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WETTING AGENTS AND THEIR ROLE IN BLACKBIRD DAMAGE CONTROL

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I just happened to think of an example when John was talking about firecracker danger. In south Florida in the sweet corn fields they have "spray middles" cut down through the fields, and at times some of the farm laborers will go through these middles on a tractor with an apronful of these cherry bombs, lighting them on their cigars or cigarettes, and throwing them out to chase the birds. I did hear one case where the laborer lit one and apparently dropped it back in his lap; the whole shebang went off and disemboweled him.

I'm going to speak on wetting agents, which are a class of surface-active agents or surfactants along with soaps or detergents. I would like to second John's philosophy on this balanced approach. Our blackbird problem in Ohio and Michigan is sufficiently serious that we can scarcely afford to overlook any measure of control.

Wetting agents are not a new happening on the blackbird damage control scene. Actually since the early '60's we have been interested in finding the ideal agent and method of application for lethal control of blackbirds, starlings, and their roosts. The principle, as with so many other damage control techniques, is relatively simple: get roosting birds wet enough when the weather is cold, the temperature drops to 30 or so degrees, and they succumb to heart failure, respiratory system failure, etc. In practice however, as in many other damage control techniques, the story is not quite so easily told. The advent of the newer biodegradable surfactants have all but eliminated one of the problems, that of chronic water pollution. However numerous other problems must be solved before this method can leave the drawing board.

Certain criteria must be met before specific wetting agents can qualify for field trial. The candidate agent must be readily soluble in water, have maximum wetting ability at moderate concentrations, degrade rapidly, have minimal toxicity to fish, and maximum absorption on soils (this is to control water pollution in underground systems). Somewhere there may exist a surfactant with all these characteristics, and if anyone here knows what it might be, I'd like to know.

Turgitol 15S9 is the material which has been the most widely used in field testing in a number of states; Georgia, Ohio, Tennessee, Arkansas. It has excellent wetting abilities and under normal conditions degrades in about ten days.

But it is very toxic to fish. Little is known about its soil absorptive qualities. This I might mention is important to us with our rural blackbird roosts in the Sandusky Bay marshes and the general Lake Erie marshes; these roosts are composed of redwinged blackbirds, grackles, and cowbirds.

Some of the sucrose esters are being worked with and they are considerably less toxic to fish. But there's quite a bit of difficulty in getting them in aqueous solutions which are needed to spray the material on the birds.

One of the confounding problems is how to get enough of the agent on the birds to sufficiently wet them. Methods of application have ranged from herding flocks of blackbirds through ground spray apparatus to applications of the material with light aircraft and heavy aircraft, specifically Grumman AgCats (at about 25 gallons per acre) and B-26 and C-123 aircraft at application rates of 900 gallons per acre. What it amounts to is that we need either high concentration at low gallonage rates or the reverse of that followed by additional water drops. Or in the case of a light plane which put out a minimum of wetting agents, we might put this material on just prior to a cold front, allowing a natural rainfall to furnish the required water.

There are some criteria which must be met before a roost can be treated: there must be a high concentration of blackbirds in the roost, a low population of desirable birds like ducks, robins, etc., and the drainage from the roost area not be into a fish pond or river that abounds with fish. Also since some of these wetting agents are phytotoxic, the roosting site must be of little value.

Directly comparing the light versus heavy aircraft- the light costs less, is more accurate (they've had some misses with the heavier aircraft), and a considerably more concentrated solution appears to be required. As John said, no one control measure will solve the blackbird problem and only through diligent research and field trials will we be able to come up with a wetting agent and a method of application which may help us out with this problem.

I have some slides I'd like to show.

This is a roost at Johnstown, Ohio, just south of us here. It is a coniferous tree roost, and at times there were 2 million birds here. The pond you see was frozen over when the picture was taken, but there are quite a few fish in it. For this reason we didn't think aerial application was desirable. We used a "standpipe" method of getting the wetting agent onto the birds. These are pipes 21 feet tall; there's a spray head on the top; we have a hose network and an educer valve which goes into the tank of wetting agent. We used a fire truck which pumped the water through this educer valve, then sucked the wetting agent up, and diluted it to a predetermined concentration. At night water cascaded out of these spray nozzles. A group of us went back through the trees, and herded the birds through this curtain of spray; sometimes we did some good and sometimes we didn't.

This shows a floodlight arrangement we used. Some of you may know of floodlight traps that were used in various situations against roosts. We put this bank of floodlights in front of the curtain of spray to attract the birds into that area so that they would fly through the spray.

