PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

DANGER

CORROSIVE. CAUSES EYE DAMAGE and skin irritation. Keep out of eyes, keep off skin and clothing. Wear goggles or face shield and rubber gloves when handling. Harmful if swallowed. Avoid food contamination. Keep all unprotected persons out of the operating area or vicinity where there may be danger of drift.

ENVIRONMENTAL HAZARDS

This product is toxic to wildlife and other aquatic life at recommended application rates. Keep out of lakes, streams, ponds, and estuaries. Apply this product only as specified on this labeling.

ENDANGERED SPECIES CONSIDERATIONS

.Notice: The killing of a member of an endangered species during roost treatment may result in a fine under the Endangered Species Act. Before treatment, the user is advised to contact the Regional U.S. Fish and Wildlife Service (Endangered Species Specialist) or the local Fish and Game Office for specific information on endangered species.

RESTRICTED USE PESTICIDE

For use only by or under the supervision of persons certified as applicators of Restricted Use Pesticides. Use of this product in avian population control is limited to situations approved and supervised by U.S. Department of Agriculture personnel trained in bird control.

COMPOUND PA-14
AVIAN STRESSING AGENT

For the control of roosting red-winged blackbirds, rusty blackbirds, common grackles, brown-headed cowbirds, and starlings.

ACTIVE INGREDIENTS:

a-Alkyl (C_{11}-C_{15})-omega-hydroxpoly (oxyethylene): average poly (oxyethylene) content 9 moles*	**99.5%**
INERT INGREDIENTS:	
Water	**0.5%**
TOTAL	**100.0%**

*ethoxylate of isomeric linear secondary alcohol

KEEP OUT OF REACH OF CHILDREN

DANGER

STATEMENT OF PRACTICAL TREATMENT

IF SWALLOWED: CALL A PHYSICIAN OR POISON CONTROL CENTER IMMEDIATELY!

Promptly administer a large quantity of milk, egg white, or gelatin solution. If these are not available, administer large quantities of water. Avoid alcohol.

IF IN EYES - Flush eyes with plenty of water. Call a physician immediately.
IF ON SKIN - Remove contaminated clothing, and flush affected areas with plenty of water.

NOTE TO PHYSICIAN

Probable mucosal damage may contraindicate the use of gastric lavage. Measures against circulatory shock, respiratory depression, and convulsion may be needed.

UNITED STATES DEPARTMENT OF AGRICULTURE
ANIMAL AND PLANT HEALTH INSPECTION SERVICE
ANIMAL DAMAGE CONTROL
Hyattsville, MD 20782

EPA Est. No. 56228-ID-1
EPA Reg. No. 56228-13

Net Weight 55 GALLONS LIQUID (460 lbs.)

DIRECTIONS FOR USE

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

USE RESTRICTIONS

For use directions, see "Instructions for Use of PA-14 Avian Stressing Agent". Do not use without reading instructions. For further information write to the U.S. Department of Agriculture, Animal and Plant Health Inspection Service, Hyattsville, MD 20782.

STORAGE AND DISPOSAL

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

STORAGE: Store in original container in a dry location at temperature below 50° C (122° F). In case of leakage or spills flush with water or cover with absorbent materials.

PESTICIDE DISPOSAL: Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate 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: 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.

ACCEPTED

DEC 20 1988

Under the Federal Insecticide, Fungicide and Rodenticide Act, as amended, for the pesticide registered under EPA Reg. No. 56228-13

INSTRUCTIONS FOR USE OF PA-14

AVIAN STRESSING AGENT

U. S. Department of Agriculture
Animal and Plant Health Inspection Service
Animal Damage Control
Hyattsville, MD

EPA EST. No. 56228-ID-1
EPA Reg. No. 56228-13

INTRODUCTION

PA-14, a nonionic surfactant, enhances wetting by lowering the surface tension of water. It is useful in reducing the numbers of winter-roosting blackbirds and starlings if applied to roosts during or immediately preceding cold, wet weather. The cause of bird death is hypothermia. The estimates of numbers of birds killed by the treatments should be made to fulfill requirements of depredation permits and to evaluate the success of roost treatments. Tabulating dead birds in randomly selected plots or transects may provide the best practical evaluation of efficacy within the roosts. If substantial numbers of birds die outside the roosts, random sampling of these populations should also be conducted where feasible. See the Appendix for detailed instructions regarding estimations of efficacy.

GENERAL CONSIDERATIONS

Legal and Administrative Restrictions

Use of PA-14 in avian population reduction is limited to certified applicators (public, commercial, and private). Individuals in charge of roost treatments must have required Federal and State permits for controlling migratory birds. Overall coordination by the U.S. Department of Agriculture, Animal and Plant Health Inspection Service (APHIS) is required. Nothing in these guidelines should be construed to circumvent or violate any applicable State or local law

or regulation. Dispose of birds found dead at or near the roost site in accordance with the label and with State and local laws and ordinances.

