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EARTHWORM CONTROL AT 8 WING TRENTON, ONTARIO, CANADA

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Summary

Because of environmental concerns, 8 Wing Trenton has not maintained any spraying program for many years. One of the direct result was a drastic increase of the earthworm population, a major attractant to gulls. This paper present the solution adopted by Trenton in an effort to resolve their earthworm problem.

Key Words: Attractants, Invertebrates, Chemicals

1. BACKGROUND

1.1 8 Wing Trenton is located in the southern part of the province of Ontario, Canada, in the lower Great Lakes area, in close proximity of Lake Ontario and bordered on one side by the Bay of Quinte. The aerodrome operates as a staging area for the Canadian Forces Air Transport Group mainly supporting C130 Hercules, A310 Airbus and B707 Boeing Aircraft. It also serves as a training area for Tactical Air Lift Operations. The annual movement average is 40,000, including many low approach and touch and go training missions. During the Period of March to December thousands of gulls can be seen in the area. Many of the birds already visit the aerodrome and necessitate intensive bird control efforts.

1.2 There has been a bird control program, using falconry, at Trenton for the past 15 years. In spite of this, there are still substantial numbers of birds that use the airfield and there are still many birds struck by aircraft.

2. THE PROBLEM

2.1 Even though it was long known that earthworms were causing problems at Trenton, it was not until 1992, following a Bird and Mammal Environmental survey, that authorities recognized the problem to be serious enough to warrant action. Following a rainfall, especially during spring and fall periods, large numbers of gulls are attracted by the earthworms. The numbers of worms are so important by time that they actually reduce the friction co-efficient of the runway.

2.2 Sevin, which is a licensed pesticide for earthworm control in Canada, was considered to control the problem. However, Sevin is a highly toxic pesticide that could result in secondary poisoning of birds if they ingest the worms. Also, the wing water run-offs are directly into the Bay of Quinte, which is the main water supply for surrounding towns and cities. The toxicity of the residue would be well above acceptable environmental levels given the very large areas to be sprayed. Furthermore, Health Canada advised Canadian Forces authorities that Sevin registration would not be renewed in 1996.

2.3 Because of the unavailability of a lower toxicity pesticide there were no spraying program maintained at Trenton for at least ten years. Mechanical sweepers were used to clean the runways when the number of earthworms was to high, however, this is a time consuming process requiring extensive cleaning of the sweepers during and after sweeping.

3. PROPOSED SOLUTIONS

3.1 In September 1995, Canadian National Defence Headquarters Staff visited 8 Wing Trenton with Dr Al Tomlin, Rhizosphere Ecologist for Agriculture and Agrofood Canada (AAFC)

London, Ontario Research Station to review the earthworm problem and provide the wing with control guidelines, including a monitoring system that would provide adequate information to predict the requirement for control and measure the effectiveness of control measures. *(The evaluation process will not be discuss in this paper as a video is available and will be showed at BSCE Chairman discretion.)*

3.2 Following Dr. Tomlin visit three possible solutions were proposed to Trenton:

a. allowing aerodrome access to a bait industry so it could pick up the earthworms for retail marketing. Even though this solution is environmentally friendly, the logistic and security requirements surrounding a 24 hours access of many people and equipment around the airfield would be too great;

b. it was also mentioned that some work was being conducted with vacuum machines to gather earthworms. However, it is presently in the experimental stages and no such machine is currently in full scale use; and

c. the spraying of Benomyl was also suggested. Though Benomyl is registered as a turf management fungicide, the minutes of the 22nd meeting of Bird Strike Committee Canada pointed out that when turf at airports was maintained with Benomyl, problems with earthworm were less likely to develop. Studies by Dr. Tomlin, who had conducted the original research on this subject, indicate that Benomyl applied at a rate of 2.24Kg A.I./Ha reduced earthworm populations by 85%. Another advantage of using Benomyl is its low toxicity.

3.3 Decision was made to spray Benomyl starting in November 1995. However, due to high volume of precipitation, the spraying was not completed and will resume in the spring of 1996. Also, following Dr. Tomlin demonstrated technic, the contracted bird and mammal control officer will be responsible for the monitoring of earthworms at Trenton. It is hoped that preliminary results will be available for the BSCE meeting to be held in London, England, in May 1996.

4. ACKNOWLEDGEMENT

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