Canterbury Chamber of Commerce

Agricultural Bulletin

PARASITES OF THE PIG

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The pig is subject to attack by numerous parasites, both external and internal. The external forms are the pig louse, and two types of mange mite. The internal parasites of the pig include roundworm, lungworm, whip-worm, and hydatids. Most of these parasites are of common occurrence and at times lead to considerable financial loss. This bulletin deals with each of the parasites enumerated.

Lice (Hæmatopinus suis)—These parasites are one-fifth of an inch in length, and are the largest found on domestic animals. They pass the whole of their life on the pig, feeding and breeding there. Although they may, by accident, be transferred to other domestic animals, or to man, they will not breed on such hosts, but may pierce the skin and obtain a meal. They may be found on any part of the body. Food is obtained by piercing the skin with needle-like mouthparts and sucking up blood. The piercing of the skin in particular, and the scratching movement of the claws to a lesser extent, give rise to considerable itching, which causes the animal to rub itself against any convenient object. Eggs are laid and attached firmly to the bristles by means of a clear cement. It is usual to find eggs most abundantly on the lower parts of the body. The incubation period for eggs varies from 12 to 14 days. Sexual maturity is reached in 18 days after hatching, so that the cycle from egg to egg is about 30 days.

Considering the ease with which lice may be destroyed, there is no excuse for anyone having pigs lice-infested. Lice on pigs are readily destroyed by the application of almost any oily preparation. If pigs are treated by hand, it is advisable to give two applications, the second one 14 to 16 days after the first, so that eggs which escaped the first dressing may have had time to hatch out and be destroyed by the second. The best method is to use a vegetable oil and apply it to all parts of the body with a stiff brush. It is possible to make arrangements for the animals to treat themselves. This can be done by allowing the animals the use of a wallow filled with water to a depth of about three inches. After the pigs have formed the habit of using this wallow, a quantity of linseed oil, ordinary machine oil, or castor oil is poured on top to form a thin film. Waste engine oil may be used in cold weather, but is liable to cause blistering under a hot sun, consequently during the summer months a vegetable oil is preferable. When the pigs leave the wallow, a coating of oil is left on their bodies, and this effectively destroys any parasites on the skin. In very hot weather such a wallow may require to be shaded to prevent the water from becoming too hot for the animals to use readily. A wallow of this nature should be drained periodically and replaced for a time with water only, as the continuous use of oil is liable to cause irritation, and pigs may refuse to use the wallow after a few days.

Another inexpensive and convenient means of applying oil is to wrap sacking around rubbing posts in the pen or paddock. This should be wired firmly to the posts and saturated periodically with waste engine oil or whale oil, or a layer of axle grease. Infested pigs will readily rub themselves against these oiled posts and thus keep a coating of oil on the affected parts. This latter method will not eradicate lice, but should tend to lessen their spread.

Mange Mites (Sarcoptes scabiei suis and Demodex folliculorum suis): Two types of mange occur on pigs, the sarcoptic and the demodectic or follicular. The latter rarely occurs, and is of no consequence in New Zealand.

Sarcoptic mange is a serious ailment of pigs and, during the last few years, has been prevalent in many parts of New Zealand. The mite which gives rise to this disease is similar to the one which causes scab in sheep, and also to the one which causes mange in horses, but it is a different variety and will affect only pigs. It is not visible to the naked eye, but scrapings taken from the skin of affected pigs, when examined microscopically, will readily reveal the small, round, white mites. These mites do not live on the surface of the skin, but penetrate the upper layers and excavate burrows, in which they lay their eggs.

The excavation of these burrows sets up a much more severe irritation than that caused by the presence of lice. As the average period of incubation on the animal is about four days and the average period after hatching until egg laying begins is about 11 days, a new generation of mature mites may be produced every 15 days.

Sarcoptic mange may start on any part of the body, but it frequently commences on the head around the eyes, nose or ears. From these parts it spreads over the neck and shoulders and along the back and sides, finally involving the whole body. The burrowing of numerous mites in the sensitive layer of the skin causes inflammation and swellings about the size of pinheads and coated with yellowish sticky material appear. The intense itching causes the pig to rub itself until affected areas often become raw. Loss of hair occurs, the affected parts appear dry and scurfy and may be covered with brownish scabs. In neglected cases the skin becomes bare, much thickened and wrinkled. The rubbing of the animal against objects may result in the running together of the small pinhead areas to form large scabs.

