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3-1-1972

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Mott, Donald F.; Besser, Jerome F.; West, Richard R.; and DeGrazio, John W., "BIRD DAMAGE TO PEANUTS AND METHODS FOR ALLEVIATING THE PROBLEM" (1972). *Proceedings of the 5th Vertebrate Pest Conference (1972)*. Paper 22.
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BIRD DAMAGE TO PEANUTS AND METHODS FOR ALLEVIATING THE PROBLEM

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ABSTRACT: Investigations from 1969 through 1971 of bird damage to peanuts in south-central Oklahoma have shown that losses are caused mainly by common grackles (Quiscalus quiscula). These losses, as high as $36 per acre, have been reduced primarily through the use of exploders and early harvesting of the crop. A fright-producing chemical, 4-aminopyridine, was also effective in scaring grackles from windrowed peanut fields.

Banding has shown that many of these grackles breed in western Nebraska and Kansas and winter in northeastern Texas.

INTRODUCTION

Bird damage to peanuts is a problem throughout much of the area where peanuts are grown. Farmers in Virginia have reported blackbird losses as high as $80 per acre, with losses highest when the crop is left in the field to dry either in windrows or stacks (Crebbs 1960).

We have been investigating the blackbird-peanut problem in south-central Oklahoma since 1969 in a 400-square-mi1e area of Johnston, Atoka, and Bryan Counties east of Lake Texoma. Peanut fields in this area are small (average 8 acres) and are often bordered or surrounded by oak woods. Willows and cattails, growing in the silt deposits of stream inlets to Lake Texoma, have formed excellent roosting habitat for as many as *4* million blackbirds during the annual November peak of migration.

Three blackbird species are involved in the damage to peanuts. Common grackles (Quiscalus quiscula) migrate into the Lake Texoma area in the greatest numbers (as many as 3.5 million roost there in early November) and cause most of the serious damage. Locally raised and migrant brown-headed cowbirds (Molothrus ater) *are* present in the area in October when digging of the peanut crop begins. Locally raised red-winged blackbirds (Agelaius phoeniceus) are relatively few in number. Large numbers of migratory redwings arrive late in November, but this is usually after the peanut harvest is completed. Both cowbirds and redwings cause noteworthy damage only when windrowed peanuts are left to dry for abnormal periods because of repeated rainfall.

In addition to blackbird species found feeding in peanut fields, meadowlarks (Sturnella magna), blue jays (Cyanocitta cristata), and crows (Corvus brachyrhynchos) are also responsible for some minor damage. Many Franklin's gulls (Larus pipixcan) have been observed in peanut fields, and an analysis of food contents in their stomachs has shown that they also eat peanuts.

DAMAGE TO PEANUTS

In 1969, 28,000 acres of peanuts were planted in the three counties in our study area. In these counties, the average yield per acre was 1,168 pounds of peanuts (Oklahoma State Board of Agriculture 1970). This represents a value of approximately $120 per acre. Harvesting usually begins in early October and is nearly completed by mid-November.

In order to assess the losses caused by blackbirds, 30 randomly selected fields within the 400-square-mile study area were surveyed for bird losses. The survey consisted of counting both the number of pods opened by birds and the number of pegs where pods had been removed by birds in each of four randomly selected plots per field. Each plot consisted of a 10-foot-long section of a peanut windrow. In 1969, fields in the study area lost an average of $1.67 per acre. In October, damage averaged only $0.02 per acre and was caused by cowbirds, redwings, meadowlarks, and crows. When grackles arrived in November, the average loss increased sharply to $2.38 per acre. The potential for damage by grackles was observed in one unprotected field where 300 pounds of peanuts per acre were lost in 1/2 day to a flock of 100,000 grackles. In 1970, although bird numbers were similar,

damage per acre in the study area was reduced to $0.24 per acre, primarily because of the extensive use of gas exploders. The greatest rate of loss ($6.36 per acre) occurred in a 17-acre field that was too large to be protected by its single exploder.

In 1971, bird damage was only $0.10 per acre in the study area; the highest damage recorded in any one field was only $1.34 per acre. An early crop, favorable weather conditions, an abundance of waste peanuts (stem rot caused many peanuts to fall off the vine), an excellent post oak (Quercus stellata) acorn crop (grackles fed more in woods), and the use of exploders all appeared to contribute to this low rate of damage.

DAMAGE PREVENTION

Cultural Practices

Probably the most effective way to prevent damage to the peanut crop is to harvest it before the grackles arrive. Hardy (1961) suggested this as a solution for peanut growers in Virginia, who also experienced damage by migrating flocks of blackbirds. Early harvested fields provide grackles undisturbed feeding sites with abundant waste peanuts to eat. In Oklahoma, early fall rains sometimes delay the peak of harvesting until after November 1, when the grackle migration occurs. This was the case in 1969, the year of greatest damage.

