acre using standard granular dispersal equipment.