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May 1999

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Peter F. Vogt

RJ Advantage, Inc., Cincinnati, OH

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COMPLETE CONTROL OF NUISANCE BIRDS IN AIRPORT HANGARS.

Peter F. Vogt

Director, RJ Advantage, Inc.
501 Murray Road, Cincinnati, OH 45217-1014.

Abstract

Fogging of ReJeX-iT⁷ TP-40 offers a very efficient method for the control and dispersal of nuisance birds from many diverse areas. The amount of the repellent is greatly reduced over any other control method. The method is direct and is independent of the activity of the birds. The applications with any fogger, thermal or mechanical, that can deliver droplets of less than 20 microns, can be manually or fully automated and pose only minimal risks to operators or animals.

All birds that became a nuisance and safety problem in the hangars of TWA and AA at LaGuardia, and TWA warehouse at Newark Airport were successfully driven out by fogging ReJeX-iT⁷ TP-40 with a Curtis Dyna-Fog AGolden Eagle® thermal fogger.

KEY WORDS: ReJeX-iT⁷ TP-40, birds, bird repellent, fogging, hangar, warehouse.

INTRODUCTION

Airplane hangars are great places for starlings and pigeons to nest and roost. The buildings are large and high, and there is not much activity to be disturbed. And then there are the planes. They offer another opportunity for roosting and nesting without the disturbance of predators. No wonder birds love these structures. And who wants to set up explosives or shoot the birds in the hangars? However, the birds are not welcome in this environment. Their droppings are damaging to airplanes and airplane parts and a nest in an engine can cause serious problems. So far, most companies struggle with this bird problem using the marginal or non effective methods available just to have a program. They are still in need of an efficient method to solve the bird problem with an environmentally acceptable method.

The effectiveness of Methyl Anthranilate (MA) as a taste repellent has been demonstrated under many conditions and has been documented in many publications (Kare 1961, Dolbeer 1992, 1993, Mason and Clark 1996, Vogt 1997). The treatment of fruits and berries with ReJeX-iT⁷ AG-145 works very well in reducing or even eliminating bird depredations. However, the protection is only required for a short period during the final ripening of the fruits (Curtis 1994). The application of ReJeX-iT⁷ AG-36 to turf has shown great results in repelling geese from lawns, golf courses, parks and other manicured grass areas if done at the right time. However, taste repellents are ineffective for roosting and nesting birds and another delivery system is needed. The application of the MA formulation to the eye and mucous membranes of the birds via an aerosol has first been demonstrated on a landfills in 1993 (Nachtman 1993). Several large experiments on roosting starlings (*Sturnus vulgaris*) in trees have been shown to be very efficient in dispersing all birds by the professionals (Lewis 1995, Vogt 1997). The effectiveness of the aerosol to disperse geese (*Branta canadensis*) and tree swallows (*Stelgidopteryx serripennis*) has been demonstrated (Dolbeer 1996).

While the dispersal effect of the repellent can be seen with the first fogging, complete dispersion of all birds requires three elements. The product, ReJeX-iT⁷ TP-40, an aerosol generator suitable for the job and a professional applicator trained in the product and method.

STUDY AREA

The fogging experiments were done on three different test sites, three American Airline hangars at La Guardia

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from November 11-13, 1997, a TWA hangar at La Guardia from June 15-17, 1998, & a TWA warehouse at Newark Airport from November 3-5, 1998. The test sites had a population of about 200 nesting and roosting Pigeons (*Columbia livia*) and 500-1,200 roosting Starlings (*Sturnus vulgaris*). In the past, the birds were controlled with Avitrol¹. It was time consuming and did not always work as desired, and in addition, usually resulted in 10-15% dead birds. Not happy with the results, the pest control operator decided in 1997 to test the fogging application of ReJeX-iT⁷ TP-40 as an alternate method with great success.

MATERIALS & METHODS

All fogging applications were done with a Golden Eagle, Electric Start XL (Model 2610, Series 3) aerosol generator from Curtis Dyna-Fog Ltd.² (Westfield, IN). The Golden Eagle is a thermal fogger with a formulation output of 0-9 gal/hr (0-34 liter/hr) and a droplet size of 0.5-30 microns. The fogger was set at a maximum fogging rate of 4 gal/hr (15 liter/hr) to produce a dry fog.

The Bird Repellent ReJeX-iT⁷ TP-40, U.S. EPA Reg. No. 58035-7, from RJ Advantage, Inc. is a clear liquid, lighter than water and completely immiscible with water. It is formulated from naturally occurring food grade ingredients listed as Generally Recognized As Safe (GRAS) by FDA. The formulation contains 40% active ingredient Methyl Anthranilate (MA) and has a viscosity of 16 cps. The formulation is used as is without any dilution.