Permission

Obtain permission to conduct roost treatments from the landowner and/or tenant. Document permission in the form of a waiver or cooperative agreement prepared in duplicate. In requesting permission, the Government representative should inform the landowner of the possible hazards associated with the treatment. Place warning signs which note the hazards of the bird control procedures planned and the dates of treatment along the perimeter of the roost area to be treated.

Aquatic Toxicity of PA-14

PA-14 is toxic to many aquatic life forms. Do not apply this product to surface waters, ground waters, and drainage areas where runoff and flooding could contaminate bodies of water.

Phytotoxicity of PA-14

As PA-14 can be toxic to some actively growing plants, applications to valuable timber or nursery stock should be restricted to the dormant period.

Hazards to Nontarget Wildlife

Some nontarget birds, such as robins and cardinals, may be affected if they roost within or on the edge of blackbird-starling roosts. Restricting application of PA-14 to the blackbird-starling roost area proper will reduce this hazard. No known hazards exist for mammalian species.

Histoplasmosis Precautions

Consult local health authorities regarding determining whether the roost is positive for the histoplasmosis fungus (Histoplasma capsulatum). Heavy bird mortality necessitating a clean-up at a histoplasmosis-positive site could present risk of an outbreak, particularly if the site were to be bulldozed. Inform personnel working in roosts, whether the roosts have been bulldozed or not, of the symptoms of histoplasmosis and require them to wear respirators capable of filtering particulate matter larger than one millimicron in diameter.

Weather Parameters

Successful use of PA-14 is dependent on: 1) the effective delivery of the chemical to the birds; 2) at least 0.5 in. of rainfall (natural or artificial) falling on the birds shortly after PA-14 application (before

dawn); and 3) accurate prediction of temperature before dawn at least as low as 45°F. For best results, the sky should be dark (rainy, overcast, or with no more than a crescent moon). If temperatures remain cold enough to prevent bathing by treated birds, some mortality can be expected from cold rains occurring up to 3 nights posttreatment.

Storage of PA-14

All containers of PA-14 must bear the label registered with the U.S. Environmental Protection Agency and any required State labels. For ready use, PA-14, undiluted or diluted with water, should be stored at temperatures between 60°F and 120°F. If diluted so that ethanol or isopropanol make up 14 percent of the solution, PA-14 can be stored in temperatures as low as 10°F. If PA-14 is held undiluted in temperatures colder than 60°F, it must be heated before being combined with alcohol or water.

GROUND APPLICATION

General Description

This technique involves the application of PA-14 and water through a system of irrigation pipes and overhead sprinklers erected in the target blackbird-starling roost. A single standpipe supporting a water cannon can also be used. The water is normally supplied from a fire hydrant and is pumped by a

fire truck through fire hoses to the sprinkler or water cannon system. The PA-14 is introduced into the system using either an injector pump or foam eductor.

Placement of System

The roost to be treated should be mapped so that the sprinkler or water cannon system can be placed most effectively in the roost area. When the system layout has been tentatively chosen, water pressure needed to overcome the friction loss in the pipe or hose and to provide an adequate water supply to the sprinklers or water cannon (while ensuring that the pressure does not exceed recommended levels) must be computed from friction loss tables for fire hose and irrigation pipe.

For erecting a sprinkler system, cut lanes through the roost vegetation to conform to the layout of the system. Lay irrigation pipe horizontally in these lanes. Erect risers, generally placed on 60-ft centers, so that the height of the sprinklers corresponds to or slightly exceeds the height of the vegetation. Guy the risers in place with ropes.

For erecting a water cannon, an area large enough to accommodate the cannon and supporting stand must be cleared of vegetation. Using steel cable, guy a standpipe 4-1/16" in inside diameter vertically in the air. Attach the water cannon to the top of the standpipe. The height of the cannon must be such that the water spray will clear the tops of the vegetation.

Using appropriate connections, connect 2-1/2" to 5" fire hose lines to the sprinkler or water cannon system. Supply water at a rate of 200-1200 gallons per minute (GPM). Inject PA-14 into one of the lines near the fire truck, which should be positioned at a distance from the roost so as not to disturb the birds.

Operation of System

Just prior to the schedules time of treatment, heat the PA-14 to 120-150^{0}F. Before beginning treatment, clear the sprinkler or water cannon system of debris and check for leaks and breaks.

The spray operation can commence as soon as the birds have settled in the roost. To lessen the chances of birds flushing, ease water into the sprinkler or water cannon system until the desired operating pressure is achieved. When full operating pressure has been reached and birds are not flushing, begin the PA-14 application by adjusting the metering valve on the eductor or injector pump to 0.4-0.7 percent. PA-14 is applied at this rate until the label application rate of 20 gallons per acre is achieved.