Gas-operated Exploders

Gas exploders are effective for preventing grackle damage, particularly in small fields surrounded by woods. Because of the short damage period (usually 3-7 days), they are especially effective since the birds do not become accustomed to them in this short time. We feel that exploders were largely responsible for the low losses in 1970 and 1971. In 1969, they were not widely used. By 1971, it was difficult to find a dug peanut field without an exploder, and three or four were often seen in large fields.

Shooting and Scarecrows

Shooting with .22 rifles and shotguns has been effectively used to frighten birds from peanut fields. However, because peanuts are grown in many small fields in this area, patrolling with guns is less economical than in many other situations.

Scarecrows were used more frequently before the widespread operation of exploders and were often effective against crows. The utility of scarecrows was enhanced when used in conjunction with exploders or shooting.

Chemical Baiting

The chemical fright-producing agent, 4-aminopyridine, which De Grazio et al. (1971) used successfully to deter blackbirds from feeding in ripening corn, has, on three separate occasions, frightened flocks containing up to 5,000 grackles from wind rowed peanut fields. Cracked corn baits were treated with A-aminopyridine (3% by weight), diluted with 99 parts of untreated corn, and scattered by hand between the peanut windrows at a rate of about 1 pound per acre of field. The few grackles picking up a treated kernel emitted distress cries and performed aerial distress displays. In doing so, they frightened the other birds in the flocks from the field. In one instance, crows were frightened from a field by several affected grackles. Flocks of cowbirds did not always leave fields quickly when members of the flock were affected by the chemical. However, the small amount of damage caused by cowbirds would seldom, if ever, warrant baiting fields used solely by cowbirds.

Additional tests with 4-aminopyridine are planned if exploders do not continue to protect peanut fields.

FOOD HABITS

An analysis of the food in stomachs of grackles, redwings, and cowbirds collected on evening roost flightlines during 1970 has shown peanuts to be a preferred food item. Peanuts were found in 23 of 32 grackle gizzards (72%) and accounted for 48% of the total contents. Insects, mostly beetles, were the second most important food of the grackles examined. Nineteen of 22 red-wing gizzards (861) contained peanut fragments which made up 33% of the total contents. Weed seeds, primarily Ambrosia spp. (ragweed), comprised most of the remaining redwing food. Peanuts occurred in 6 of 9 cowbird gizzards (67%) and made

up about 37% of the contents. As with redwings, weed seeds comprised most of the remaining cowbird food items. Most peanuts found in gizzards were probably from harvested fields, where many tons of peanuts were readily available and where birds often fed.

BANDING AND COLOR MARKING

Since 1969, 6,011 blackbirds (2,120 grackles, 2,620 cowbirds, and 1,271 redwings) have been banded in the study area in an effort to determine their breeding and wintering areas. Colored plastic streamers of the type used by Guarino (1968) were attached to the bands of most of these birds to increase their recovery rate.

Most banded grackles have been recovered in western Kansas and western Nebraska during the breeding season, and in eastern Texas during midwinter. The most northern record of an Oklahoma fall-banded grackle has been reported from northeastern South Dakota in early fall. Information from sightings of colored streamers and from roost counts indicates that there is a rapid turnover of grackles in the study area during the damage period. We suspect that cold weather fronts are at least partially responsible for this movement.

Migrating flocks of cowbirds and redwings pass through the Lake Texoma area in the fall on their way to winter roosts in Texas. Band recoveries have shown that the cowbirds winter in southeastern Texas. Winter recoveries of two fall-banded redwings have come from northern Texas, just south of the Oklahoma peanut study area. Three Oklahoma fa11 -banded cowbirds have been recovered in the spring, two in Kansas and one in central Wisconsin. An Oklahoma fall-banded redwing was recovered in southeastern South Dakota in the spring, and one redwing, color-tagged in northeastern South Dakota in early September, was observed in the peanut study area in mid-November of the same year.

We expect to be able to further define the breeding and wintering areas of these populations as sightings and band returns accumulate.

LITERATURE CITED

CREBBS, T. C. 1960. Blackbird ecology and their relationship to agriculture in southeastern Virginia. M. S. Thesis, Virginia Polytechnic Institute. 100 pp.

DE GRAZI0, J. W., J. F. BESSER, T. J. DE CINO, J. L. GUARINO, and R. I. STARR. 1971. Use of 4-aminopyridine to protect ripening corn from blackbirds. J. Wildl. Manage. 35(3):565-569.

GUARINO, J. L. 1968. Evaluation of a colored leg tag for starlings and blackbirds. Bird Banding 39(1):6-13.

HARDY, J. W. 1961. Resident and migrant blackbirds in southeastern Virginia: Agricultural depredations and winter roost locations. M. S. Thesis, Virginia Polytechnic Institute. 74 pp.

OKLAHOMA STATE BOARD OF AGRICULTURE. 1970. Oklahoma Agriculture Annual Report, 1969/1970 (Issued in cooperation with the Oklahoma Crop and Livestock Reporting Service.) Oklahoma City. 99 pp.