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THE USE OF DETERGENT SPRAYING IN BIRD CONTROL

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Four years ago we started out with the premise that we could cause mortality in blackbirds with detergents. The first system used was a stand pipe where wetting agents mixed with water were pumped to aerial sprayers. Birds were then driven through the spray curtain. During two years of operation with three or four tests few successes were encountered, for it was difficult to get birds to go through a curtain of spray in any numbers.

At the same time people in the research division were using large airplanes in making applications and they were having some success using airplanes with water and detergents in affecting birds.

In 1968 the research division started using small planes for applying detergents to roosting birds. In March of 1968 there was a spring roost established at the Columbus, Ohio airport. The research division sent a man to work with us to treat the roost with a wetting agent to see what its effect would be on the population. The roosting area was made up of hardwood trees 25 to 30 feet high in an area of about four acres. There were approximately 300,000 birds, mostly starlings, in the roost. The applications were made one Sunday evening with a Piper Pawnee aircraft with a venturi spreader. Roughly 21 gallons of material per acre were applied to the roosting birds. It began to rain early in the morning, approximately 0.5 inches of rain, with a 13 mph wind, with temperatures of 45° F gave a wind chill factor of about 33° F.

To be effective, a low temperature and rainfall is needed for detergent treatment. The next morning none of the birds had left the roosting site, and there was almost complete mortality of nearly 300,000 birds. A few birds had left the area and were found up to one quarter mile away. The roost was located in an industrial area but very close to residential areas. Nobody was aware of the spraying other than the Game Management agent in Ohio and us. It wasn't until the next afternoon that local newspapers became aware of the project and as it turned out public reaction to the operation was quite favorable. There was TV coverage and newspaper articles, but I think there were only two complaints concerning the operation. It is of interest that even though the trees are still there, the birds have yet to again roost on the site.

Last year we again were involved with applications on roosting birds. Four applications were made in either March or early April. Prior to these projects we looked into using helicopters instead of fixed-wing craft to make applications. We found that helicopter noise did not affect roosting birds.

Our first application was made at Granville, Ohio where a helicopter was used. This roost contained an estimated 500,000, 70 per cent of which were grackles, in a four acre pine plantation with trees 40 to 50 feet tall. The area is completely surrounded by private residences, in fact one house was within 40 feet of the roosting site. The roost was causing aesthetic problems from an accumulation of droppings. There are high tension wires running through one end of the area, and a small pond to the south. We were concerned with run off into the pond but found it was diked thereby eliminating runoff problems.

The roost was treated with 20 gallons of concentrated detergent per acre. During the night there was 1.0 inch of rain with temperatures around 50° F., wind velocity 15 to 20 mph which gave a chill factor of 30° F. In the morning very few birds had been killed, but the majority of the birds at the site couldn't fly. They literally walked away from the roosting area. There were birds flying down the chimneys in nearby houses for they attempted to get under any kind of cover they could. There were 25,000 dead birds taken off four lawns in the area. My advice is not to treat near a residential area.

The dead birds at Granville were left to decompose. There was an odor problem, but it was masked primarily by the odor of the droppings that were already there.

The second operation this spring was near Carroll, Ohio, and a third in Mansfield, Ohio. Both of these roosts had large numbers of birds but at both locations a fixed-wing aircraft was used. One of the applications was made at two o'clock in the morning and the other in the evening, but it did not rain, and there was no mortality at either site.

The last operation was near Mansfield, Ohio. This was an ideal situation because the roost was located on the Mansfield reformatory grounds, and no one was allowed in the area except prisoners and guards. There were approximately one million birds in a white pine planting with trees up to 40 feet tall. Treatment was made with a helicopter at 20 gallons per acre, and a good weather front came through the night of treatment. The temperature was 42° F., wind velocity eight to 12 mph. within the roost, but outside the roost it was 40 mph, rainfall 1.4 inches, giving a chill factor of 29° F. Estimated mortality, which occurred mainly in the roost, was near 530,000. Over 100 banded birds were recovered a good percentage of which were from the Lake Erie area where corn damage occurs. Decomposition didn't start for about thirty-five days after treatment, and there was an odor problem. The reformatory people were concerned with flies, but this did not turn out to be a major problem. However, there is a real sanitation problem with this kind of control procedure.

In summary I would say that we have a material and a method that can be used in some situations. However, I think that with this method or with any method proper justification is needed before future applications can be made. In Ohio justification will be to equate roost treatment to damage reduction.

Before we treated these roosts, various criteria were met. Such things as water supplies near the roost site, fish in the area in an aquatic environment, other bird species in the roosting area hazards to the aircraft and so forth were all looked into. The final approval for treatment comes from our central office in Washington. Approval is also received from conservation agencies, and conservation groups in the area. So far the public relations have been favorable. We haven't had any real complaints yet, primarily I think because we have been very restrictive in where

we sprayed and also we have not tried to hide our activities from the public. Mortality of non-target species is not a problem. In Mansfield we recovered a few robins, crows, and slate-colored juncos. At Granville we recovered a few cardinals. We did search fairly thoroughly for non-target species, so we feel confident that very few were killed.

DISCUSSION:

DELEGATE: What about phytotoxicity to the trees?

R. SMITH: This is a tough question because many of the trees in the roosts were already dying from the high nitrogen in the soil due to the build-up of bird droppings. However, phytotoxicity does not appear to be a problem with dormant trees.

DELEGATE: What height did the helicopters fly over the roosts? I believe you said it did not disturb the birds.

R. SMITH: Approximately 75 feet above the tree tops. We haven't had any problem with disturbing the birds with three passes over the roost. Helicopters are much easier to reload, since they can land very close to the roost site. Also, the helicopter pilots we have worked with will fly in the rain while the fixed-wing people will not and should not go up when it is raining.