Several species of birds are commonly called "blackbirds." Included among these are red-winged and yellow-headed blackbirds, grackles, cowbirds, rusty and Brewer's blackbirds, and starlings. After the nesting season, these various species gather in great flocks. From early summer to late fall, these flocks can cause significant damage to vegetable and fruit crops.

**Control** - Effective bird control depends upon three prime factors.

**Timing** - Control measures should be started at the first indication of damage.

**Persistence** - As long as the birds are present and the crop is vulnerable, control measures should be applied; however, intensive application of control during the first week or so in the damage period usually reduces the need for control measures later on.

**Diversification** - No single method is entirely satisfactory. Various devices must be used in combination and their placement frequently shifted.

**Vegetable Protection**

Corn, tomatoes, and other vegetable crops susceptible to bird depredation can be protected to some extent in a variety of ways. The use of mechanical frightening devices is probably the most widely employed method of reducing bird depredations. Avitrol, a chemical frightening agent, is rapidly gaining wider acceptance as an effective means of preventing blackbird depredation in standing field corn.

**Frightening Devices**

**Automatic Exploders** - Machines operated from tanks of carbide and water, acetylene, propane, or LP gas. Explosions should be timed for three to five minute intervals. Initial cost is high, but operating cost is low. They require careful adjustment and frequent maintenance.

**Rope Firecrackers** - Firecrackers are woven, at intervals, into a slow-burning cotton rope which acts as a fuse. To provide protection from weather, firecracker rope can be hung inside a stovepipe with an elbow at the top. If weather protection isn't necessary, hang rope directly on tree limb. To prevent the possibility of fire caused by firecrackers exploding on the ground, metal baskets should be placed directly under the firecracker rope.

**Exploding Shotgun Shells** - 12-gauge shotgun shells which fire a projectile that has a second explosion at 100 to 200 yards. Exploding shotgun shells are expensive, but useful as a supplemental device.

**Chemical Agents**

**Avitrol** - Avitrol FC Corn Chops 99 is a diluted medium cracked corn bait, which is registered for blackbird depredation control in standing field corn. The rate of application is one pound per acre but this pound may be applied to one-third of the acre being treated. Application should be made when the corn is in the milk stage.
When blackbirds ingest an Avitrol treated grain particle, they react in an abnormal manner uttering distress calls and flying about in an erratic pattern. Several reacting blackbirds can frighten thousands of unaffected birds from the treated field.

Since the vulnerable period of blackbird damage usually lasts three to four weeks, three treatments, spaced about six or seven days apart, are normally applied.

NOTE: Avitrol FC Corn Chops 99 is registered only for use by or under the supervision of Governmental agencies trained in bird control. All applications of Avitrol must be performed by properly licensed, Bureau certified applicators. Additional detailed information is available specifically for controlling blackbirds in field corn.

If Avitrol protection is desired, contact your local county agricultural extension agent or the nearest representative of the Bureau of Sport Fisheries and Wildlife.

FRUIT PROTECTION

Frightening devices, such as those mentioned under vegetable protection, are usually effective for vine and cane fruits, especially in small to moderately sized areas. Tree fruits can also be protected by sound devices, but more time, equipment, and persistence are required. Acetylene exploders have been effectively used in vineyards and orchards against starlings, grackles, and blackbirds. In some cases, they have not been as effective against other species of birds, such as robins, cedar waxwings, juncos, warblers, orioles, etc. Rope firecrackers have about the same effect as exploders, but cover a smaller area. In using either exploders or rope firecrackers, it is important to place the device well about the tops of the trees or vines. Exploding shotgun shells could be used in orchards as a supplement to automatic devices.

Sticky repellents have been used on vineyard posts to help control robin damage. Plastic twirlers, cloth strips, and other moving objects help reduce damage, especially in smaller areas.

Netting - Fiber netting that completely encloses the crop is one of the best protective measures for small fruit. With careful handling it may be reused over several seasons, depending on the material of construction.

Regulations - Blackbirds, cowbirds, and grackles are afforded protection by the Federal Migratory Bird Treaty Act. However, Section 16.22, Title 50 CFR, provides that, "Any person without a permit, may kill yellow-headed, red-winged, bi-colored red-winged, tricolored redwinged, and Brewer's blackbirds, cowbirds, and all grackles . . . when found committing or about to commit serious depredations upon any agricultural crop or ornamental or shade trees." Section 16.22 of the Federal Regulations does not permit killing any of the above-named birds in violation of any State law or regulation. If a State permit to kill the birds is required, such permit must be acquired before exercising the privileges afforded by Section 16.22. Before applying control measures, consult your State and local laws relating to the control of birds and to the purchase and use of fireworks.