Mange in pigs is highly contagious and is spread by contact with affected animals or by rubbing against affected posts or from contaminated litter. Pigs of all breeds and ages are susceptible but young anmals suffer most severely.

Mange should be treated by applying to the skin a preparation which will destroy the mites. Control of the disease is dependent on a second treatment not sooner than seven days and not later than 10 days after the first. This will kill the mites which have hatched out from the eggs not destroyed in the first application. Hand dressing, which is applicable only on farms where few pigs are kept, must be very thorough to be successful. Preliminary treatment consists in washing with 5 per cent. solution of liquor potassae, or alternatively soft soap or washing soda in water may be used. The following substances are used as hand dressings and are best applied with a stiff brush over the entire surface of the head and body, including the insides of the ears and between the thighs:—(a) Crude petroleum (fuel oil) or (b) Sulphur and oil (1 part flowers of sulphur to 4 parts raw linseed oil), or (c) Kerosene and lard (½ pint of kerosene to 1lb of lard).

Dipping is a far more satisfactory method of dealing with mange in pigs. Where large numbers of pigs are kept a special dip is necessary unless a small sheep dip is available. The most effective materials for dipping are (a) crude oil, or (b) lime-sulphur. The former is regarded as being the more effective and entails at most only two dippings whereas with lime-sulphur four dippings at intervals of a week are necessary. If an oil dip is used there should be 40 inches of water on which oil is poured to a depth of from 6 to 8 inches, the liquid in the dip being 46 to 48 inches deep, which is sufficient to swim the tallest animal. In going through the dip every part of the pig's body gets a coating of oil. Where mange occurs, it is essential to dip every pig on the farm, and, as previously indicated, animals should receive a preliminary washing.

Lime-sulphur may be bought ready for use or prepared as follows:—Mix 25lb of flowers of sulphur with 12½lb of good quicklime. Grind the mixture with water until a cream is formed. Transfer this cream to a boiler and add water until the volume is brought up to 20 gallons. Boil and stir until the liquid is dark red in colour. This will take about half an hour, and water must be added occasionally to keep the volume up to 20 gallons. Cool the liquid and pour it off from any small insoluble residue. Water, to bring the volume up to 100 gallons, should be added, after which the material is ready for use.

To eradicate mange from a farm it is necessary not only to treat the animals, but to burn all affected litter and wash the pens and paint all wood work with waste oil. It is also advisable to move all pigs to fresh quarters and leave pens which have housed diseased pigs unoccupied for six weeks.

Round-worm (Ascaris lumbricoides)—This is one of the most prevalent and widespread internal parasites of the pig. The worm is about the thickness of an ordinary lead pencil, and measures from six inches to over a foot in length. It is pure white in colour, and pointed at both ends. These worms infest pigs of all ages, but young animals, up to four months old, are much more susceptible to heavy infestation by the parasite than are older animals, which appear to develop a certain degree of immunity. The adult worms inhabit the small intestine, often in large numbers, so much so that death may result from the blocking of the digestive tract. The female worms produce eggs in large numbers, a single individual being capable of laying thousands a day. The eggs are passed out with the droppings, and infect the ground, food, and water. Roundworm eggs have phenomenal powers of resistance, both to climatic conditions and to chemical disinfectants. Eggs reach the infective stage after lying on the ground for a week or two, and they then remain viable for long periods. The swallowing of "ripe" eggs leads to infection. Before settling in the intestine larval worms travel through various organs of the body, including the lungs, where they are liable to give rise to bronchial troubles.

A heavily infested pig usually runs a high temperature, while its breathing is abnormally rapid, and sometimes irregular. It very quickly becomes unthrifty, pot bellied, and a poor doer with a variable appetite. The digestive disturbances set up by the presence of the worms frequently lead to diarrhœa, which may alternate with constipation. Infested pigs respond to medicinal treatment. This is as a rule only necessary in the case of young pigs, older animals rarely requiring treatment. Santonin is the safest and most effective substance to use when pigs are dosed for roundworms. The drug, in powder form, is best given in milk, the dose for a pig being from five to 10 grains, according to the age and size of the animal. It is necessary to treat the animals singly to ensure that each receives the correct dose.

Prevention of heavy worm infestation should be aimed at, and this will be dealt with after the other worms have been discussed, since the same preventive measures apply.

