

## **Common Toxins for Dairy Animals and How to Take Precautions**

**By Charles E. Gardner, DVM**

There are few things on a dairy farm as shocking, and as discouraging, as seeing a group of animals suddenly become ill and then start dying right in front of your eyes. This scenario can and does happen when animals are exposed to certain toxins. You should know the common poisons that are often present on dairy farms and take extra care that your cows and youngstock do not have access to them.

The most common poison I saw during my time in practice was urea. Small amounts of urea are often included in feed rations, and some farms have it on hand to add to the TMR as it is mixed. If too much is added, or if animals get access to the pure form of it, death is usually the result. On one occasion the milking cows got into the feed room, broke open some bags, and began eating it. I think five or six died. Another time a producer was spreading urea fertilizer on a pasture and got stuck in a low spot. He went to get help, and while he was away, several heifers came and licked the urea off the spreader. Most of them died. A third experience was a "lick wheel" feeder, which had been empty for several days. When it was filled with a concentrated urea product, several heifers over-consumed it and were found dead nearby. The last case involved a bag falling off the back of a truck and breaking open in a lot with dairy animals. Fatalities occurred once again.

There is an antidote to urea poisoning, which is vinegar. The acetic nature of vinegar will prevent the absorption of the urea. One gallon by stomach tube is the dose for an adult cow. If you ever have animals that you know have consumed urea, treat the ones that are just starting to stagger. It is already too late for ones that have gone down.

The second most common type of poison that I encountered was Japanese Yew. Many households have this growing in their yards. On several occasions, the homeowner trimmed these plants and threw the trimmings into a neighboring pasture. Cows or heifers will eat the trimmings eagerly and die within minutes. Tell your neighbors to never throw any trimmings into your fields because there is no antidote.

A distant third was insecticides. In one case, three heifers were found dead by the owner. He noticed some powdered material in the bedding. Further investigation revealed a broken bag of an organophosphate insecticide on the barn floor over the pen. Some of the product came down through the spaces between the floorboards, and the curious heifers soon found it and ate it.

A much more dramatic case of insecticide poisoning came when an entire herd of 60 cows all died within 10 minutes of being fed some freshly ground feed. The corn in the feed had been stored in a building with only a dirt floor. Investigation revealed high levels of insecticide in the dirt. Further questioning confirmed that bags of that product had been kept in that location

years earlier. Apparently, some of them had broken and contaminated the dirt. A drug called atropine is the antidote but must be given soon after the insecticide is ingested to be effective.

The last type of poison that I saw in practice was nitrate. This case involved several pens of heifers that were fed fresh-cut rye from a different field than had previously been used. More history was that we had recently had heavy rain after a long dry period. When the new field was started, the harvester naturally began along the edges. The ends of the field often get more fertilizer than the center, because when the fertilizer spreader slows to turn around, more fertilizer is applied. The heavy rain after the dry spell caused the rye to draw up the excess nitrogen from the fertilizer. In the plant, the nitrogen was converted to nitrate. When the heifers ate the rye, they absorbed the nitrate, which ties up hemoglobin and prevents oxygen from being transported via the bloodstream. The diagnosis is made by drawing a blood sample. Instead of being red, it will look like chocolate milk, due to the lack of hemoglobin. There is an antidote, called methylene blue, but once animals begin showing signs, it is usually too late to save them.

There are certainly other things that can be toxic to dairy animals, but the four described above are the most common. Take extra care to avoid having your animals exposed to them. Always be leery of feeding fresh forage when a heavy rain follows a dry spell. Fermented silage will be okay, as the nitrate will be broken down by the fermentation process.