All fogging applications were done by a fully licensed Pest Control Applicator³ at 1:30 a.m., when the least number of people were present. The operation and the low risk were explained to the remaining people. Due to the benign nature of ReJeX-iT⁷ TP-40, no special safety equipment was used by the applicator.

After counting and identifying the birds present, the fogging operation was started and continued intermittently for about 30-45 min. until all birds had left the area. No difficulties or problems were encountered during the fogging operation. The skilled operator had no problem to direct the fog into the direction where the birds were roosting. For each fogging operation 64 ounces (1.8 liter) of ReJeX-iT⁷ TP-40 were used.

RESULTS

The dry and dense white fog of ReJeX-iT⁷ TP-40 was highly visible and rose to the 75 feet (23 m) high ceiling of the hangar. The fog had a strong Concord Grape-like odor, characteristic of MA which dissipates after a few days. It slowly drifted with time and dissipated completely without wetting any surfaces.

The three American Airline Hangars at LaGuardia, NY of one acre (4,000 sqm) enclosed area (175'*250') and a height of 75 feet (23 m) each, had a population of 200 pigeons and 1,200 starlings. During the first application on Nov. 11, 1997 all birds left the test sites, but came back later as they had no other place to go for the rest of the night. The second night on Nov. 12, 1997 all pigeons had come back and 90% of the starlings. As during the first application all birds left on fogging and returned later after the fog had subsided. On the third night, Nov. 13, 1997 all pigeons had gone and only 100 starlings were remaining. To assure complete removal of all birds, the third application was done as the two preceding ones. An inspection two weeks later showed no birds present in the hangar.

The one acre (4,000 sqm) TWA Hangar at LaGuardia, NY had 200 pigeons and 500 starlings. During the first

¹Avitrol (4-Aminopyridine formulations) from Avitrol Corporation, 7644 East 46th St., Tulsa, OK 74145.

²Curtis Dyna-Fog, Ltd., P.O. Box 297, Westfield, IN 46074-0297.

³Tony Kurtz, MLK Termite & Pest Control, P.O. Box 954, Levittown, NY 11756-0912.

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fogging application on June 15, 1998 all birds left and returned after the fog had dissipated. The second night on June 16, 1999 all birds were back in the hangar. Fogging operation proceeded as the first night. On the third night on June 17, 1999 all pigeons were gone and only 100 starlings had returned. The third fogging application was done as the two preceding ones. No return of the displaced birds was observed. An inspection two weeks later showed no birds in the hangar, except two young starlings that had died of starvation as the adults did not return to feed them.

The TWA Warehouse, Newark Airport, NJ of 2 acre (2,000 sqm) with a height of only 25 feet (8m) had a population of 750 starlings roosting in the structural beams. The first application was done in the night of Nov. 3, 1998. All birds left and returned after the fog had subsided. On the second night on Nov. 4, 1998 only half of the starlings had returned. On the third night no birds were observed. To assure no hidden bird, the warehouse was fogged as on the first day. An inspection two weeks later showed no birds in the warehouse.

DISCUSSION

In all three locations the fogging operation was very successful in driving all the birds out of the effected areas after three fogging operations on consecutive days, without a single fatality. Two weeks after completion of the fogging operation no birds had returned. Due to the nature that all tests were done during the night, where the birds did not have enough light to fly to an alternate roosting site, they returned to the hangar once the fog had dissipated. Therefore, several fogging operations had to be performed to teach the birds that the habitat was not inviting anymore. Fogging operations in the early evening with some daylight still available can sometimes be more efficient on the first fogging operation. (Vogt 1998).

While the fogging of ReJeX-iT⁷ TP-40 worked very fast in the described hangars, sometimes it can take several applications to get long term results. Depending on the location and the applicator's skills, it can takes from 1-6 applications to repel established flocks of birds for the season. The aerosol irritates the eyes and mucous membranes of the birds sufficiently to initiate the desired behavior modification without the problems of habituation. For best results, it is important to expose as many birds as possible to the aerosol and have enough daylight available for them to find an alternate feeding, roosting, or nesting sites. As with any other animal training method, it takes time to be 100% effective and cannot be accomplished in one operation. Therefore, at least three applications should be planed to get 95% effectiveness or an automated system should be considered, which uses less product. Usually, successive applications use less product than the first application as operators learn to become more efficient.

In open areas as little as 2.5 ounces (70 g) of product are sufficient to fog a one acre area. In the enclosed confines of a hangar or warehouse less than the 64 ounces (1.8 L) should give the same result.

The fogging of ReJeX-iT⁷ TP-40 represents a very direct method that has effectiveness well in excess of 95%. Success or failure is not a function of the product but rather a result of the training and experience of the operator. Fully trained applicators nearly always achieve 100% success rate.

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