Use of Avitrol Baits for Pest Bird Management
The purpose of this presentation is to provide overview training for the proper use Avitrol baits. The instructions listed herein are intended as a guideline and are not a replacement of the Avitrol Product Label(s). Always read and follow instructions on the Avitrol Label(s) for the product being used and the specific pest birds. 

The label is the law.
What is Avitrol?

Avitrol is a trade name of the Avitrol Corporation. It is used in bird control products manufactured and/or marketed by Avitrol Corporation, including a number of Avitrol Grain baits with 4-aminopyridine as the active ingredient, which are registered in the U.S. and Canada.
What is 4-aminopyridine (4AP)?

4-Aminopyridine (4AP) is an acute oral toxicant (chemical) which is used as a human drug for treating multiple sclerosis (MS), and other conditions involving nerve damage.
4-Aminopyridine (4AP)

It is used in Avitrol Brand baits because it has the ability to artificially induce a bird's natural fright response. This peculiar behavior is interpreted by the remainder of the flock as an alarm or distress reaction that frightens the flock from that location.
4-Aminopyrididine (4AP)

Because they will kill birds, the Avitrol baits are all “RESTRICTED USE PESTICIDES – Due to acute avian toxicity”.
How Do the 4-Aminopyrididine Products Work?

They act as a chemical frightening agent. When ingested, 4AP is rapidly digested. It causes the central nervous system to be very quiet, like that of an anesthetized animal.
How Do the 4-Aminopyrididine Products Work?

It then enhances transmission in the motor nervous system. This very active motor nervous system causes the bird to lose control.

*Think of it as the reverse of a cholinesterase inhibitor.*
How Do the 4-Aminopyrididine Products Work?

An effected bird may fly erratically, stumble like a drunk when it attempts to walk, become completely quiet so that you may pick it up, and some species may vocalize due to stimulation of the septum.
Unaffected members of the flock that witness this peculiar behavior will interpret these reactions as those of a bird that is in distress (injured or stressed), or alarmed (frightened). This will frighten the flock. If Avitrol products have been properly used, most species of birds will associate the reaction with the location and leave.
YES. You will **always** have some deaths among the birds that react. This is usually due to over stimulation of the cardiovascular system. In the case of pigeons, starlings, and house sparrows, there is no federal prohibition which prevents killing them.
Do all reacting birds die?

No. Like this house sparrow, some will recover. Birds that recover will have no symptoms of having ingested the Avitrol bait. A bird can be given a sub-lethal dose day after day with no lasting effect.
Can Avitrol baits be used without mortality in the treated flock?

No. There will always be some mortality.
What factors affect mortality when using Avitrol baits?

- Bait acceptance
- Time of day
- Blend Ratio
- Temperature
What factors affect mortality when using Avitrol baits?

The **time of day** the chemical is ingested has a major influence on mortality. Baiting accomplished at the day’s first feeding will cause more effect and higher mortality. This is because the birds are hungry; they eat more; there is little or no additional dilution factor due to food in their systems; and they metabolize the active ingredient more rapidly. **Birds eating the treated bait after they have had their heavy morning feeding may have:** i) a reduced reaction, ii) a delayed reaction, or iii) no reaction. This may cause a problem if delayed reaction causes birds to react and die away from the treatment site.
Prior to use, Avitrol baits are always blended with untreated foodstuff, which is the same as the Avitrol treated bait. The **blend ratio** chosen is a major factor in determining mortality. The higher the blend ratio of untreated grain with Avitrol treated grain (i.e. 29 parts untreated to 1 treated), the less mortality there will be. Inversely, with a lower blend ratio of untreated grain to Avitrol treated grain, there will be more mortality among the flock (i.e. 9 parts untreated to 1 part untreated).

