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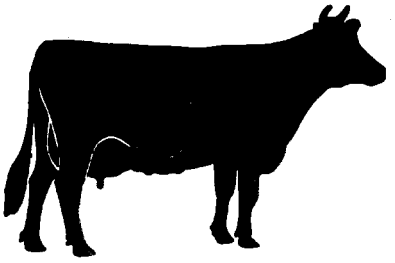
Antibiotics in Milk



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ANTIBIOTICS IN MILK

ANTIBIOTICS used extensively in the treatment of mastitis and other diseased conditions of the dairy cow have resulted in the presence of antibiotics in milk and dairy products sold for human use. However, mastitis is as great a problem to the dairy farmer now as before the availability of antibiotics.

Because of the promiscuous use of antibiotics, additional problems have been created for the dairy farmer, veterinarian, dairy product processors and for the consumer of dairy products.

Of greatest importance is the public health problem resulting from antibiotic residues in milk. This has become of such significance that the Federal Food and Drug Administration has proclaimed that the direct or indirect addition of antibiotics to milk constitutes adulteration.

Do Antibiotics in Milk Affect You?

Antibiotics in milk offered for human food is of importance to many people. Their presence is a threat to the entire dairy industry and to the many people who rely upon the dairy industry for all or part of their livelihood. The problem is also of significance to the many millions who depend upon dairy products for food.

The Dairy Farmer

Antibiotics in milk may be the basis for legal action by health officials. The farmer will suffer financial loss through the required discarding of milk containing antibiotics.

Usually, intramammary treatment is of no benefit in curing mastitis. It may even encourage the growth of different organisms that can cause a more acute mastitis than the type treated. Intramammary infusion with mastitis preparations may result in the infusion of acute mastitis-producing organisms that exist in some antibiotic tubes or on the outside of the cow's teat.

Dairy Plant Operator

Antibiotics in raw milk will interfere with organisms used for fermentation of cheese and buttermilk. Poor quality products often are the result. This may reduce milk consumption. Often, such products have to be destroyed. The dairyman and the consumers of dairy products pay the cost of these losses.

Dairy foods from milk containing antibiotics may harbor antibiotic-resistant organisms that may produce human disease.

Veterinary Treatment Difficult

The veterinarian frequently encounters mastitis cases that have been incorrectly medicated. Though temporary relief may be achieved by intramammary infusion, destruction of mammary secretory tissue, decreased milk production and organisms that have established resistance to antibiotics often are the result.

This means the veterinarian is blamed for unsuccessful treatment even though such criticism is not justified. The veterinarian can only give a good service when he is called upon before the mastitis has progressed to the point of secretory tissue destruction and before the resistant organisms are established.

Consumer of Dairy Products May Suffer

Antibiotics in dairy products, particularly penicillin, may cause varying degrees of sensitivity in humans. It has been estimated that 6 to 10 per cent of the population is sensitive to antibiotics. Another public health problem is that antibiotic resistant infectious and contagious organisms may become established.

How to Eliminate the Antibiotic Problem

Over 75 tons of antibiotics are estimated as used annually to prevent and treat mastitis. Much of this is administered by dairymen who often have become increasingly careless in handling these preparations.

The dairyman has a definite responsibility to himself and for the welfare of others. This responsibility can be achieved by following these simple rules: (1) After giving antibiotics to the lactating cow, always discard all milk that may contain antibiotics. (2) Follow the instructions given on the label of the antibiotic preparation as to dis-

carding milk. (3) In general, discard all milk from the treated quarter for at least 72 hours after the last administered recommended single dose has been given.

If antibiotics are administered by routes other than intramammary infusion, competent consultation regarding the period of antibiotic elimination in the milk should be obtained. Usually antibiotics given intramuscularly will be present in the milk up to 36 hours following administration. The quantity, and period of time following administration that antibiotics are in milk, are very variable. These variations are due to:

(1) Vehicle or carrier used.
(2) Amount of antibiotic administered.
(3) Route of administration (intramammary infusion or parenteral).
(4) Quantity of milk produced.
(5) Period between antibiotic administration and milking.
(6) Individual variations of excretion rate of cows and type of antibiotic used.

Successful dairy farmers have discovered that a good mastitis prevention program is worth many dollars worth of cure. A good mastitis prevention program does not require additional dairy equipment or expensive, cumbersome bacteriological testing programs. A few simple procedures will do the job, if they are adhered to continuously by the dairyman. These are:

INHERITANCE

- Select cows with well attached udders
- Select rapid, easy milkers
- Avoid excessively large uddered cows
- Raise your own replacements

HOUSING

- Provide adequate stall or pen space
- Provide adequate quality bedding
- Avoid: Dampness, cold, drafts which often result from open hay or straw chutes, broken windows and doors
- Prevent udder trauma by avoiding:
  - High door sills
  - Rubbish in yards and pasture
  - Slippery floors and entrance aprons
  - Corn stubble or brush pasture
  - Hard driving with dogs
  - Flies, mosquitoes

MANAGEMENT

- Dehorn all animals
- Prevent cow pox
- Prevent sunburned, chopped and/or frozen teats
- Avoid use of irritating disinfectants on cow teats

MILKING

- Stimulate milk letdown 1 minute before attaching milking machine:
  - Wash and massage udder with clean warm water
  - Use strip cup at every milking
- Remove each teat cup when milk ceases to flow
- Never milk with more than two units per operator
- Always break vacuum before removing teat cup from teat
- Keep milking machine in maximum operation condition:
  - Have milking machine checked annually by recognized serviceman.
  - Learn to recognize defective machine operation and to correct or repair it.
- Follow manufacturer's operating instructions as to:
  - Correct pulsation rate
  - Recognized vacuum level
- Keep vacuum line clean
- Check and eliminate any vacuum leaks
- Have vacuum regulator and gauges checked annually and operating properly.
- Keep rubber inflations clean and replace after 1,500 milkings.
- Use two sets of rubber inflations – alternate each week.
- Obtain competent veterinary service upon detecting first signs of mastitis.

Treatment of Mastitis

The dairyman who devotes full time to mastitis prevention and relies on competent veterinary service for treatment that is required is usually one who has few veterinary costs and few problems with mastitis.

When mastitis is detected, stimulate the infected quarter for milk letdown and milk it out completely. Repeat this process at hourly intervals at least four to five times.

If the inflammation does not appear to be subsiding, obtain competent veterinary service immediately.

PREVENT MASTITIS – KEEP ANTIBIOTICS OUT OF MILK

RURAL DEFENSE READINESS FACT: Being prepared against unknown hazards of management breakdown is an important part of all phases of modern livestock production. One important precaution for all large scale hog and beef cattle feeding operations is a sound plan for standby power, feeds and water to meet all emergencies.

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