

Selenium Deficiency Explained

One pound in 5,000 tons of protein may be practical under some circumstances. This is the small amount of the element selenium necessary to prevent certain diseases in both livestock and poultry.

Each year Penn State's Animal Diagnostic Laboratory encounters what are termed "selenium-responsive" diseases—cases that could have been prevented or treated with selenium, reports David C. Kradel, assistant professor of veterinary science at Penn State.

White muscle disease, also called stiff lamb or stiff calf disease, is the most common "selenium-responsive" disease encountered. This condition, as suggested by its name, affects the muscles of lambs, calves, foals, pig, and chicks. These young animals become stiff, are reluctant to move, and may be unable to rise. Many develop a complicating pneumonia prior to death.

Such diseases may be controlled in several ways.

Grains and certain feed mill supplements produced in the prairie states, an area of high soil selenium content, are adequate or high in this element. When these products are mixed with ingredients grown in selenium deficient areas, a feed with adequate selenium usually results.

Because the amount of selenium needed depends in part on certain other nutrients, additional supplementation with vitamin E, methionine, or high quality

Injectable products — some of which contain both selenium and vitamin E—are available for use in livestock and afford practical control in many situations. Injections should be given only on recommendation of a veterinarian.

A survey of Pennsylvania forages and grains, some of which came from farms with "selenium-responsive" diseases, has shown these to be low or borderline in selenium content. This correlates with selenium deficient soil areas found in the northeastern states and the Pacific northwestern states. The plant analyses were done by Dr. W. H. Alloway of the U.S.D.A. Plant Soil and Nutrition Laboratory, Ithaca, N.Y.

One form of white muscle disease destroys portions of the heart muscle and young animals may be found dead without prior signs of illness. The heart form is observed in thrifty, rapidly growing hogs.

Because of the red hemorrhages in the heart muscle, the condition is called mulberry heart disease.

Affected pigs usually weigh between 100 to 150 pounds and often are found dead without prior signs of illness. One or more hogs may die over a several day period and then losses cease as suddenly as they started.

Selenium deficiency has been associated with a disease of hogs

primarily affecting their livers and called hepatosis dietetica. In fat beef cattle this is known as "sawdust" liver, a cause for condemnation at slaughter. Baby chicks may be afflicted with encephalomalacia, a degenerative brain condition, or with fluid accumulation called exudative diathesis.

Also associated with selenium deficiency are certain cases of

unthriftiness in lambs and calves, "tying up" in horses, and a type of infertility in ewes and possibly cattle. Many of these diseases have been observed in Pennsylvania.

Kradel pointed out that although these conditions result from a selenium deficiency, this is an over-simplification of a very complex problem.

Research and field observations have shown that these diseases occur only when a certain combination of numerous interrelating soil, plant, animal, and environmental factors is present. Often scientists are at a loss to precisely define the necessary combinations.

ACF Produce Trading License Is Suspended

The produce trading license of ACF Produce, Inc., Newton, Pa., has been suspended under the Perishable Agricultural Commodities Act, effective June 1, for failing to pay a reparation award of \$1425, the U.S. Department of Agriculture reported recently.

Officials of USDA's Consumer and Marketing Service said the firm and its officers, directors and stockholders—Celeste Ferri, Angela M. R. Piro, and Mary Piro Ferri—are not entitled to conduct business subject to the PAC Act until the reparation award is satisfied and the license suspension is lifted. They cannot be employed by another PACA licensee without USDA approval.

C&MS officials said a produce shipping firm in New Brunswick, Canada claimed that the Pennsylvania firm had failed to pay

for a truckload of potatoes. The Pennsylvania firm was advised of the complaint, but did not answer the charges. USDA's Judicial Officer ordered payment of the full amount claimed due.

The produce trading license of Johnie Stanley Banana Co., Inc., 708 E. 2nd St., Huntingdon, W. Va., has been suspended under the Perishable Agricultural Commodities Act for failing to pay a reparation award of \$6,911, the USDA said.

C&MS officials said a Winston-Salem, N.C., produce firm complained that the Huntington firm had failed to pay for three truckloads of bananas purchased. The Stanley firm was advised of the complaint but did not answer the charges. USDA's Judicial Officer ordered payment of the full amount claimed due for each transaction.

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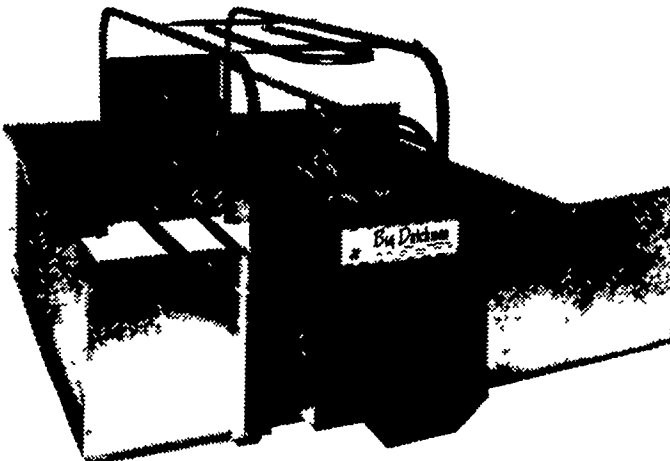
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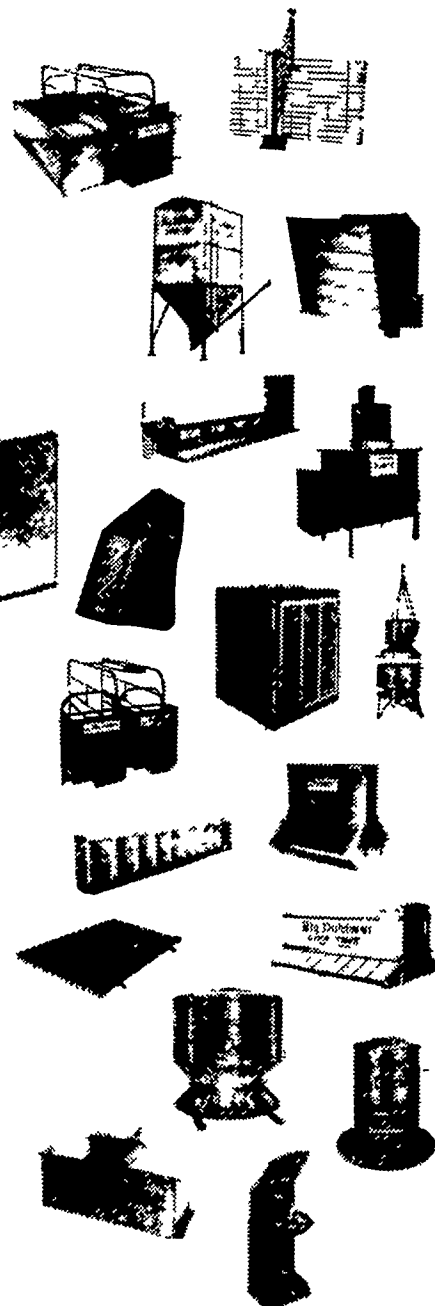
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