**SEE LABEL FOR MORE INSTRUCTIONS.**
What factors affect mortality when using Avitrol baits?

The third factor influencing mortality is **temperature**. The colder the weather the higher the mortality. The reason for this is twofold. First, when it is cold, the birds’ metabolism is higher. Second, when it is cold, the birds eat more. The effect of these two factors is to get more active ingredient into the birds’ systems more quickly.
What factors affect mortality when using Avitrol baits?

The general health of the flock and the competing food sources are other more qualitative factors in determining mortality.
How small can the mortality rate be kept?

- For a treatment, the mortality rate among pigeons can be kept as low as four percent (4%) of the treated flock.
- Blackbirds, grackles, crows, cowbirds, and starlings are very good reactors and respond well to reacting birds. Therefore, the mortality rate for these species will generally be lower than for pigeons.
- On the other hand, house sparrows are not good reactors, and do not respond well to reacting birds. Consequently, the mortality rate for sparrows will be higher than for pigeons.
Are the birds in pain?

No. Dr. Harry Rowsell, a renowned animal rights advocate and researcher at the University of Ottawa conducted adversarial studies to determine if an affected bird was in pain. His conclusion is that Avitrol baits when ingested cause an initial depressive action on the central nervous system and that the effected birds are not in pain.

See Assessment of Humaneness of Vertebrate Pesticides Report
Are the birds in pain?

It is important to realize that even though the effected birds are not in pain, some people will find the sight of reacting birds to be repugnant.
Are the birds in pain?

They may believe the bird is in pain, or they may just not want to see birds reacting and/or dying. In sensitive locations, care should be taken to conduct baiting in a manner that minimizes public viewing of dead and dying birds.
Can Avitrol baits pose a threat to other species?

Yes if not properly used. The active ingredient in Avitrol baits is toxic to all vertebrate species that eat a sufficient quantity of the chemical.
Can Avitrol baits pose a threat to other species?

We consider the greatest potential for an Adverse Effect from the use of Avitrol baits is a nontarget kill. There is no reason for this to occur if the applicator follows label directions and takes appropriate precautions to ensure that nontargets are not exposed. In areas where there is a concern that nontargets may come into a bait site, a technician can be in attendance to remove the treated bait if nontargets try to feed, or to frighten away any protected species.
How toxic are Avitrol baits?

The active ingredient is very toxic by ingestion. Acute oral LD-50's for 4-AP range from about 3.5 milligrams per kilogram (mg/kg) for some avian species to about 32.5 mg/kg for white rats.
How toxic are Avitrol baits?

Prepared Avitrol baits used in urban settings contain one half percent (0.5%) or one percent (1.0%) 4-AP as the active ingredient.
How toxic are Avitrol baits?

Because these baits contain only one-half percent active ingredient, the oral LD50’s range from about 700 mg/kg for some birds to about 6,500 mg/kg for white rats.

(Please see Material Safety Data Sheets)
Since the Avitrol Treated bait is always blended with untreated grain of the same type, the Acute Oral LD-50 for the exposed bait is even higher (higher being less toxic). None-the-less, the individual treated kernels are potentially lethal to small vertebrate species.
Is there secondary poisoning resulting from the use of Avitrol baits?

No. The active ingredient 4-AP, is rapidly metabolized and degraded into non-toxic metabolites. It is, however, possible for a sufficient quantity of undigested Avitrol bait to remain in the digestive tract of an effected bird to be toxic, if that undigested bait were to be consumed by another animal. This would be primary poisoning.
• **ALL** Avitrol baits are Restricted Use Pesticides.
• Verify that you have the proper certification to use Avitrol.
• Requirements vary widely from state to state.
Using Avitrol

There are four important factors to remember when using Avitrol:

- Is the bird protected by law?
- Surveying your site.
- Prebaiting with untreated grain.
- Baiting with Avitrol.
- Clean-up.
- Follow-up.

