

Local

# Researchers study mold poison

Mycotoxins, a group of poisonous chemicals sometimes associated with moldy grains and nuts, can cause cancer and other diseases in animals, but the risk to people of industrialized nations — where the tainted material may be inadvertently fed to livestock — seems relatively small, say veterinary researchers at Texas A&M University.

A greater potential for harm exists in developing countries where contaminated grain eaten by humans is suspected as a factor in liver cancer and other diseases. Scientists at Texas A&M are working on new techniques to identify mycotoxins more rapidly in livestock feed, with an eye toward helping the enviable safety of animal foods from American farms and ranches stay intact.

As far as we know, people can't get the flesh of animals inadvertently fed moldy grain with little harm from the effects of mycotoxins," said Dr. Norman Heidelbaugh, head of veterinary public health at Texas A&M.

He pointed out, however, that much greater study is needed of all mycotoxins, which were discovered less than 20 years ago.

Researchers believe that although there is no need for alarm, the problem of mycotoxins is becoming more prevalent in the United States. The veterinary public health department here views the poisons as "an emerging public health issue," said Heidelbaugh, an authority on the chemicals.

One of the most widely studied mycotoxins is aflatoxin B, which occurs frequently in animal feed grains and nuts. Grains can be processed to remove these toxins, but the complete safety of such products needs verification by animal studies, he said.

Mycotoxins may also be a significant factor in so-called "multicausal" diseases in both humans and animals, said Texas A&M researcher Dr. Timothy Phillips, who recently gave the scientific worlds a view of the molecular

structure of a derivative of penicillic acid, a common mold poison.

Penicillic acid, known to produce cancer and increase blood pressure in test rats, comes from a penicillium mold similar to the one that produces penicillin, one of the world's most widely prescribed antibiotics.

How a simple mold can be such a two-edged sword is just one of the questions scientists like Phillips and Heidelbaugh are trying to answer.

Phillips' new technique for outlining the molecular structure of mycotoxins will be a significant and useful contribution in identifying the poisons if they are suspected as a factor in a disease, said Heidelbaugh.

Heidelbaugh cautioned people not to blame mold poisons as the sole cause of any disease in humans or animals. Such actions might conceal the true sources of the ailment, he said.

"Not all molds produce mycotoxins and in some cases — aged

cheese for example — a certain amount of mold is considered desirable," he said.

Phillips said a study of people in Third World nations who had consumed grains contaminated with mycotoxins showed increased incidence of liver cancer. This does not occur in advanced countries where livestock act as filters for the tainted grains and, in turn, can apparently be eaten safely by humans.

"A mycotoxin may or may not be there," said Heidelbaugh. "More often it is not."

The new techniques being perfected at Texas A&M by Phillips will aid scientists in rapidly identifying and analyzing mycotoxins in livestock feed supplies, he said, while further ensuring the safety of animal feeds and foods derived from livestock.

Support for Phillips' work over the past two years has come from the U.S. Department of Agriculture's Veterinary Toxicology and Entomology Laboratory here, as well as the Texas Agricultural Experiment Station headquartered at Texas A&M. TAES is a branch of the Texas A&M System.

Although little is still known about the effects of mycotoxins on humans, it is currently considered a minimal risk in the United States, said the researchers, because animals act as a primary barrier between humans and any contaminated grains.

Mycotoxins, said Heidelbaugh, provide a clear example of how cattle, sheep and poultry can take feeds which people cannot consume and can economically convert such grains into safe and nutritious sources of protein.

# Competition for water May affect small towns

Small to mid-sized communities are in danger of losing their water reserves to aggressive cities scrambling to provide water for their booming populations, warns a Texas A&M University sociologist.

"Our smaller cities are losing out to the major metropolitan areas for water rights to nearby rivers and lakes because they haven't the foresight of the larger cities and usually cannot afford the political expertise available in the big cities," said Dr. Ruth Schaffer.

turned on a water faucet and let it run a while before filling a glass with cold tap water?" she asked. "We just take these things for granted."

The Texas A&M sociologist said the Reagan administration's cutbacks on federal funds will make competition fierce for money to begin new water projects or continue those already underway. The predicted federal policy, which historically has supported water projects in the West and

Southwest, will turn more of its attention to northeastern cities with outdated water systems and polluted aquifers and rivers. She said better planning at all levels of government, cooperation between cities and states for distributing water where it is needed, and conservation, particularly among agriculturalists who use over three-quarters of the nation's fresh water supply, will be the major ingredients for easing water concerns.

"Water is crucial for survival," said. "Whoever controls that resource will be able to control growth."

Schaffer, who has studied the sociological effects of federal water policies for 10 years, said the nation's largest cities are scraping for water rights in regions several hundred miles away. They are making ways to build dams, reservoirs and transport systems that would allow them to import surplus water from other areas for accreters that are being depleted faster than they are being replenished.

One reason big cities are running out of water is waste, she said.

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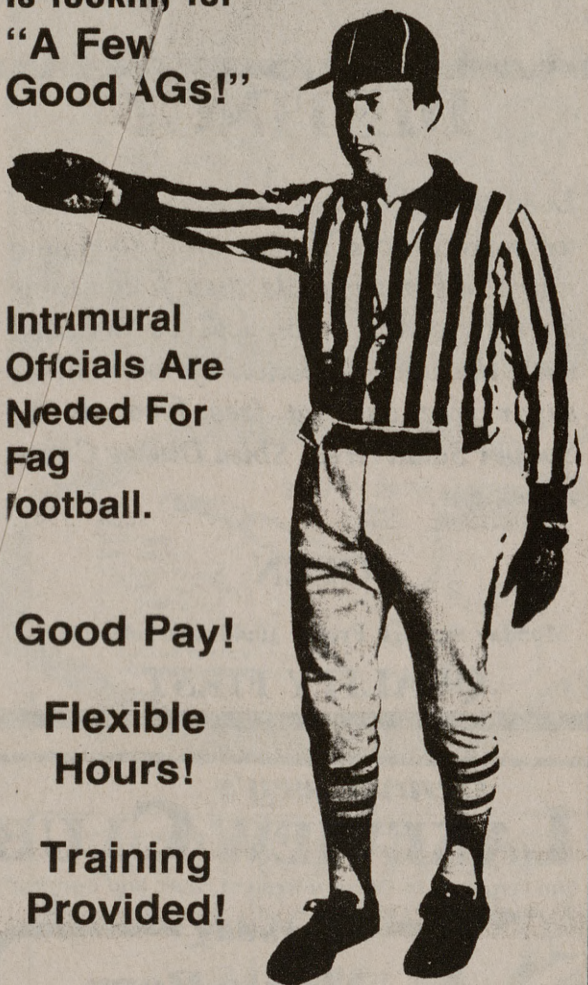
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