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September 1968

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Steckel, James, "SODIUM FLUORIDE IN FEEDLOT STARLING CONTROL" (1968). *Bird Control Seminars Proceedings*. 168.

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SODIUM FLUORIDE IN FEEDLOT STARLING CONTROL

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I'm going to talk about the toxicant, sodium fluoride. This, of course, is not new to anybody who's been in the pest control business. It's very common and is a material that is readily available to industry wherever you might be—sodium fluoride, NaF.

Sodium fluoride was a material used in veterinary practice in its early days as a worming agent. When the first problems developed with the swine feeders, particularly with TGE (transmissible gastroenteritis), they were needing a toxicant that they could use to control the birds that were stealing feed out of the food bunkers and leaving their droppings there. Some birds died in the area, causing, the farmers felt, the disease TGE. Looking at the different toxicants we had available to us, the first was strychnine which is highly toxic to swine. That completely ruled it out because the least consumption of strychnine would mean sure death in the case of hogs. Then we found sodium fluoride, a material already used for worming, and that meant there was some tolerance to sodium fluoride in swine. It was then developed into a bait material that would be used at a level of 3% for lethal control of starlings.

In the registration of this material, it has some very definite limitations, just as DRC-1339 does. This material is for use on starlings and blackbirds only. It's not for use on other pest birds; it's rather specific to starlings and blackbirds. The pellet size is too large for the small birds and sparrows to feed from; it was designed this way intentionally. Sodium fluoride is detoxified in the crop of cropped birds; consequently pigeons and all other cropped birds have a definite tolerance to it. They can handle it quite well. It was designed for agricultural use only. It was not specified in the registration for feed lot use only, but it was specified for agricultural use only. This allows it to be broadened a bit, but basically it is a feed lot product.

It also has a limitation of being used during periods of inclement weather; this means basically winter weather. This is to protect the migratory protected species that might be available during other times of the year and could be possibly feeding at the same area.

Sodium fluoride is not a slow-acting toxicant as is 1339. It is medium-fast acting; not as fast as strychnine. There is a real possibility that birds will die right at their feeding location, if they feed over a period of time there.

As we said, some of the specificity was developed by the size of the pellet. The pellet is almost the same size as the starlicide pellet, and it's a pellet that can be readily ingested by the starling. It's something he's used to and can handle quite easily.

Sodium fluoride does not have great secondary hazards although I don't think we can say that it has no secondary hazards. We aren't too concerned about the hogs or beef cattle eating them; beef cattle won't normally eat the dead birds, hogs will. We have stated in the label to pick the birds up as much as possible and don't feed them to the hogs. However in tests we have fed poisoned birds to swine and have not been able to get toxic levels ingested by the swine. I would imagine that if dead birds were all that was available there could be a possibility of toxication; we haven't gone that far.

As in all materials, the success depends on the acceptance. All these toxicants will kill the birds. It's just a matter of getting that toxicant to the bird. This presents its greatest problem to us just as it does with 1339 and any other materials. We developed this product to combat the starling problem in swine feed areas. Swine food is a little different than poultry food or even some of your big cattle feeder operations. Consequently the carrier is not as acceptable in other areas as it is in swine lots. If you're going into other areas, you have to develop the feeding habit with this type of a pellet before you can give them the pellet and expect them to take it. People working in bird control in poultry areas have found it is really not an acceptable material. They can get some kill if they can get the conditions just right, but it's not nearly as acceptable. Poultry pellets have a much darker appearance, a higher content of alfalfa. The bird just notices the sodium fluoride pellet as a strange color, and it certainly must have a stranger odor or taste. We had this discussion yesterday whether birds can taste or not taste; we think they can. So it would seem that if this were to be a real successful tool, you would almost have to pick out the carrier and select color, taste, and content for each of these feeding situations.

The material presently available on the market contains corn meal, meat scraps, blood meal, and then the sticker or adhesive material to hold the pellet together. Corn meal is the bulk; meat scraps and blood meal give it the protein it needs to be attractive. Starlings are basically meat eaters; they spend most of their time eating insects when they are available. We try to give them something that would at least meet their diet requirements and their taste preferences.

Dilution is not necessary, although in areas where you have very heavy feeding, dilution certainly makes it more economical and still a satisfactory material. Under normal conditions three pellets are a lethal dose for a starling. If you get this in a very severe winter situation where all the foods are covered, the bird will come in and eat a good deal more than three pellets, so you can use dilution ratios. We have not gone above 1 to 12 in our own practice; and on the label we don't talk about dilutions even though they are certainly being used and, under these circumstances, satisfactorily so.