These will be discussed in order.
BEFORE Undertaking A
AVITROL
PREBAITING/BAITING PROGRAM READ
THE LABEL(S) AND COMPLY WITH
ALL LABEL REQUIREMENTS. STATE
AND LOCAL LAWS SHOULD ALSO BE
CONSULTED BEFORE ANY CONTROL
MEASURES ARE TAKEN.
Early in your planning, verify that the species to be controlled is on the Avitrol label. Always check the Avitrol State Registration list for availability as well as local laws before any control measures are taken. Some cities are considered “bird sanctuaries” that provide protection to all species of birds.
Avitrol baits may be used to control:

**House Sparrows**

Avitrol products registered for use on House Sparrows: Avitrol Corn Chops and Avitrol Mixed Grains. Always check
Avitrol baits may be used to control:

Pigeons

Avitrol products registered for use on Pigeons: Avitrol Mixed Grains and Avitrol Whole Corn.
Avitrol baits may be used to control:

**Starlings**

Avitrol products registered for use on Starlings: Avitrol Corn Chops, Avitrol Mixed Grains, and Avitrol Double Strength Corn Chops.
Avitrol baits may be used to control:

**Crows**
(Including American, Northwestern, & Fish)

Avitrol products registered for use on Crows: Avitrol Double Strength Whole Corn.
Avitrol baits may be used to control:

**Blackbirds**
(Including Red-winged, Brewers, and Yellow-headed)

Avitrol products registered for use on Blackbirds: Avitrol Corn Chops, Avitrol Mixed Grains, and Avitrol Double Strength Corn Chops.
Avitrol baits may be used to control:

**Grackles**
(Including Common, Boat-tailed, and Great-tailed)

Avitrol products registered for use on Grackles: Avitrol Corn Chops, Avitrol Mixed grains, and Avitrol Double Strength Corn Chops.
Avitrol baits may be used to control:

**Cowbirds**
(Including Bronzed & Brown-headed)

Avitrol Products registered for use on Cowbirds: Avitrol Corn Chops, Avitrol Mixed grains and Double Strength Corn Chops.
We recommend the use of a bird identification guide that has **DRAWINGS** rather than photographs. This ensures that you will know the identifying marks, which photographs may not show clearly. Identification of non-target species at your site is a prime purpose of the survey.
Protection By Law

Most birds except for:
• Pigeons,
• Starlings, and
• House Sparrows;

Are protected by state, local, and federal law.
Even though they are **PROTECTED SPECIES**, no federal permit is required to control:

- Blackbirds (Yellow-headed, Bi-colored, & Tri-colored, Red-winged, Rusty (under review), and Brewer’s).
- Cowbirds (Brown-headed and Bronzed).
- Grackles (Common, Great-tailed, and Boat-tailed).
- Crows (American, Fish, and Northwestern).
- Magpies.

*When they are found committing or about to commit depredations to ornamental or shade trees, agricultural crops, livestock, or wildlife, or when concentrated in such numbers and manner as to constitute a health hazard or other nuisance (50 CFR 13 & 21).*

**THEY MAY BE PROTECTED BY STATE OR LOCAL LAW.**
Protection By Law

Code of Federal Regulations, 50 CFR 13 & 21 provide procedures for applying for federal permits. However, remember that Province, State, and Local regulations may differ from Federal Regulation. Always know (or investigate) state and local law and regulations BEFORE CONDUCTING BIRD CONTROL. If there is any concern about your intended activities, contact the appropriate federal, state, and/or local authorities.

