

Keeping Pigs Healthy to Maximize Gain

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The centralized testing station for the performance testing of swine has some special problems and considerations which must be taken into account because of the large numbers of farms from which swine come to such facilities. It is virtually impossible to keep all disease problems from entering such facilities. Ideal construction for these facilities prevents any nose to nose contact of pigs from different farms and does not allow any flow of fecal material or urine from pen to pen. In effect each pen becomes a small isolation unit. Walls approximately three feet high made of impervious material will serve nicely to prevent the spread of many bacteria and some viruses. Other viruses, such as TGE are so pervasive that they will spread throughout the facilities no matter what precautions are taken.

Assuming facilities which are designed to minimize disease transmission, swine must be observed closely and immediately upon the first evidence of any condition which cannot be cleared through treatment, or immunization, these swine must be removed from the test station, i.e. dysentery.

Because of the large number of products which are used for the immunization of swine which come from non-federally licensed sources, any immunization which has been done prior to entry into the testing station may or may not be effective. Therefore, a rigid immunization program should be established and all entering swine should go through this standardized program.

The immunization procedure used by the Iowa Swine Testing Association is as follows:

As soon as possible after entry to the test station each pig is given a single dose of oral T.G.E. vaccine. This is a product presently sold in Iowa for which data has been submitted for federal licensure. Since the use of this product has been instituted, the incidence of scours in pigs upon entry to the test station has been greatly reduced. This is not to say that all scours in pigs coming into testing stations is due to T.G.E. However, the theory of viral action, is that once a virus enters a cell, another virus will not enter that same cell. This is known as "the cell block theory". If this is true, by providing the modified live non-disease producing virus, we prevent the spread of other virus which cause scours while immunizing the test animals against T.G.E. It is generally said that each day of scours adds 3-4 days in total time to reach market weight. The cost and labor of administering this vaccine would make it uneconomical to use on feeder pigs for slaughter purposes, however, for performance testing of breeding stock it is economically very sound.

In addition to T.G.E., all pigs are vaccinated against Erysipelas, Bordetella, and Pasteurella upon entry into the station. On the same date of the T.G.E. vaccine administration the pigs also receive a dose of Bordetella Bacterin and a dose of Pasteurella bacterin. Seven to ten days later the pigs receive another dose of Pasteurella Bacterina and a dose of Erysipelas Bacterin. Following this by another 7-10 days each pig receives a second Bordetella Bacterin and a third Pasteurella Bacterin injection. The logic behind this immunization procedure requires some explanation. Bordetella Bronchiseptica normally causes the destruction of turbinates and snout deviation only when the pig is infected at a very

young age. However, pigs not previously infected are susceptible to infection at any age and if exposed will harbor and shed the organism for a varying period of time. The reason for immunizing these pigs upon entry into the testing station is not for the protection of the previously exposed pig. It is for the protection of the buyer of pigs from the testing stations. Since the practice of giving each pig two injections of Bordetella Bacterin upon entry into the testing station was instituted, no positive cultures on nasal swabs for Bordetella bronchiseptics have been found when purchasers requested that culturing be done. In this case the use of a bacterin aids in offering protection to the client in what would otherwise be an impossible situation. In excess of 90% of all swine herds sampled at random were found to harbor Bordetella in the nasal passages.

The use of Pasteurella bacterins is another procedure that is normally not done on the farm and when it is done results are frequently unrewarding. That is largely because that bacterins are not properly administered. Because the Pasteurella's are not good immunizing agents it is necessary to give at least 2 and preferably 3 doses separated at intervals of 7 to 10 days. This involves three handlings of each pig and most producers simply won't put this much labor into immunization. Again this procedure has been very helpful in reducing the incidence of pneumonia in swine at the testing station. In addition to reducing the incidence of pneumonia it also reduced costs because of the reduction in total drug costs for treatment of pneumonia. The exact effect on rate of gain attributable to the prevention of pneumonia is difficult to establish, however, observations of littermates having had and not had pneumonia are very striking.

Erysipelas immunization is done in the routine mainly to prevent lamenesses in animals after they leave the testing facility. Lepto vaccination for the five strains known to cause problems in swine are administered just prior to sale. This is again done to protect the purchaser and has no real effect on performance in the test station.

In addition to testing pigs entering the test station are tested for pseudorabies. Only pigs from pseudorabies certified free herds are allowed to enter the testing facility. Those that are housed in pens designated for individual farms are not required to test prior to entering the test station. However, they are tested approximately 10-14 days after entry to assure that they are in fact negative. Pigs which are being commingled for breed association tests have been required to pass a negative test prior to entry into the station, and they have been retested approximately three weeks after entry. The reason for the required test before entry even from certified herds is to protect other breeders who's pigs will be mixed together. This system of admission requirements has prevented positive animals from entering the test station on all but two occasions. In one instance an individual pen was delivered which proved to be positive and in one case a breeder delivered two pigs for a breed association test that were found to be positive. In both instances the pigs were immediately removed from the test station and two weeks (14 days) later the 50 pigs nearest to the infected individuals were retested to see if any spreading had occurred. Having passed this test these pigs were again tested 30 days after the second test to make absolutely sure that no spread occurred and all individuals were again tested for pseudorabies and brucellosis within 30 days of sale. If any evidence of spreading were to be found the only alternative would be to quarantine the facility. Producers are generally reluctant to test prior to bringing swine to the test station, partially because of cost, partially because of the turn-around time in getting results from the lab and partially because of the difficulty of selecting appropriate stock for testing

very far in advance of the entry date. Because of this an attempt is going to be made to test pigs that are to be mixed immediately upon entry into the test station and again 14 days later in an attempt to alleviate these problems. No pigs will be admitted from any farm that has had positive serological tests for a minimum of one year following the last positive test.

There are other diseases for which tests have been perfected. These could be monitored but the economic significance of testing is questionable. This is true of diseases such as Eperythrozoonosis and T.G.E. In the case of T.G.E. the annual total economic loss is surely greater than the loss which can be attributed to pseudorabies. In both cases we have vaccines which are less than desirable, available and in both cases the swine industry is in need of a vaccine which will provide a high level of immunity while eliminating the carrier state.

Provided healthy pigs are submitted for performance testing, implementation of the foregoing immunization and testing procedure will assure maximum gains under the test conditions and provide the purchaser maximum assurity of freedom from serious disease problems.