Once the PA-14 has been delivered, the more water that can be applied the better. Natural rainfall increases the effectiveness of the operation. Between 0.5 in. and 0.75 in. of water is adequate, but for operations at the upper end of the temperature range (45^{0}F), at least 1 in. is desirable. Time

to deliver 1 in. of water varies according to nozzle sizes used, area covered, and rate of water delivery (GPM). In general most operations can be completed in 2 to 6 hours.

AERIAL APPLICATION

General Description

This technique involves the nocturnal application of PA-14 by means of a properly-outfitted helicopter or agricultural spray plane. The application should be made prior to an expected rainfall of 0.5 in. or more, falling before dawn, and accompanied by temperatures that will drop below 45^{o}F.

Aircraft and Pilot

The responsibility of contracting with a qualified aerial applicator belongs to the State or local agency in charge of the roost spraying operation. The spray pilot must hold a commercial license (preferably with instrument rating) and an Agricultural Aircraft Operator's Certificate (FAR 137), and carry adequate liability insurance. Contact the insurer to determine if the policy is valid under proposed flight conditions.

The aircraft involved must have day and night VFR equipment. Additionally, IFR equipment is desirable. FAA regulations should be checked to verify that

the aircraft has at least minimum instrumentation and required equipment. Radio communication with ground observers is helpful.

The pilot must obtain permission and, if necessary, a waiver to conduct each operation from the appropriate FAA General Aviation District Office. This should be done as far in advance as possible to allow time for FAA approval.

If the U.S. Department of Agriculture, Animal and Plant Health Inspection Service, Animal Damage Control has direct responsibility for a particular roost operation, regulations applying to the Animal Damage Control flight operations must be followed. These are available from the Regional Pilot at the appropriate Regional office of the Animal Damage Control service.

PA-14 Application Procedures

The pilot must become thoroughly familiar with the roost area and any attendant hazards. Steady-burning, battery-powered lights or flares delineating the roost outline or spray patterns are helpful beacons. Whether pre-determined swaths or only visible concentrations of birds are to be sprayed must be determined beforehand.

If air temperatures are below 35^{0}F, or if concentrations of PA-14 greater than 15 percent are to be sprayed, up to 5 percent (based on final solution) isopropyl or ethyl alcohol should be added as a thinner and to prevent freezing. Use of warm or hot water enhances mixing. If cold water must be

used, isopropyl or ethyl alcohol (up to 5 percent of final solution) should be mixed with PA-14 before adding water.

Treatment must not exceed 20 gallons of actual PA-14 per acre, but effective concentrations may vary from 8 to 25 percent actual material depending on the application technique used. Two application methods are recommended:

1. Single-pass. If roosting birds are likely to flush to another area during a spray pass, treatment should be made in a series of single contiguous swaths beginning at one edge of the roost and moving toward the opposite edge. A high concentration of PA-14 (e.g., 25 percent) should be used, and the volume necessary to apply the correct amount of PA-14 (e.g., 80 GPA) may be best obtained through use of a spray plane with a venturi spreader or perforated-wing spray apparatus, or a helicopter.

2. Multiple-pass. If birds are not expected to flush appreciably under the spray plane, better distribution of the material is obtained by using a lower PA-14 concentration and by making repeated passes over a given area until the total 20 GPA of actual material is delivered. For example, using an 8 percent solution, treatment might be made in 10 passes at 25 GPA with a boom and nozzle sprayer or in 3 passes of 80 GPA with a perforated-wing sprayer. Helicopters are especially effective with the multiple-pass technique.

Actual delivery should occur at an altitude high enough to minimize bird reaction and reduce danger of collision with birds. This height will vary with different roosts and aircraft, but usually will be approximately 75 to

125 feet above the roost vegetation. The pilot should be kept aware of wind velocity and direction throughout the spray application. For maximum safety, treatment should not be made in the rain. To limit spray drift, spraying should not be carried out when wind velocities exceed 10 mph.

EVALUATION OF ROOST POPULATION MORTALITY

Estimate roost mortality to fulfill requirements of depredation permits and to evaluate the success of the roost treatments. Tabulating birds in randomly selected plots or transects provides the best evaluation of mortality in the roost proper. If substantial mortality occurs outside the roost, random sampling of these areas should also be conducted where feasible. See Appendix for detailed instructions regarding estimating roost mortality.

SOURCE OF INFORMATION

For more specific information, contact the U.S. Department of Agriculture, Animal and Plant Health Inspection Service, Animal Damage Control Regional Offices.

Western Regional Office
ADC-APHIS-USDA
Building 16, Denver Federal Center
P. O. Box 25266

Eastern Regional Office
ADC-APHIS-USDA
Kingsport Building/Koger Center
Suite 104, 215 Centerview Drive

Denver, Colorado 80225-0266

(303) 236-4031 or FTS 776-4031

Brentwood, Tennessee 37027

(615) 736-5095 or FTS 852-5095

Research Office

ADC-APHIS-USDA

Kentucky Research Station

334 15th Street

Bowling Green, Kentucky 42101

(502) 842-0341