KNOW THE LAW.
The Survey
Conduct a survey of the site. It will, tell you ALL you need to know to properly conduct a bird control program, including knowing and following ALL requirements. A properly conducted survey is probably the most important step in a properly managed bird control project. Unlike some other areas of pest control, EACH BIRD CONTROL PROJECT IS UNIQUE. The purpose of the survey is to identify the unique aspects of your site. Surveys should be conducted with observations made early morning and late afternoon, because this is the time when the most significant information about your flock may be determined.
The survey will help you identify the pest species(s) and determine the numbers that are present at your site. At the same time you MUST determine the existence of nontarget species. If you intend to use toxic baits in your program, it is possible that the presence of nontarget species may cause you to consider some other forms of bird control.
The Survey

During the Survey, you will note the habits of the birds; their comings and goings; where they are loafing/roosting; and what are the sources of food, water, and shelter.
A sketch of your site indicating the when, where, what, and how of your flock, is invaluable. Also consider taking copious notes to ensure you remember the important facts about your site.
Reviewing our survey and notes, we will now choose locations for prebait placement. For example rooftops and ledges are excellent locations for prebait and bait placement for pigeons, but not most other species. These high locations have other advantages as well:

• They are remote and allow prebaiting and baiting away from people and pets; and

• They are usually less attractive sites for songbirds.
Recommended Type of Bait Tray

On roofs and ledges where wind is common, the trays should be secured so that neither the tray nor the bait is blown around by the wind.
How Many Bait Trays Should You Use?

You should use enough bait and bait trays to accommodate feeding by the entire flock.
Prebaiting

PREBAITING: Remember we prebait for several reasons.

• Birds are neophobic. It will take them a while to become accustomed to the bait (and trays if used). A few birds will initially begin feeding and gradually the remainder of the flock will join in.

• When ingested, Avitrol Grain Baits will cause the bird(s) eating the treated kernels to act strangely, and convey the previously discussed alarm or distress message to the remainder of the flock. Should you fail to prebait, birds may associate this reaction with the grain and thus become “bait-shy”.
ALWAYS PREBAIT AND BLEND WITH THE SAME GRAIN AS THE AVITROL TREATED GRAIN.
Ensure that you have good bait acceptance. Check closely to verify that protected nontarget species are not feeding. If nontargets are feeding in one or more of your bait stations, do not use those locations for placement of the blend of Avitrol treated and untreated grain baits.
DILUTION – BLEND RATIO

As we review the label, we will again note that Avitrol Grain Baits MUST BE DILUTED PRIOR TO USE. You will recall that the dilution ratio is one of the factors affecting mortality.

(SEE LABEL FOR BLENDING/DILUTION DIRECTIONS)
Wearing gloves and using a scoop, mix the Avitrol Treated Grain with the correct amount of untreated grain of the same consistency to give the desired blend ratio.
Dead or reacting birds in public areas may be an alarming sight to the general public. It is best to gather and dispose of dead birds regularly, especially if adverse public reaction is anticipated. As required by the label, when using Avitrol, pick up and dispose of dead birds by burial or incineration.
Follow-up

Repeat baiting and clean-up operations on successive days until the target population ceases to return to the treated area, or until acceptable population control is attained. After the initial treatment period, when results appear promising, baiting applications may be made less frequently. To avoid adverse public reaction, it may be necessary to wait several days before rebaiting. If so, you must pre-bait again before re-baiting.
Follow-up

• Ensure that there are no dead birds remaining.

• Inform your client of your status and potential continued involvement.
**PRE-BAITING:** Whole corn is desirable for use with pigeons because it is too large to be accepted by many non-target species and because one kernel is a near perfect dose for an adult pigeon. However, in some instances, small mixed grains may be the preferred bait.

