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BIRD CONTROL IN CULTIVATED BLUEBERRIES

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Birds have always been feeding on cultivated blueberries. The location of planting of blueberries into areas away from the Lake Michigan fruit belt has resulted in serious bird damage and fruit loss. The damage and loss in the concentrated area of blueberry production varies with the size of the blueberry crop and the wild fruit crops.

The main species of birds damaging blueberries in Michigan and northern Indiana are Starlings, Grackles, Robins and Orioles. The Starlings are the most numerous and flocks of 50 to 500 birds are very common. Grackle, Robin and Oriole populations vary from field to field and their numbers appear to depend on the nesting sites in the area around a blueberry field.

Blueberries grow on a high organic or sandy type soil with a high water table. The soil is acid and not suitable for many crops, except blueberries and woods, so the natural conditions exist for nesting sites, food and water.

The bird damage is of several types. First, there is the direct loss of fruit that the birds eat. Then, there is the torn and ripped berries which were normally discarded by hand pickers and were not of any particular concern until mechanical harvesting collected all of the berries, good and bad, into containers that were then sorted at a centralized cleaning shed.

The damaged berries had to be sorted out by hand which was expensive. The juice from the damaged berries caused the good firm berries to have a wet appearance and the juice became a very good medium for mold growth.

Birds are known to be carriers of bacteria such as salmonella-and with the strict specifications being placed on all food products there is a growing concern that birds could actually be contaminating fruit.

The first control methods used were shotguns, firecrackers and carbide guns. These worked to some extent but were time consuming and expensive to operate or maintain. Many times they were not used in the early morning hours when most damage was done. In the winter of 1964, some very concerned fruit and blueberry growers met to try and work out a suitable method of control. The U.S. Fish and Wildlife people suggested the use of the 8' X 8' X 6' wire starling decoy trap which was successful in starling control in the state of Washington. With proper supervision this helped to reduce the starling and grackle population. A group of fruit growers in Berrien County hired a retired person to daily bait and clean the traps but at times this was not sufficient to provide control.

In 1965, several 25' X 50' wire decoy traps were erected and excellent catches of the larger flocks of starlings were obtained. One blueberry grower trapped an

estimated 35,000 starlings and grackles. This again required daily or twice daily servicing of the traps.

The decoy traps were widely used for starling and grackle control; however, as labor became more scarce and higher priced, the blueberry grower did not always service the traps for the best results and the traps did not control robins or orioles.

In 1967, we caged some bushes in a field near Nunica, Michigan. The Earliblue variety yielded 19 pounds of berries per bush that was caged and 22 pounds from the uncaged bush. The Stanley variety yielded 17 pounds per bush that was caged and only 11 pounds from the uncaged bush or 35% loss.

While caging would appear to give control of bird damage on some varieties, it is not practical for the commercial blueberry grower who must use the mechanical harvester which is 12 feet high and 12 feet wide.

In 1968, we tested an experimental model of the Av-Alarm manufactured by the Santa Rita Laboratories in California. We did learn that the sound distressed the Starlings so that the flocks would either stay out of the blueberry fields or fly in and out without much feeding.

In 1969 and 1970, with cooperation with Mr. Bill Shake of the U.S. Fish and Wildlife Service, attempts were made to assay the actual dollar damage done to a blueberry planting and what affect the carbide gun, BioSonics taped scare call and Av-Alarm electric sound device had on control of bird damage. Both the BioSonic and Av-Alarm units were battery operated and photo cell controlled to turn on and off automatically. These features are of great importance to the blueberry grower who is faced with a shortage of labor and increasing labor cost.

It was necessary to select fields several miles apart so that each could be evaluated on its own merits. However, we soon learned the bird population varied from field to field as well as the species. Also, the tagging and evaluation of fruit for damage was very unsuccessful.

The battery powered equipment was not fully evaluated because at some time during the studies one or the other piece of equipment was stolen from the field. While the equipment was designed to rock the birds, it probably wound up at a rock festival!

This year, 80 Av-Alarm units have been sold in Michigan and northern Indiana. Some blueberry growers have claimed very good bird control, especially of the flocking starlings. The growers reporting the best control also spend the most time varying the sounds produced by the device or use decoy traps, carbide guns or shotguns in addition. It appears to me that each blueberry farm has a particular bird problem and that each farmer needs to spend some time to determine what his problem is and how best to control it.

The blueberry grower is concerned with the actual fruit or dollar loss. The Michigan Blueberry Growers Association is the growers' Marketing cooperative. The fruit sold by the Association must be free from insects, pesticides, foreign material, bacteria and within limits on mold.

This year, research work indicated that bird pecked berries may actually have more mold; and since birds are known to carry bacteria such as salmonella, we are concerned that they may also spread this or some other bacteria. More research is needed to determine this potential hazard.

Bird damage to blueberries causes a financial loss to each and every blueberry grower. The grower now has several tools to use to eliminate this loss. Namely, the

exploding devices, decoy traps and Av-Alarm. With proper use of these tools, he will minimize his loss and have a cleaner and more wholesome fruit to sell.

DISCUSSION:

DELEGATE: Does the association or do the farmers contract for this control work?

J. NELSON: The individual growers are doing it on their farms themselves.

R. SMITH: Have you had any complaints from the residents in nearby areas about the noise of the Av-Alarms?

J. NELSON: I have not heard of any complaints on it, no. Probably the reason is because in Michigan and Northern Indiana where we are growing blueberries we have generally been applying pesticides by aircraft for the last fifteen or twenty years. We have had a few cases where the grower's neighbors objected to airplane application where the planes come in at tree-top, or bush-top level I should say, and apply these insecticides. But they are used to some of these noises annoying them and waking them in the morning, so this may be one explanation why they are not too up-in-arms about the Av-Alarm.

B. REED: Do you have a dollar estimate on the damage?

J. NELSON: No, we do not have a dollar estimate on the damage. This, as I said, varies from field to field, and the bird population concentration is different. It is very difficult to come up with an actual figure.

B. PETERSON: With the new system of mechanical harvesting where it actually picks and sorts the berries, won't you get a better idea of the percentage being damaged as opposed to the old method-of just throwing them on the ground?

J. NELSON: Well, there would be a possibility of that. However, there is some damage from the mechanical means of harvesting, and there are some berries left on the bush. With the mechanical harvesting, unfortunately, we are losing about a third of our berries, because they are green, red, or over-ripe.