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UNITED STATES DEPARTMENT OF AGRICULTURE
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For Distribution or Release if Desired by Cooperators in the Bovine Hyperkeratosis or X-Disease of Cattle Research Program

The annual meeting of the national Technical Committee on Bovine Hyperkeratosis (X-Disease of Cattle) met in State College, Pennsylvania, on May 4 and 5, 1953. Representatives of Agricultural Experiment Stations and the U S. Department of Agriculture were presentto present and discuss research findings. States represented at this meeting were Alabama, Georgia, Illinois, Indiana, Michigan, Nebraska, New York, Oklahoma, Pennsylvania, Tennessee, Virginia, and Wisconsin.

The group emphasized that the potential losses from bovine hyperkeratosis had been greatly reduced over what might have been experienced from livestock pelleted feeds, had the research done by the cooperating group not been available to solve the cause of the heavy losses.

Although research has indicated a cause of bovine hyperkeratosis (X-disease of cattle) considerable loss occurred in some herds of cattle last year.

This cause is highly chlorinated naphthalene compounds, valuable in special purpose lubricants.

Much of the disease can be prevented by feed manufacturers and farmers using present research results. Feed manufacturers have been informed of the danger. Farmers should keep livestock away from machinery so that they cannot lick grease. Occasionally, used crankcase oil will contain chlorinated naphthalene and has been known to cause this condition.

A search must be continued for other harmful substances, although many chemicals have been already tested.

While a cause has been found effective treatment is unknown. The slow development of symptoms in an outbreak leads to much loss before the cause can be eliminated. Research is needed on the chemical reactions of body tissues. Such results will aid in understanding the disease and may provide a basis for curative treatment.

Research studies show that lubricating greases do not produce hyperkeratosis by the small amounts of grease which get into pellets, unless the grease contains highly chlorinated naphthalenes. Feed companies which process pellets should use a grease for the pellet machines for which they have a warranty from the grease manufacturers that the grease does not contain chlorinated naphthalene.

Research studies also show that the "penta" cotton defoliation procedure which uses pentachlorophenol and diesel fuel is not a cause of hyperkeratosis, or X-disease. The solvent extracted cottonseed meal

and the solvent extracted soybean meal do not produce bovine hyperkeratosis, or X-disease of cattle. The commercial wood preservatives made in this Country do not contain chlorinated naphthalene, the only proven cause of bovine hyperkeratosis, or X-disease of cattle. There are many things which will produce a local irritation of the skin especially when frequent applications are made over a period of time to the skin of cattle. These reactions of the skin to irritants are not the specific condition which has appeared since 1941 as one of considerable economic importance in some herds and known as hyperkeratosis, or X-disease of cattle. However, these local skin changes have often been mistaken for, or confused with bovine hyperkeratosis, or X-disease of cattle, in many field cases encountered.

Insecticides produced, approved, and sold in this Country for use on cattle and livestock forage do not contain chlorinated naphthalene. The only cause of bovine hyperkeratosis or X-disease of cattle which has been proven and confirmed, is highly chlorinated naphthalene, and compounds which contain them, either as an added ingredient, or as a contaminant.

Only a very small amount of this group of compounds is required to produce this specific condition which has caused heavy losses in some herds. The poisoning may be either acute or chronic and the symptoms, lesions, duration, and mortality vary according to the amount the cattle obtain, and perhaps other factors not yet proven. Cattle owners who suspect poisoning from highly chlorinated naphthalene should consult their veterinarian as an accurate and early diagnosis may prevent much additional loss from bovine hyperkeratosis, or X-disease of cattle.

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