Whip-worm (Trichuris trichura)—This is an extremely common parasite of pigs, and occurs in the large intestine. The length of this worm varies from one to one and three-quarter inches. The front two-thirds is very slender while the remaining third is considerablv larger, and this curious form is responsible for the name "whip-worm." The whip-worm attaches itself by the slender end to the lining of the large intestine. When present in large numbers, it is responsible for intestinal catarrh, diarrhoea, and poor bodily development in young pigs, but older animals are apparently not seriously harmed by its presence. It is difficult to reach the whip-worm with drugs owing to its attachment and location. Treatment with Tetrachlorethelene in milk may give beneficial results. The dose is from one to five cubic centimetres a pig according to age and size.

Lung-worms (Hyostrongylus rubidus and metastrongylus spp.)—Lungworms are white, thread-like forms, measuring from one to two inches in length, which inhabit the air tubes of the lungs where they feed and deposit their eggs. Irritation is set up by the presence of worms in the lungs, and a husky cough, frothy discharge from the nostrils and general unthriftiness indicate the presence of lung-worms. The spasms of coughing are effective in carrying the eggs up into the throat, and these reach the outside in the frothy discharge or are swallowed and pass to the ground in the droppings. In those species of lung-worms where the life cycle is completely known, the larva hatching from the egg is incapable of infecting a pig directly but requires to pass through an intermediate host first. The earthworm is known to act as the intermediate host of pig lung-worms. The pig is liable to become infected through the swallowing of earthworms when the larvae are set free in the intestines and migrate by way of the blood stream to the lungs, which they reach in the course of five days' time. Maturity is reached in three to four weeks after infection. Treatment of affected animals is not very satisfactory, and preventive measures, including the housing of animals in dry, well-drained quarters, should be aimed at.

Lung-worm is quite common in large herds where many pigs are kept in the same pens or on the same ground year after year without due regard to sanitation. Where only a few pigs are kept, and those given considerable liberty as to range and living quarters, little trouble is experienced.

Hydatids (Echinococcus granulosus)—The bladder-worm stage of this dog tapeworm sometimes occurs in the liver and other organs of the pig. Pigs are, however, far less frequently infected than sheep. It appears to be more prevalent in wild pigs in New Zealand than among domestic animals. No satisfactory method of treatment is known for hydatids. Since the disease is set up by the ingestion of eggs of one of the dog tapeworms, all practicable measures should be taken to prevent the contamination of pigs' food or their grazing paddock by dogs' excreta.

Pig Worms and Human Beings—It has been definitely shown that both the roundworm and the whipworm of the pig are identical with those occurring in man. Human beings of all ages are liable to infestation with roundworms, while children are particularly liable to be attacked by whipworm. Cases are on record where heavy infestations of human beings, particularly children, with these worms were traced to the practice of spreading pig excreta on garden plots where children frequently played. It is highly desirable that people who have occasion to handle or attend pigs should bear in mind the ease with which eggs may be transferred to the mouth, and regard the pig as a likely source of infection for man.

Preventive Measures for Worms—Young animals are much more liable to heavy infestation, and suffer much more severely than older animals. Older animals harbour worms, usually without apparent ill effects, and act as sources of infection for young pigs. The object to be aimed at is to protect young animals, pigs up to four months old, from infection. This object can best be attained in the following manner.

Pig pens are thoroughly cleared of all litter and manure and then scrubbed out with boiling water. Roundworm eggs are particularly resistant to disinfectants, so that the addition of these to the water is not very necessary. The liberal use of boiling water is the best safeguard. Once pens are cleaned, they should be shut up and kept in readiness to receive young uninfected animals. The sow, not later than two weeks before farrowing, may be given medicinal treatment. Some days after dosing, wash the sow with soap and water to remove all eggs from the skin, particularly the udder. The sow is then put into the clean pens in readiness for farrowing. The sow and piglets should not be allowed out until old enough to go to pasture, and when that time arrives care is necessary not to allow them to cross infected land. The paddock for the sow and young pigs should be land that has been cultivated or cropped since pigs were last on it. After the pigs have reached the age of about four months, precautionary measures are not so necessary and the risk attendant on their being moved to infected land is considerably less. It is easier to eliminate worms by raising pigs by a system of management which prevents worms reaching the animals than by attempting to eliminate them by medicinal treatment after the worms have gained entrance. Prevention is always a profitable and economic proposition, whereas treating animals is always expensive.

Copies of this bulletin may be obtained from the Secretary, Canterbury Chamber of Commerce, P.O. Box 187, Christchurch.

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