I think those are all the comments I would have on sodium fluoride. If there are any questions I'm sure you'll have an opportunity to ask.

DISCUSSION:

BECK: I'm sure Jim remembers, but neglected to mention, that this material is, in its present form, not very toxic to poultry or hogs. But if you use it around cattle feed lots, you must be very, very careful because sodium fluoride is exceedingly toxic to cattle even in small quantities. Do you have questions for these two gentlemen?

RUSSELL: Did John say that he did spread his diluted bait in the cattle pens themselves?

DE GRAZIO: Yes. When we were running our early trials we spread the bait in the cattle pens and on the mounds that they had in the middle of the pens. In the alleys we put cups on posts when we were first testing this chemical in feed lots. I believe the label on Starlicide says "restricted to alleyways."

BECK: I might comment here that in the eastern United States the results with the particular method that John has described have not been as good as the results he obtained. This is not due to any fault of the material or the way it's put out. It's due more to the difference in the size of feed lots, the land management practices, and feedlot management practices that are prevalent in the East. If you're trying to use a pellet in an area where chopped silage is the rule of the day in cattle feedlots, you're going to have trouble in getting an efficacious use.

SCHENDEL: What about the possibility of prebaiting? I know it isn't commonly done, but what has been done in seeing whether there is any value in prebaiting? Can you change birds' habits to eat some particular material that isn't readily available to them right in that feed lot?

DE GRAZIO: We've never prebaited in feed lots because in a sense they're already prebaited, at least in the western United States. They have pelletized feed that they use in their cattle ration and some of the alfalfa pellets seem to be similar to the poultry pellets that we use. You get spillage along feed bunks, some of the hard grains are passing through the catties' intestines, so in a sense it's already prebaited for you.

BECK: You can, if you wish to prebait, use exactly the same type, color, and composition of pellet, and then use the treated pellet regardless whether it's sodium fluoride or DRC-1339. You can prebait, yes.

STECKEL: I'd just like to comment on this. We shipped some of our materials into a foreign country where pellets were not used in a feeding situation at all. They were using chopped sugar beet pulp; this was all the animals had ever seen. We had to develop the acceptance of a pellet, which we were able to do, but it took three weeks of pretty concentrated effort. In fact they had to close off the

access to the sugar beet pulp and almost force them to come to the pellets. Once they got started on the pellets there was no problem—they would come to the pellets and we could open up the sugar beet pulp and they'd stay with the pellets. We had to get a sweetener into our material because they were used to getting a sweet taste from the sugar beets. It can be done, but it's not easy.

SHICK: DRC-1339 is sold under the trade name of Starlicide. In all fairness to Jim, what's his product sold under?

SPITZ: "Steckelcide" (laugh)

STECKEL: That's right, it used to be steckelcide, but after this morning I'm going to call it "Spitzicide" after our famed psychologist from Houston. Fantastic. I don't think he's a pest control operator any more, I think he's a master psyche. Seriously, it's called Torco Starling Pellet. Excuse the commercial, but thank you for the offer.

PIERCE: Jim, would you comment on bait placement of your material?

STECKEL: We normally try to put this bait up on top of the feed bunker in a feedlot. We use flats, kind of like those your wife comes home with filled with three dozen petunias. If we're in a heavy weather condition we build a little slanting roof on it to prevent the snow and rain from coming into it. Out on a farm in a feeder area where they're just dumping feed in big troughs, we will then pull high wagons in and set these flats out into the wagons so that the cattle or hogs can't get to the pellets. We will also nail flats on the tops of fence posts or put them on the outer edges of loafing sheds. We don't put this material down at ground or feeder level. Does that answer your question?

LEIB: Does the weather affect the material? For example if it gets wet or snowed on?

STECKEL: It causes the pellet to disintegrate if it gets a lot of moisture. Just to get some snow on it, stay cold, and the snow blows off, it won't break that pellet down. Pelletizing is just a standard process and we use a standard adhesive sticker. It just can't stand that much moisture.

BECK: We have time for one quick question over here.

DELEGATE: Do you have any experience with Starlicide in hog feedlots?

DE GRAZIO: The Denver Center has never run any tests in hog feedlots. No, we don't have any experience.

BECK: These two gentlemen have given us good presentations. I hope that you'll contact them and discuss further questions and comments you may have

with them. Since I no longer live in Ohio, I can now say that Jim is a fine example of quality craftsmanship in the pest control industry. This man has worked well with governmental agencies for quite some time, and when you receive your copy of the bird management guide, this is the man you have to thank for that.