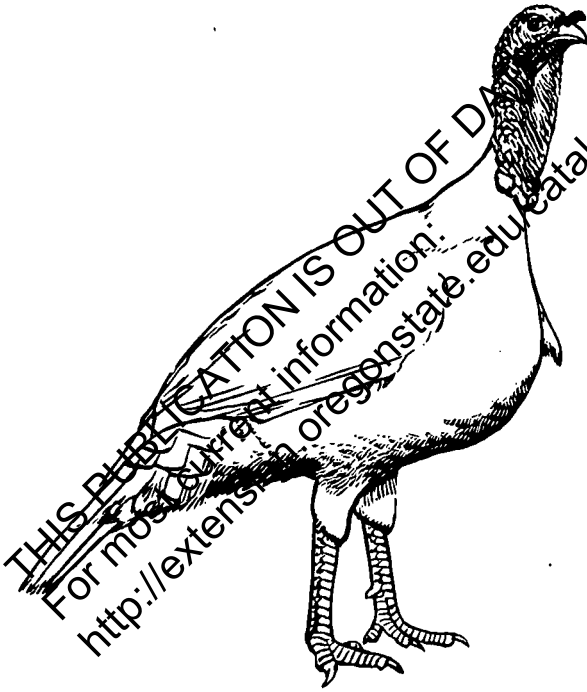
Avoiding Drug Residues in Turkeys



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Drugs such as coccidiostats, antimicrobials, and growth promotants are essential in large-scale turkey production.

Therefore, it is imperative that residues of these drugs are within the tolerances established by the U.S. Department of Agriculture and the U.S. Food and Drug Administration when you market your flock.

A single flock of turkeys that is found to have drug residues exceeding the tolerance level after the birds have entered distribution channels could cost the processing plant and the industry millions of dollars.

Drugs are administered to turkeys through feed, water and injection. Injected drugs are quickly absorbed, and if you observe the proper withdrawal period before slaughter, no residue problem should occur.

Drugs administered in the feed and water are the principal causes of residue problems. You can avoid drug residues in your market turkeys by:

- careful feed manufacturing and delivery,
- careful management practices on your farm, and
- strict observance of withdrawal times.

Manufacture feed carefully

Drugs mixed during feed manufacturing will contaminate every piece of equipment they touch. Some of the drug will remain in the equipment and contaminate later batches of feed.

Granulated forms of sulfas are now available that will greatly reduce drug carryover. Use the granulated form of the drug whenever possible.

Note, however, that powdered forms of some drugs such as sulfonomides are electrostatic—their small particles will become attached to the mixer and other metal handling equipment. If you electrically ground the equipment, you'll reduce the drug's electrostatic carryover to later batches of feed.

Remove residual feed

Residual medicated feed will remain in the boot of the feed mixer. You must clean it out, or later batches of feed will be contaminated.

Open or take off the cleanout door on the mixer; brush or sweep out the residual medicated feed. A portable shop vacuum is excellent for this job.

The elevator leg boots, conveyors, and other handling equipment will also contain residual medicated feed. You must remove this, too.

Thoroughly clean any bins in which you have stored medicated feed. This involves sweeping the inside of the bins to remove the dust and traces of the medicated feed.

Sequence feed mixing

It's important to carefully schedule your manufacture of different types of feeds, to minimize the possibility of a residue problem.

After you mix a medicated feed, the first, second, and third flush batches of feed will contain some residual medicated feed that was not removed during cleanout (feed in enclosed conveyors, etc.). Give such feed to birds in the growing phases that do not have a disease problem—and that you won't market for several weeks.

Use this feed-mixing sequence:

Batch	Type of feed
1	Medicated
2	Starter or grower
3	Starter or grower
4	Starter or grower
5	Finisher feed

Keep a daily record of every batch of feed you mix. When you mix a medicated feed, be sure to enter the name of the drug, the amount per ton, and the withdrawal period. Keep a sample of each batch you mix.

Feed delivery

Medicated feed will also contaminate the delivery equipment (feed trucks must be thoroughly cleaned after delivery of medicated feed). Feed the first two loads after the medicated feed to birds that you will not market for several weeks.

At your farm, take a sample from every load of feed delivered. If you should have a drug-residue problem later, this sample will help determine if the drug causing the problem was present in the feed.

Take the sample in a clean glass jar. Place a piece of aluminum foil over the mouth of the jar before replacing the lid. Seal the jar with tape and have the truck driver sign on the tape in such a way that the jar can't be tampered with. Mark the jar with the type of feed and date of delivery.

Mark and clean feed bins

Put a sign on any bin on the farm in which you place medicated feed. List on it the drug and the amount per ton. Be sure the sign remains on the bin until it is completely empty—and cleaned.

After a bin has contained a medicated feed, you must completely empty it before you place a nonmedicated feed in it. To make certain it's completely empty, inspect it visually. Also, remove all feeds from your feed bins between broods.

After storage of medicated feed, check carefully for the feed that accumulates in the boot below the bin. Empty it completely; brush or vacuum it out.

Remember also that feed may become moldy during wet or humid weather and should be cleaned out of the bin and the boot. Make these cleanouts a standard practice.

At the beginning of the withdrawal period, promptly remove from the bin and feeders any medicated feed that the turkeys didn't consume. Sack it and mark the sacks with large, conspicuous tags that list the drug and the

amount per ton. Store your sacks in a locked building.

Clean the feeders

Clean your feeders thoroughly when you change from a medicated to a nonmedicated feed. Brush the inside of the feeder to remove not only any feed that is "hung up" but also the dust.

A shop vacuum, powered by a small portable generator, is excellent for cleaning out the feeders when you change from a medicated to a nonmedicated feed. It will completely remove all the feed from the pan, particularly from the corners and from under the lip.

