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## EC1548 Revised 1947 Controlling Hog Mange and Lice with Benzene Hexachloride

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## Controlling Hog Mange and Lice with Benzene Hexachloride



Cooperative Extension Work in Agriculture and Home Economics  
University of Nebraska College of Agriculture, and the United States  
Department of Agriculture cooperating.

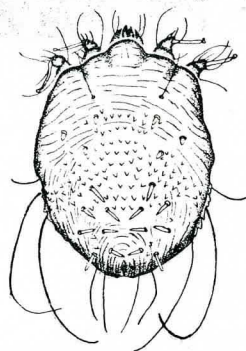
## CONTROLLING HOG MANGE AND LICE

Martin H. Muma, Extension Entomologist

The two most common and important insect parasites of hogs in Nebraska are mange mites and hog lice. Although all classes and ages are attacked, injury is greatest to pigs. Both of these parasites develop large populations on poorly fed animals that are kept in insanitary pens and houses. Hogs infested with either or both of these insects are restless, rub frequently, have reduced vitality, grow slowly, eat more feed, and produce a poor quality of pork. In cases of extreme infestations little pigs may be killed.

### Mange

Two kinds of mange mites infest hogs. They are sarcoptic mange (Sarcoptes scabiei Deg.) and demodectic mange (Demodex phylloides Csokor). Sarcoptic mange, common mange or scabies is by far the most common. The sarcoptic mange mites are whitish, round-bodied parasites about one-fiftieth of an inch long. They are nearly invisible to the naked eye, but may be seen when infested scrapings from hogs are placed on a dark background. The mites spend most of their lives on the bodies of the animals in tunnels, burrows or galleries beneath the surface of the skin. Adult females and newly hatched young occasionally leave the burrows to move over the body. Eggs that hatch in 3 to 10 days are laid in these tunnels, and the mites mature in 10 to 12 days to complete the cycle. Early stages of sarcoptic mange may be determined by the presence of tiny, pimply, granules or lesions around the eyes, ears, nose, and on the under parts of the body. In old or advanced cases the granular areas grow together and typical dry, scurfy, scabby areas are formed all over the body. Scraping and rubbing by the animals cause much hair to be lost, and the infested areas may be entirely bare.



BENZENE HEXACHLORIDE DILUTION TABLE  
FOR  
.25% OF THE GAMMA ISOMER

For 5 gallons of water -

.84 pound of 12% gamma wettable powder  
1 pound of 10% gamma wettable powder  
1.65 pounds of 6% gamma wettable powder  
2 pounds of 5% gamma wettable powder

For 50 gallons of water -

8.4 pounds of 12% gamma wettable powder  
10 pounds of 10% gamma wettable powder  
16.5 pounds of 6% gamma wettable powder  
20 pounds of 5% gamma wettable powder

For 100 gallons of water -

16.8 pounds of 12% gamma wettable powder  
20 pounds of 10% gamma wettable powder  
33 pounds of 6% gamma wettable powder  
40 pounds of 5% gamma wettable powder

Nebraska  
COOPERATIVE EXTENSION WORK  
IN AGRICULTURE AND HOME ECONOMICS  
U. of N. Agr. College & U. S. Dept. of Agr. Cooperating  
W. V. Lambert, Director, Lincoln



Control of sarcoptic mange has, until recently, consisted of a series of three to five treatments at ten-day to two-week intervals, combined with strict sanitary measures in the hog house and lot. The control recommendations included dipping hogs in a vat in which two or three inches of crude petroleum oil were floated on water, spraying with crude oil thinned with kerosene, and spraying or dipping with a mixture of one gallon of commercial liquid lime-sulfur in 25 gallons of water at a temperature of 95 to 105° F.

Recent test work at the University of Nebraska has developed a new, simple, single treatment control method. Hogs sprayed with .25% of the gamma isomer of benzene hexachloride may be completely freed of sarcoptic mange. Complete coverage of the animals is necessary. Hogs sprayed in a small pen or house climb over each other, thus wetting themselves completely. Care should be taken to spray the inside of the ears. Hog mange treatments should be applied to the breeding stock in the early fall to prevent infestation of the fall and spring pig crop.

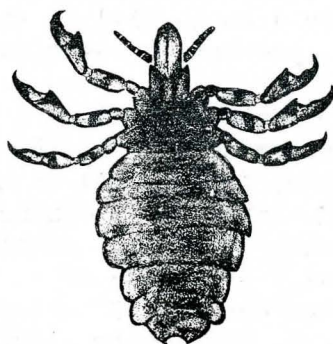
Wettable powders of benzene hexachloride contain varying amounts of the gamma isomer. The exact percentage of the isomer must be known before the spray is mixed. To mix a spray containing .25% of the gamma isomer, use 8 pounds of a 25% gamma powder, 20 pounds of a 10% gamma dust, 33 pounds of a 6% gamma dust or 40 pounds of a 5% gamma dust in 100 gallons of water. Several tests with a spray containing .125% of the gamma isomer have been carried out with promising results. This spray strength is suggested for trial only. Only half of the amounts of the dusts listed above is needed when mixing a spray containing .125% of the gamma isomer. As little is known concerning the toxicity or absorption of benzene hexachloride by animals, spray containing more than .25% of the gamma isomer should not be used.

Demodectic mange is caused by small, microscopic, whitish, worm-like mites that infest the hair follicles and oil glands of the skin. Light infestations of demodectic mange seem to cause no serious discomfort to the animals, but heavy infestations cause deep, well-marked lesions or sores.

Although there is no known treatment that will completely clean up demodectic mange, regular dippings with crude petroleum oil will hold the infestation down. Herds infested with demodectic mange should be dipped, fattened for market, and sold. The houses and lots should be disinfected before they are restocked with hogs. Nothing is known about the effect of benzene hexachloride on demodectic mange.

### Lice

The hog louse, (Haematopinus adventicius Neum.) is the largest blood-sucking louse that attacks livestock. It is bluish gray in color, has a broadly flattened body about one-quarter of an inch long, and is provided with a strong piercing beak. Hog lice are found only on hogs except in accidental cases, and pass their entire lives on the animals. They live only 2 to 3 days when separated from the hogs. The eggs or "nits" that are glued to the hairs hatch in 12 to 20 days, and the young lice mature and begin laying eggs in 10 to 12 days. The average life cycle is about 35 days. Young lice, especially during very hot or cold weather, are frequently found inside the ears. Older lice wander over the body feeding from time to time.



The control of hog lice, in the past, included crude petroleum oil dips as for sarcoptic mange. Today, dipping or spraying in the fall with rotenone or DDT is the recommended treatment. The rotenone mixture consists of 5 pounds of a 5% rotenone powder in 100 gallons of water; the DDT mixture is 4 pounds of a 50% wettable DDT in 100 gallons of water. Two treatments spaced at 14-day intervals seem to be necessary for a complete clean up. Sows should be treated before farrowing, and boars before breeding to prevent infestation of pigs and sows respectively. Housing and bedding should also be treated as a sanitary measure at the time of the first application on the animals.

Early tests with benzene hexachloride show it to be highly effective in killing both the eggs and live lice. The treatment for sarcoptic mange with this material should also control lice.