

Press Bulletin No. 166

Agricultural Experiment Station

Kansas State Agricultural College

Hog Cholera, and Vaccination as a Preventative Treatment

Reports from various parts of the State indicate the great prevalence of the disease of hog cholera in Kansas at the present time. This Experiment Station is daily receiving letters of inquiry relative to the prevention of this disease.

Probable Causes of Prevalence at this Time .— Hundreds of farms in Kansas have become infected with this disease during the last few months. Increased prevalence of the disease during the present season may be attributed to the excessive rainfall during the past spring and summer. Under such conditions the hog cholera virus has been washed from infected pens and farms into rivers and small streams, these tributaries having emptied into larger streams and flooded districts, thus sweeping the infection over large areas. Other means of dissemination such as dogs, birds and the boots of stock buyers have doubtless contributed their share toward the wide distribution of the disease.

Precautions Against the Disease e— The greatest care should be exercised to keep the infection from entering healthy herds. If the disease is in the immediate locality stray dogs should not be allowed in the hog lots or pastures. To eliminate as much as possible, infection from birds, the hogs should be fed in covered enclosures. Stockmen and buyers should not be allowed to enter the premises without first thoroughly disinfecting the shoes with some such germicidal solution as carbolic acid. The hogs should, under no consideration, have access to a stream which is fed from water running through other farms. No newly purchased hogs should be placed with the general herd until they have been kept in quarantine for two or three weeks. Plenty of air-slaked lime should be used about the hog houses and feeding places.

VACCINATION

The Bureau of Animal Industry, U. S. Department of Agriculture, has recently perfected a vaccine known as "Dorset's Hog Cholera Vaccine." It consists of (1) immune serum (blood serum drawn from a hog which is immune to the disease) and (2) hog cholera virus (blood serum from a hog suffering from the disease). The two substances are injected simultaneously into the healthy hog. Experimental evidence shows that this method of vaccination is efficient.

"Dorset's Hog Cholera Vaccine" has some disadvantages. (1) These serums, both the immune and the hog cholera serum, are expensive because

they are obtained from hogs which, in comparison with other domesticated animals, yield only a small amount of blood serum. Under these conditions this process involving the killing of hogs to save hogs, when put into practice, is very expensive. (2) The danger that might follow the broadcast distribution of hog cholera virus, in some instances among careless veterinarians and uninformed farmers, cannot be ignored.

KANSAS EXPERIMENT STATION WORK.

The Bacteriological Department of the Kansas Station has, during the past year, conducted a line of experimental work in an attempt to produce a practical hog cholera vaccine. The general scheme of the work has been to attenuate or so modify the hog cholera virus by passing it through a horse that it will successfully vaccinate a healthy hog against the disease but will not produce infection. Three horses and some twenty hogs are at present under observation, and during the fall months some field work will be undertaken. The following conclusions have been suggested by the results so far obtained:

1. Hog cholera serum exerts a toxic influence upon a healthy horse when injected intravenously.

2. The blood serum from a horse, drawn a few hours (3-6) after the animal has received in the veins 75 to 150 cc of hog cholera serum, is as virulent as the original hog cholera serum, producing typical symptoms of cholera and death when injected into healthy hogs. In some cases horse serum, drawn 3-6 hrs. after the animal has received intravenously a dose of hog cholera virus, produces in healthy hogs a more acute form of the disease than does the original serum.

3. The blood serum of a horse, drawn 24-72 hours after the animal receives an injection of hog cholera virus intravenously, shows attenuated properties and does not produce disease when injected into healthy hogs. It also, however, in most cases, produces a reaction in the temperature of the healthy hog five to twelve days after the inoculation.

4. Twenty-four-hour horse serum (drawn from the horse 24 hours after the animal was injected intravenously with hog cholera serum) when injected into healthy hogs exhibits protective properties against the disease.

A bulletin is in process of preparation which will explain the above experiments in detail.

WALTER E. KING, *Bacteriologist.*

Manhattan, Kan., Sept. 15, 1908.