Always prebait with untreated grain of the same composition as the Avitrol carrier. Around buildings, a survey should also be conducted to determine the numbers and locations of nesting pairs. Pigeons that are nesting and feeding young are strongly attached to an area; if feasible, nests should be pulled down after the initial baiting cycle with the blended, treated bait.
**BAITING:** One hundred pigeons will eat from 7.5 to 10 pounds of grain per day. This will help determine the quantity of bait required for prebaiting and baiting. The operator should use his/her ingenuity in developing baiting techniques which best suit the local situation. For the control of pigeons in urban areas, excessive bird mortality is not generally desirable or necessary. To obtain minimum mortality, the Avitrol baits should be thoroughly mixed with untreated grain of the same composition as the Avitrol carrier. Bait placement should be made where feeding has been established; in high locations, on buildings and ledges, as well as on the ground. We always recommend the use of trays, preferably aged wood, approximately two by four feet, with one inch sides. A tray smaller than two by two feet is not recommended as pigeons prefer to be able to walk around in their food. Trays should be placed in areas highly visible and accessible to the birds.
**PREBAITING:** Always prebait with untreated grain of the same composition as the Avitrol carrier. House sparrows often favor dusting areas in the vicinity of the buildings they inhabit. These dusting areas usually make good prebaiting sites, and feed may be placed directly on the ground in these locations. House sparrows prefer ground feeding. Where such feeding may be impractical, it may be necessary to place trays (approximately two by two feet with one inch sides) on the beams and rafters observed to be frequented by the house sparrows. Trays should be placed in areas highly visible and accessible to the birds.
BAITING: As with pigeons, the applicator should use his/her own ingenuity in developing baiting techniques which best suit the local situation. It is usually best to distribute bait in the morning to take advantage of normal feeding habits. Bait should be placed where it is easily visible and accessible to the target birds throughout the entire area. House sparrows are not vigorous reactors. A high percentage of the flock (as much as 40% or more) should be affected for speedy control with Avitrol. To obtain control, mortality with house sparrows will be higher than with other species.
**PREBAITING**: Because starlings normally return to a roost with satisfied appetites, control of roosting starlings is usually not feasible with baits since they seldom feed at their roosting sites. Starlings are creatures of habit, and each starling flock has a specific preference for a type of food, and time, and place of feeding. In most cases, where grain is the primary feed, corn chops or mixed grains have been the best accepted starling bait. Prebaiting with untreated grain of the same composition as the Avitrol carrier is necessary to establish acceptance for the bait and to establish acceptable feeding/baiting sites. A flock of 100 starlings will eat approximately 3 lbs of grain per day.
**BAITING:** Best results are usually obtained by a massive first day treatment. This is followed by a second large treatment within the next two days. Normally the best baiting areas in feedlots are on the ground in alleys next to feeding bunks. Note that a good first day acceptance of the treated bait is important. The most popular bait for starling control at feeding sites is **Avitrol Double Strength Corn Chops.** The Avitrol label offers the opportunity to enhance the acceptability of the Avitrol Chopped Corn bait by mixing it with peanut oil or peanut butter. Users report very satisfactory results by maintaining weekly observations and applications during the fall and winter months when the problem is most severe. A monthly routine usually suffices during the balance of the year.

Repeat baiting and clean-up operations on successive days until the target population ceases to return to the treated area, or until acceptable population control is attained. After the initial treatment period, when results appear promising, baiting applications may be made less frequently.
Storing Avitrol Baits

**Blended Avitrol Bait:**
Blended product should be stored in an appropriate container with the blend ratio written on the top of the container in permanent ink.

**For Instance:** For Avitrol Whole Corn, EPA Reg. #11649-7 that has been blended but not used, it must be disposed of in accordance with label requirements, or stored in a secure container marked with the product name and number, with the blend ratio noted and a copy of the Avitrol Whole Corn label indicating it is blended material.
Storing Avitrol Baits

Unused Avitrol Bait:
In accordance with the label, store Avitrol baits only in the original container in a cool, dry location. It must be inaccessible to children and pets. Store apart from food or animal feed and protect against rodent penetration of the carton. Store apart from other pesticides, food, or feed that may cause cross-contamination of odor or insect infestation.
REMEMBER!

Always follow directions on the Avitrol label(s)

The Label is the Law!

Should you have any questions regarding the use of Avitrol Baits, please call Avitrol Technical Support at (800)633-5069.
REMEMBER!

Pests are the problem!

Pesticides are part of the solution!

Should you have any questions regarding the use of Avitrol Baits, please call Avitrol Technical Support at (800)633-5069.
The End