This is in Georgia, Moody Air Force Base—a roost which contains millions of birds. Some of you may know of the problem there with bird—aircraft strike hazards. Here is a B-26 which was used to literally dump wetting agent on the birds in the roost; it has two 500 gallon tanks and was capable of putting out 900 to 1000 gallons per acre. Here are some cowbirds wet with the wetting agent that were picked up after being wetted. You can see how wet their feathers have become.

Thank you very much for you attention.

BECK: Don, stay up here please and we'll open this up to questions for either you or me.

FITZWATER: Don, on your floodlights-are they set so they don't hit the spray?

HARKE: Right.

FITZWATER: We had a little trouble. We had an interesting, small project in Carlsbad, New Mexico where we ran standpipes out of irrigation hose just to the top of some forty foot high mulberries. We had a population of about 3000 sparrows. We tied this into the water line, and had an inductor that brought the detergent up through the lawn sprinkler heads. We only treated two trees and tried to drive the birds into the trees. One of the trees was right by a street light which the second night we did get turned off, but the first night you could see the birds veer away from the spray because they could see it. But we had interesting enough results that I think it's worth looking into.

HARKE: This is the problem we experienced—that the light was reflecting, when we originally had it behind the curtain of wetting agent. The birds diverged or went around the sides of the spray.

FRANCIS: Don, I'd like to ask you on these wetting agents—is there a seasonal difference in the effectiveness of it. In other words will simply wetting the birds be enough or must you have reasonable cool weather to have it work?

HARKE: Jim Caslick of the Division of Research has done most of the lab work on this and he says a temperature of 50 degrees or less is required for maximum mortality.

BRINK: Don, I wonder if you have, or can see in the picture any answer to that Moody Air Force Base situation?

HARKE: No, not in the immediate future. I think John Seubert could give you more information on that.

SEUBERT: Moody is a particular problem because the roost is a large one and the bird densities are quite low. But again if we had the right type of agent Moody would be an ideal place for use because the land is under federal control.

BROWN: We have these exploders banging away all over the orchards of southern Ontario and they have absolutely no effect on robins. I might suggest that one possibility is this: that the robins actually learn by the sound of the exploders that there is ripe fruit available! (laugh)

BECK: Well, according to Pavlov that is quite possible.

LIEB: With this Castalia roost and the weather being what it is, have you done anything successfully down there to move those birds to protect the corn?

HARKE: Which Castalia roost?

LIEB: The roost affecting the corn growers in the Castalia-Sandusky area.

HARKE: Have we done anything with wetting agents?

LIEB: Well, have you done anything at all to successfully move them because they don't seem to have as much of a problem this year as they did last year? Maybe they did something, I don't know.

HARKE: I've been putting out lethal baits in that area, but I certainly don't presume that I've put out enough to halt bird damage. I don't really know.

LIEB: To make you feel good, I think you have, because some of the farmers down there say they don't have half the problems they've had. They have fewer birds, but they don't know who's doing it, and they don't want to know.

HARKE: That's what they've been telling me.

RUSSELL: What was the wetting agent you gave as an example that was toxic to fish?

HARKE: Turgitol 15S9, a Union Carbide product.

OCHS: Do you have any that aren't toxic?

HARKE: We'd like to know that, too.

BECK: Now come on. You know that some of them that we think basically are not toxic do have some toxic effects on aquatic invertebrates, don't they?

OCHS: John, most of the surfactants heretofore have been classed as inert ingredients. Therefore we have damn little information on surfactants per se. We can surmise the effect and do as we darn well please, but until we have data to support what we may think, we have nothing.

STECKEL: You've been in Washington too long, Paul. (laugh)

BECK: We do thank you for your attention on these two topics. I advise you to corner Don Harke and get better acquainted with him; I think you're going to see this young man's name and some of his results for a considerable period of time. Let's give him a hand.

The next topics we're interested in here are primarily feed lot problems, and we're comparing sodium fluoride and Starlicide. Actually I think we should say DRC-1339 which is a code number for a particular chemical. We're comparing the technical grade of that chemical as used by our Denver research people with sodium fluoride. I don't think we should say we're comparing starlicide which is a registered commercial product with sodium fluoride. We're actually comparing two chemicals, so even though Starlicide is mentioned I think we should limit our remarks to the technical grade of the compound known as DRC-1339.

The next two speakers are friends of mine; one is a new friend and the other is a friend of long standing. John De Grazio is a member of our Denver research team and is another one of our young men who will be heard from for a long time to come. John has done a lot of work, as have his associates, and he deserves a lot of credit. I'm sure you'll enjoy hearing from John.

The second man who will speak is Jim Steckel. All of the pest control operators know him, and most of us bureaucratic drones know him also. Jim is going to present sodium fluoride, its possibilities and its uses. When we finish these two, we'll have questions. John De Grazio.