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The Sulfa Residue Problem in Swine

Since the 1950s, sulfa drugs have been used extensively to treat hogs for various diseases, thereby helping promote growth. However, the widespread use of these sulfa drugs has resulted in consistently high levels of sulfa residues detected in slaughtered hogs. For example, over the past 5 years, up to 15 percent of hogs marketed have had sulfa residues above the 0.1 parts per million (ppm) tolerance level established by the Food and Drug Administration (FDA). To date, efforts by the swine industry, U.S. Department of Agriculture (USDA), and FDA have not been successful in eliminating this residue problem.

SOURCES OF SULFONAMIDE RESIDUE

Inadequate cleaning of feed equipment is the leading probable cause of illegal drug residues in food-producing animals—primarily sulfamethazine in swine. An FDA report cites failure to properly clean feed mixers, storage bins, and delivery trucks in 44 percent of residue violations where a probable cause could be found. Failure to observe pre-slaughter withdrawal time (15 days) is the second leading probable cause (41 percent). Other violations resulted from feeding and mixing errors. Also, fecal recycling and gutter flush systems using lagoon water potentially can cause illegal residues.

The USDA, with cooperation from the swine industry and FDA, has initiated a special campaign to help swine producers and the industry eliminate violative sulfa residues in pork. Since this joint effort relies heavily on the voluntary support of swine producers, FDA has agreed not to take regulatory action against any swine producer who cooperates with USDA/extension/state field survey teams during this special campaign.

The goal of the sulfonamide program is simple: by eliminating this violative residue, producers would be allowed to continue using these essential drugs to control diseases and improve production efficiency while providing consumers with a continuing supply of wholesome pork products.

THE SULFONAMIDE RESIDUE REDUCTION PROGRAM

The primary objectives of the program are:

1. to eliminate sulfa residues from marketed swine.
2. to provide educational programs and written materials for swine producers, advising proper usage and withdrawal times for the various sulfonamides and sources of sulfonamide residues in feeds and equipment.

3. in the event it has been determined that recently marketed swine from a particular farm contain above-tolerance levels of sulfonamides, to immediately notify the producer, offer assistance to determine the possible source of the sulfonamide, and advise the producer of options available to clear the herd and resume normal marketing operations.

NOTIFICATION OF SULFONAMIDE RESIDUES

Hogs are randomly selected for analysis of tissues at slaughter. Samples are taken by USDA personnel. If the USDA laboratory confirms that hogs contain above-tolerance sulfa residues, an effort by USDA's Food Safety and Quality Service (FSQS), which administers the federal meat inspection and residue monitoring program, is made to telephone the swine producer. This initial contact is followed by an official letter of notification from the USDA, FSQS. A copy of this letter is provided to FDA, state animal health officials, and the state field representative.

Investigative personnel offer to visit the farm to help the producer determine the source of the sulfonamide. The producer is under no obligation to accept this offer of help.

FIELD INVESTIGATION

After being notified, the field representative contacts the producer and gathers information about the management practices with a phone questionnaire that covers: total number of hogs; type of hog production system; reason for using the sulfonamide product; administration (feed additive or injectable); usual withdrawal times; and source of finish feed and suppliers. These telephone interviews are followed with visits to swine producers who request assistance.

The completed survey form is sent to the veterinarian in charge (VIC), who designates a district veterinarian to conduct an on-the-farm study of all facets of farm management that might cause sulfa residues.

If the swine producer does not want an on-the-farm investigation, the field representative interviews by telephone and forwards the survey form through channels to Residue Evaluation and Surveillance (RES) for evaluation and comparison with on-the-farm data. A report of the RES findings is made available to the swine industry and all interested parties.

MARKETING HOGS WITH RESIDUE VIOLATION

To continue marketing hogs following notification of sulfa residues in recently marketed hogs, two options are available:

1. Hogs could be sent to slaughter but would be retained immediately after slaughter in the packing house until samples could be tested and found free of sulfa residues below the legal tolerance of 0.1 ppm. Some packers might not be willing to buy hogs on this basis. Others may discount the price paid for the hogs because hogs found to contain residues above legal limits cannot be sold for human consumption.
2. The other alternative is to have hogs "pre-market-tested." This involves arranging through USDA's meat inspectors to have a sample lot of five hogs sent to slaughter. Samples of meat tissue are taken from these hogs after slaughter and analyzed for sulfa residues while the remainder of the car-

cas is retained within the packing plant. Results of these tests take approximately 1 week; or, for faster results, the producer can arrange meat tissue analysis at one of three approved laboratories. Such independent tests are at the producer's expense.

As soon as it is determined that the next lot of hogs which will be marketed does not contain sulfa residues above the tolerance level, the producer will be cleared to resume marketing hogs without further restrictions.

It is important to remember that producers choosing to accept the offer of help through the program will have the benefit of a visit to the farm to thoroughly review with the producer all phases of the operation. The purpose is to help trace the source of the sulfa residues that were detected and make recommendations to prevent a similar incident from occurring.

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