



UNIVERSITY OF IDAHO
College of Agriculture

Antibiotic and Pesticide Residues in Milk Are Adulterants

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You Can Prevent Milk

WHILE antibiotics and pesticides are beneficial in controlling disease and insects, their presence in milk is a public health hazard. Unless the dairy farmer uses the necessary care and precautions to keep these materials out of milk for human consumption, their use will be further restricted by state and federal regulations.

Antibiotics and pesticide spray residues occasionally are being found in milk sold for human consumption. State and federal control agencies have classed such milk as adulterated. This prohibits the use of this milk in any form for human consumption and may make the dairy farmer liable for legal action, including heavy fines.

Contamination Is Dangerous and Highly Objectionable

State and federal agencies, as well as the medical profession, are greatly concerned over the contamination of milk with antibiotics and pesticide residues. They point out that, at present, this is not a major public health problem, but that a large number of people sensitive to antibiotics have suffered effects believed to be traceable to the adulterants in milk. The Federal Food and Drug Administration has advised that unless the contamination of milk with antibiotics is eliminated, it will be necessary for them to limit the sale of antibiotics (for mastitis treatment) to those holding proper prescriptions.

Antibiotics in milk also greatly interfere with the production of cheese and cultured buttermilk due to their effect on the bacterial culture used in producing these products. Many large cheese manufacturers have lost thousands of gallons of milk because contaminated milk from just one dairy farmer has prevented the proper growth of the bacteria. In every case this loss must result in lower returns to the milk producers.

Pesticide spray and dust residues, because of their poisonous nature, are highly objectionable in any food, and especially so in milk which is looked to as the perfect food for infants and children.

(either in the udder or by injection systemically), must not be used for human consumption during the course of treatment and for 72 hours following the last treatment.

Only pyrethrum sprays are approved for use on milking cows at the present time.

Cooperative Extension Work in Agriculture and Home Economics
J. E. Kraus, Director, University of Idaho College of Agriculture
and United States Department of Agriculture Cooperating.

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Contamination From Antibiotics

Sources of Contamination

Antibiotics (penicillin, aureomycin, terramycin, etc.) being found in milk come primarily from their use in treatment of mastitis or other infections of the cow. In some cases antibiotics have been purposely or accidentally added directly to milk. In all such cases the milk should be discarded and not used for human consumption.

Pesticides and Spray Residues. The residues from fly sprays (DDT, Lindane, etc.) used about the dairy farm have been found in milk. This type of adulteration comes from adding the material to the milk by spraying when milking, exposing the milking utensils to fly sprays, exposure of water or feed troughs, or by spraying the animals.

Crop sprays and dusts applied to roughage and forage crops, particularly those applied immediately prior to harvesting, have been shown to enter the milk through the cow eating these materials. Some types of sprays and dusts will carry over into the milk more easily than will others.

Quaternary Ammonia Compounds. Residues of quaternary ammonia compounds also are considered as adulterants when found in milk. These compounds should not be used in sanitizing dairy utensils.

Prevention of Mastitis Is Best

Good herd management, including sanitary and efficient milking practices, are of utmost importance in the prevention of mastitis. The udder of each cow is a delicate organ susceptible to injury and infection at all times, but particularly so at milking time. Operate the milking machine according to the manufacturer's directions. Be sure to remove it as soon as the cow is completely milked. In milking, heifers and cows free of mastitis should be milked first. Purchase only cows that have been examined and are free of mastitis.

At the first sign of udder injury or abnormal

Antibiotic and Pesticide Residues

milk, consult your veterinarian so that proper treatment may be undertaken at the earliest possible moment to prevent spread of any infection to other cows. Your veterinarian can be of valuable assistance in working out a program for mastitis prevention and control. **Remember that keeping antibiotics out of market milk is the responsibility of the producer.**

ANTIBIOTICS

1. *Mastitis Treatment.*

Milk from any cow treated by injecting antibiotics into the udder must not be used for human consumption during the course of treatment and for 72 hours following the last treatment.

The amount of udder damage that mastitis infection may cause is usually dependent upon the duration of the infection. Therefore, the sooner proper treatments are applied the greater are the results to be expected.

Many types of organisms can cause mastitis. Not all of these types are killed by all antibiotics. Therefore, it is necessary to determine the type of organism causing the infection and then to use the proper antibiotic in large enough amount to kill it quickly. It is better to use large (therapeutic) amounts of antibiotics over a short period of time at the first detectable sign of mastitis than smaller (sublethal) amounts continuously. The smaller doses only inhibit bacterial growth and the organisms may build up a resistance to the antibiotic and be much more difficult to kill.

Veterinarians may have facilities available for identifying the organisms causing mastitis and can recommend the correct amount of the proper antibiotic to use.

2. *Systemic Treatments.*

Information is incomplete regarding milk from cows which have been treated with

large amounts of antibiotics by methods other than udder infusion. It has been shown that penicillin is present in the milk in therapeutic amounts 24 hours following the intramuscular injection of large doses. Detectable amounts are present for longer periods. Reports indicate that some of the other antibiotics do not enter the milk when given by methods other than intramammary. Until more information is available it is advisable to withhold milk from all antibiotic treated cows for the recommended 72 hour period.

PESTICIDE SPRAY AND DUST RESIDUES

1. *Fly Sprays.*

Until other spray materials are approved, apply only pyrethrum sprays on milking cows for hornfly and louse control.

When applying residual sprays such as DDT, Methoxychlor, Malathion, or Diazinon inside the dairy barn or loafing sheds, cover the watering and feeding troughs to prevent contamination of water and feed. Do not apply these materials in milk-handling rooms.

Strict sanitation of premises should be followed in order to eliminate fly-breeding areas and thus reduce the total fly population. Prompt disposal of manure and other breeding media reduces the need for excessive spraying.

2. *Crop Sprays and Dusts.*

Control of alfalfa weevil in early spring results in the production of hay free of insecticide residue. Where it is necessary to spray or dust the hay crop for alfalfa weevil larval control just prior to cutting, use an insecticide such as heptachlor which is dispersed rapidly after application. Even when using this material, apply it at least 7 days before harvest.

Summary

Antibiotic and pesticide spray residues are occasionally being found in milk sold for human consumption. These materials constitute a health hazard and are adulterants when found in milk. Only the producer can keep these materials out of milk sold for human consumption.

Milk from any cow treated with antibiotic