FEDERAL COORDINATING OFFICE

MOUNT ST. HELENS TECHNICAL INFORMATION NETWORK

federal emergency management agency

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BULLETIN #11 - "Poultry - Bees - Livestock"

While the long-term health effects of Mount St. Helens' volcanic dust still are unknown, Washington State University scientists in Pullman, Washington have yet to see any animals suffering ash-related health problems, and they have conclusively determined that the fallout is not acutely toxic.

In a preliminary study on the toxicology of the fallout, Dr. William Huber, Associate Dean of Research at the Veterinary School, said the results indicate the volcanic ash has very little capacity for producing acute toxicity following ingestion. "We were extremely pleased to note that the laboratory animals, rats, are very tolerant to ingested volcanic dust," Huber said. This information matched field observation. The ash administered to the rats was equivalent to five pounds of ash consumed by a 1000 pound cow, or 20 tablespoons consumed by a human being. In order to assess the effects from drinking water contaminated with ash, a saturated solution was administered to the animals. There were no toxic effects.

Huber noted that the toxicological studies are being continued to assess longer-term effects of the volcanic ash in animal feed and drinking water. He hopes to know some of these effects in about two weeks.

Two concerns remain for livestock. The first is whether there will be any health problems associated with long-term breathing of the ash. The other is whether the ash will cause cattle, particularly dairy cows, to eat less, thus affecting milk production. Dr. Steven Davis, University of Idaho Animal Sciences Professor, said that livestock and wildlife, particularly animals which depend on outside sources of feed, are likely to develop lung congestion from the volcanic ash. This may pose some long-term health problems, depending on the condition

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of the animal, its age and any previous conditions.

Because of the fine particulate size of the ash, once it is in the lungs damage could be rather severe even if there are no immediate symptoms. Chronic effects from continued exposure will show up in the quality of health or productivity of the animal later.

The effect on wildlife will be most severe on the youngest and oldest members of animal populations, especially among animals such as deer and elk which forage for food. There may be a reduction in populations as a result of the fallen ash.

Yesterday, University of Idaho Veterinary pathologist David P. Olson said livestock may have long-standing and, if exposure is severe enough, permanent damage to lung tissue, especially for those animals which graze on the ground and forage for themselves.

Dr. Olson recommends getting the animals away from exposure where possible by confining, and checking them frequently for signs of respiratory stress or dust pneumonia. If an animal appears to be having respiratory difficulty the solution is to get it away from continued exposure, hand feed the animal, and wet down its feed if it was exposed to the ash fall to keep the dust content minimized. Also, wetted ash cake , thus is less likely to break down and become airborne even when it dries. If respiratory difficulty continues or becomes pronounced, consult a veterinarian.

Dr. Olson feels that most animals will recover from exposure to the ash since animals can lose some lung capacity and still survive. Another problem, although less likely, is that great coughing may be stimulated. The ash irritation which may rupture tiny air-sacs in the lungs may eventually result in emphysema in the animals.

Clark County Washington State University Dairy Extension Agent Al Estep says that milk production is down due to dairy cows loss of appetite. Although the ash-laden pasture is not toxic it appears to affect the palatability of the feed.

Unlike dairy cows in Pullman,chicks are being fed diets consisting of up to 39% volcanic ash. They seem to be eating the ash and growing normally. Dr. James McGinnis collected volcanic ash from sidewalks the day after it fell and began feeding it to day-old chicks the next day. He divided 210 chicks into seven groups of 30. One group receives no ash in its food, providing a control to measure the performance of others. Three other groups are eating volcanic ash in their feed. One group receives 10 percent of its feed in the form of volcanic ash. Another receives 20 percent. The third is given 30 percent. The experiment is duplicated in three other groups, with ordinary sand substituted for ash. McGinnis said the comparison is being made between sand and ash because of their similar nature.

The scientists reported all of the chicks are healthy and gaining weight normally after a week on the diet. He said the chicks in the experiment have never eaten anything but the feed they are receiving in the ash study. The chicks look fine. They are active, healthy and growing at a "terrific" rate. He said if there was any toxicity in the ash, it should have been reflected within a week in the health of the chicks or in the rate at which they are growing.

McGinnis said he will continue the experiment until the chicks reach market weight in about six more weeks.

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The Washington State University Animal Sciences Department is planning research projects on volcanic ash, acceptability to food animals and its effects, if any. However, these experiments will require more time to conduct because of the size of these other animals. Numerous studies have shown that the composition of the feed does not change the makeup or flavor of the milk or meat. Likewise, ash is not expected to cause any change in the quality of foodstuffs.

Seventeen percent of Washington's honey bee colonies may be wiped out by ash from Mount St. Helens, Dr. Carl Johansen, a Washington State University Entomologist, has stated. Initially Washington State University entomologists thought honey bees would survive reasonably well because warm weather preceding the mountain's eruption had enabled bees to establish supplies of food and populations of brood and hive bees were high. However, Johansen said the entire honey bee field force in the area was annihilated. Until rains occurred, the field bees that left hives each day died. Although moderate to heavy rains cleansed plants early this week, Johansen said as soon as the ash dried it was carried into the air and continues to plague the bees. When the colony becomes too weak to clean itself, the uncapped brood begins to die from dust contamination. Housekeeping bees are lost when they become contaminated with ash on landing boards, Johansen said.

Lack of summer pasture long has been a serious problem for Washington's beekeepers and Johansen expects the volcanic ash to further restrict bee pastures this summer. Beekeepers are recommended to move hives outside the ashfall area. As this will place extra demands on pastures in other areas, beekeeper associations may want to locate and arrange for pastures. The scientists said Washington has 70,000 commercial bee colonies. About 15,000 of them are in areas that received

the heaviest ashfalls. Johansen expects at least 12,000 of these to be destroyed. He said beekeepers are estimating their losses at 2 million dollars from severe reduction of honey production, loss of normal colony increase, loss of summer pollination fees, loss of contaminated beeswax (which cannot be salvaged), and losses to normal operations that cannot be carried out. Special costs of equipment and labor expended to cope with the ashfall also are involved. Johansen said the industry should be able to bounce back with normal bee populations next year.

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