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FOOD SAFETY AND BACTERIA — ANOTHER PART OF THE STORY

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Poultry and other food animal producers need to have an understanding of the facts about bacteria, sometimes referred to as "germs," and food safety. We need to develop effective and innovative approaches to better communicate with public health workers, regulatory officials, and consumers so that unrealistic requirements related to the microbiologic, or bacterial, aspects of food safety are not placed on the production segments of the food industries.

In thinking about bacteria-related food safety, at least three facts must be considered. First, the bacteria of concern are going to always be present; second, a bacteria-free food supply, if this were attainable, could present a potential risk of another kind which will be discussed in this article; and third, the costs to achieve a bacteria-free supply of raw food could far outweigh any benefits.

The bacteria of primary concern in food safety (Salmonella, Campylobacter, Listeria, E. coli, and Clostridia) are relatively common in the intestine, feces, and environment of both animals and people.

Raw food bacteria

Because of the presence of bacteria, food — particularly raw food — can be contaminated with a small number of bacteria. If such food is improperly handled or prepared, a few bacteria can become many. For example, 1 bacterium can become 281 trillion bacteria within 24 hours if present in a suitable food and kept at a warm temperature. When such improperly handled or prepared food is eaten, some people may become ill, particularly the elderly or those whose immunity or resistance may be low.

The constant presence of potentially harmful bacteria in the environment is further illustrated with the bacteria that cause Legionnaires' disease. These bacteria are present in most, if not all, water supplies but result in disease only under very specific conditions of water storage, massive inhalation exposure, and susceptible individuals.

In the remainder of this article I will briefly discuss another aspect of bacteria-related food safety. This is a difficult area to discuss and understand, and the idea is not necessarily popular but it should be considered and evaluated when trying to develop rational food safety prevention and control programs.

Immunity to bacteria

Immunity to bacteria may be achieved in two ways — either through vaccination or by exposure to a small number of bacteria so that a natural immunity, or resistance, develops.

Some of us may remember the old adage ". . . every child should get his peck of dirt" — a reference to the importance of exposure to bacteria if resistance is to be developed. In the case of the bacteria of concern in food poisoning (Salmonella, Campylobacter, Listeria, E. coli, and Clostridia), there are no vaccines, so any immunity that develops must be from some exposure, ideally to small numbers of the bacteria.

If an environment and food supply completely free of these bacteria could be developed, a very susceptible, or "no immunity," population would result. If, by accident or some breakdown in such a "perfect" system, a few of these bacteria gained entrance to our food supply, a real epidemic could occur.

An example of this kind of "no immunity" problem is when "travelers' diarrhea" occurs in visitors to some countries. This diarrhea occurs because visitors drink water containing bacteria to which they have developed no immunity. The bottom line is that constant exposure to a low level of bacteria may in fact be very beneficial in the long run.

In a future article we will discuss the economics (cost vs. benefits) of trying to eliminate food-poisoning bacteria at the production level.

Wintertime Means Lice And Mange Problems In Cattle

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HONESDALE (Wayne Co.) — With the onset of the winter stabling season, livestock managers will probably be faced with the problem of external parasites.

When dealing with cattle, the two main external parasite threats are lice and mange. These two parasites can live on or in the skin of cattle. They cause the animal discomfort, itching, loss of nutrients, loss of growth, and loss of production.

Cattle are affected by both biting and sucking lice. Lice cause skin irritations, scab formation, and hair loss. Lice are found in large numbers around the head and neck and also around the tailhead. Lice will eventually spread to other parts of the body. Cattle lice spend their entire life cycle on the host with adult lice laying eggs on the hair. Lice are spread by direct contact of animals or contact with bedding and other materials that already contain the louse eggs.

Cattle lice are usually a more serious problem during the winter months. Lice problems could also be rather severe under conditions

There are a number of lice control products on the market. these include formulations that are "pour-ons," dusts, sprays, dips, backrubbers, eartags, and injectable.

Mange is the other external parasite that affects cattle. Mange is caused by mites, tiny insects that live in the skin at the base of hairs. Mange causes itching and hair loss, particularly in the area between the tailhead and the rear udder attachment.

One type of mange causes a severe skin irrigation in the neck and head area. In chronic cases, hair loss and thickened folds of skin are noticeable.

All forms of cattle mange have life cycles like that of lice. Eggs are laid on the hair and hatch in 10 to 12 days. They live 30 to 40 days. Mange, like lice, tend to be more severe during the winter months.

Treatment of mange with insecticides applied to the skin requires very thorough coverage of the medication to reach all of the mites that are burrowed in the skin. Treatments should be repeated at 1 to 2 week intervals to be sure to kill and control newly emerged adults.

Insecticides in backrubbers and sprays, plus injectable products, are ways of effectively controlling mange.

Those using these types of products to control external parasites of cattle are strongly urged to carefully read the label on each insectide.

For additional information about how to control external parasites, contact your County Cooperative Extension Service by dialing 253-5970, extension 239, or by stopping in at the office located in the basement of the Wayne County Courthouse in Honesdale, Pennsylvania. Additional information about this topic is available through Extension circular 349, "Parasites In Beef and Dairy Cattle." Copies are available at the Wayne County Cooperative Extension office and also at other county cooperative Extension offices in Pennsylvania.