You can use this equipment out on the range, in yards, and in total-confinement houses. A nervous flock may become somewhat frightened by the noise, but they'll soon become accustomed to it. If you start the generator engine before you enter the house or yard, you'll reduce this problem.

The shop vacuum is excellent, too, for cleaning the pans or troughs of automatic feeders.

Sack also the feed you remove from the feeders. Mark these sacks with conspicuous tags that list the drug. Store them in a locked building.

Water medication

Many turkey producers prefer to medicate in the drinking water rather than in the feed. If you follow this method, thoroughly wash the medicator or proportioner before you introduce the drug into it—to remove any drug residues from a previous medication. Immediately after medication, wash it with an approved cleaning compound and rinse it several times.

Be sure to clearly mark the pipes from the medicator or proportioner to the different houses, to avoid medicating the wrong house. This has actually happened—and it caused a residue problem in market turkeys.

Certain drugs won't go into solution readily if the pH of your water is either too alkaline or too acid. Before you medicate with any drug, obtain the manufacturer's recommended pH range for that drug. Then determine if the pH of your water is within that range. If it's not, you may have to treat the water before you mix it with the drug.

(Check the mineral content of your water, too. Certain minerals may interfere with the drug.)

Some drugs may cling to the inside of both plastic and galvanized water pipes and continue to leach into the drinking water for days—and even weeks—after medication.

One study revealed that sulfaquinoxaline was retained and leached into untreated water, in both new PVC and old galvanized water pipes, for over 7 weeks after medicating a turkey flock with this drug. Kidneys from turkeys treated with sulfaquinoxaline, in either galvanized or PVC water pipes, contained sulfa residues for over 28 days after treatment was discontinued.

Flush pipes thoroughly

Thoroughly flush water pipes after water medication of any drug. First flush with clean, untreated water. Then flush with a compound recommended by the drug's manufacturer to dissolve or loosen the drug from the inside of the pipes. Then flush a third time with clean, untreated water. Clean and flush your waterers, too.

Move birds or change litter

After medicating in either feed or water, move the birds to another house or range if at all possible. The litter in the house, particularly around the feeders, will contain the drug in amounts that could cause a residue problem.

If moving the birds is not possible, then removing the litter and spilled feed from around the feeders will reduce the risk of a

residue problem. If you don't do this, the birds will peck at the medicated feed in the litter over an extended period of time—and the result will be elevated levels of the drug in the tissues.

If you feed any of your turkeys a sulfa drug and keep them on the same litter during the withdrawal period, hold them several days longer than the specified withdrawal period. Under these circumstances, a preslaughter test for sulfa residues is recommended.

Fresh litter may be contaminated with chemicals such as wood preservatives. Examine it carefully before you use it. If you're in doubt, have a sample tested at a lab.

Trained personnel are essential

Hiring a trained person to handle all your medications will help avoid residue problems. This person should know the characteristics of every drug you use, including the withdrawal periods, and should make certain that these withdrawal periods are strictly observed.

Having a trained person in charge of medicating turkey flocks will also greatly reduce the possibility of accidental overdosing, such as medicating in both feed and water (this has actually happened!).

How to calculate withdrawal times

Each withdrawal day is a full 24 hours, starting with the last time a flock receives a drug.

A drug with a 5-day preslaughter time is withdrawn from the flock at 9 a.m. on Friday.

At 9 a.m. on Saturday, the treated birds have completed the first withdrawal day. The fifth withdrawal day will end at 9 a.m. on Wednesday.

Incorrectly calculating withdrawal times is one of the leading causes of residue problems.

Extend your withdrawal time if:

- you left your birds in the same building or on the same range after medication;
- you didn't chemically treat and thoroughly flush the water pipes (and clean and flush the waterers); or
- you didn't thoroughly clean the feed bin and feeders that were contaminated with medicated feed.

Any of these management oversights could result in a residue problem in market turkeys.

The Whole Blood Sulfa Test

If you used *any* drugs during the life of a flock of turkeys, a preslaughter test for the drugs you used is advisable. Generally, a preslaughter test consists of a random sample of six birds, and it could detect a residue problem before you process your entire flock.

The Whole Blood Sulfa Test is an inexpensive way to monitor sulfa drug residues in live turkeys on your farm. It takes very little time, and you don't have to kill any birds.

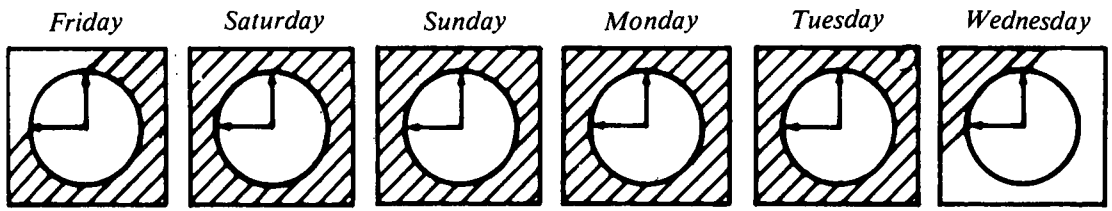
This test is based on the concept that one drop of blood can contain a sulfa drug residue that will inhibit the growth of susceptible bacteria (these bacteria are grown in a solid layer on a nutrient agar). When a drop of blood

is placed on a sterile disk on the seeded agar, and the disk is incubated at a temperature of 106 to 108°F, the bacteria will grow profusely around the blood disc if there is no drug present.

However, if a sulfa drug is present in the blood, it sharply cuts back the bacterial growth. You can easily see a clear zone of inhibited bacterial growth around the drop of blood.

This test could detect a residue problem before you process your turkeys—and prevent a costly incident!

Remember: You are legally responsible for residues that result from management practices in your turkey operation or on your farm.



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