

Leukosis Study Shows Value Of Management

Marek's disease, an acute type of leukosis, can spread from infected to healthy chickens in droppings and saliva, a U. S. Department of Agriculture scientists reports.

Dr. Richard L. Witter, a research veterinarian in USDA's Agricultural Research Service, says that study findings imply that farmers should take special care to disinfect or sanitize feeders, waterers, house surfaces and equipment which can harbor droppings and saliva

from a previous flock. Like other forms of leukosis, Marek's disease is a cancer-like infection; it attacks the nervous system, viscera, eyes, muscles, and skin — causing more poultry losses than any other disease. It is not infectious to man or other animals.

Before the ARS study, conducted at the Regional Poultry Research Laboratory, East Lansing, Mich., knowledge about the disease's spread was sketchy.

In one of a series of trials, healthy birds raised in isolation units were placed on litter exposed to droppings from infected birds. All exposed birds contracted the disease. On the other hand, birds

kept under similar conditions but on sanitized litter stayed free from the disease. Tests with swabs of saliva transferred from infected to healthy birds showed that this route of infection also is possible.

The ARS research is a first step toward discovering a weak spot in the cycle of infection from infected to healthy chickens. Studies on this and other effective methods of control are continuing.

Pasteurizer Purifies Water For Rural Use

Helping to solve the problem of polluted water in rural areas, agricultural engineers at Penn State University have developed an electric pasteurizer capable of purifying water used by an average family of five persons. This development was described by Mark D. Shaw, of the agricultural engineering department, during a Farmstead Water Quality Improvement Seminar in Columbus, Ohio.

Shaw said the new pasteurizing system uses conventional electric water heaters to heat and store pasteurized water. A heat exchanger is used to pre-heat the incoming water and

to cool pasteurized water for drinking or other uses where hot water is not needed. A control system makes certain that water does not leave the unit until it has been at the pasteurizing temperature of 145 degrees Fahrenheit for 30 minutes. The process is automatic, he added, and eliminates the need for careful maintenance essential in chlorination systems.

Work in developing the pasteurizer commonly used today was begun in 1961, Shaw pointed out, when Pennsylvania health authorities reported that about half of the individual water supplies tested each year were found to be polluted. Cost of pasteurizing water for use by two adults and three children amounted to less than \$3 per month.

Two, conventional 80-gallon electric water heaters were more than adequate to heat and pasteurize all of the water used indoors by the family of five persons, including laundry, bathing, and toilets. Only water used outdoors for watering the lawn and similar purposes was not pasteurized

Tested also in a milkhouse, one 50-gallon heater proved adequate where a minimum of water was used. Both systems operated satisfactorily.

Addressing members of the American Society of Agricultural Engineers in 13 agencies and organizations, Professor Shaw said work is underway to have the pasteurizer manufactured and placed on the market.

Air Pollutants Combine To Cause Crop Damage

Two air pollutants — ozone and sulfur dioxide — can combine and damage plants before either pollutant alone would cause damage.

This finding, by plant physiologist H. A. Menser and plant pathologist H. E. Heggestad, disproves the theory that the two pollutants act independently on leaf tissue.

Results of their test, the scientists say, may explain some of the air-pollutant damage to plants that occurs in the late spring and early fall when recorded levels of ozone and sulfur dioxide alone are not high enough to cause damage.

Sulfur dioxide is largely a product of fuel combustion for power and heating. Concentrations tend to be highest in fall, winter and spring. Ozone is one of a class of air pollutants called oxidants, or photo-chemical smog, formed by the reaction of sunlight on exhaust from motor vehicles. Levels of oxidants are generally highest during summer.

Both ozone and sulfur dioxide damage a wide variety of vegetable, field, and ornamental plants. The pollutants reduce leaf quality of crops such as tobacco and spinach, and cut yield of crops such as cereal grains, grapes, beans, and citrus fruit. They damage tree leaves and hinder development of ornamentals.

Nitrate Poisoning Can Be Prevented

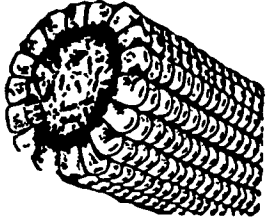
Nitrate poisoning can be prevented. The prime concern with drought-affected corn is getting it into the silo when it is in the best condition; then nitrate toxicity can be dealt with. Nitrogen buildup occurs in fast growing plants when they are suddenly interrupted in their growth due to

(Continued on Page 16)

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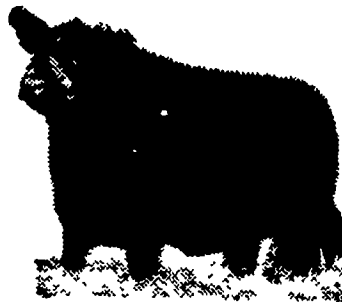
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