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Prevention of Baby Pig Anemia

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Introduction

Prevention of iron deficiency anemia in baby pigs requires the attention of swine producers. Almost all newborn pigs raised on concrete will develop anemia unless preventive measures are used. Therefore, the decision should not be whether or not to use preventive measures but which method of prevention to use.

What is iron deficiency anemia of baby pigs?

Iron is a necessary element in the formation of red blood cells and the compound hemoglobin which is a part of the red blood cell. Hemoglobin is the vehicle by which oxygen is transported from the lungs to the cells of the pig. If iron is lacking in the body of the pig or in his daily diet, he is unable to form hemoglobin and, consequently, the cells of the body are unable to function properly due to the lack of oxygen.

Iron deficiencies not only affect hemoglobin formation, but may affect the body's ability to produce certain enzymes which are essential for metabolism in the body. Since all the vital functions of the body are dependent on enzymes, the lack of iron has a definite effect on the body.

Symptoms of iron deficiency

The symptoms of iron deficiency may vary from the acute to chronic signs. The classical picture of baby pig anemia is the sudden death of the largest best doing pig in the litter, seemingly with no external symptoms of trouble. Upon post-mortem examination these pigs will show an enlarged heart and abnormal amounts of fluid in the heart sac. Signs of chronic anemia may vary. Pigs may not do well, grow poorly, and appear listless with the eyelids dropping and the ears and tail hanging limp. The hair coat may be rough, dull, coarse, and stand erect. Anemia lowers the resistance of the pig to disease. Enteritis (scouring) is common in anemia pigs and if often considered to be a symptom of anemia. Two factors are involved where enteritis is considered a sign of anemia. First, the iron deficiency and resulting interference in the enzyme system may cause failure of digestion with subsequent enteritis. Secondly, the lowered resistance to disease organisms may let the causative agents of enteritis take over in the digestive system. The growth rate may be decreased by borderline cases of anemia in which no outward detectable signs of anemia are present in the pig.

Why is the baby pig susceptible to anemia?

The baby pig is not born with sufficient iron stores to furnish its needs during the suckling period. Under natural conditions the pig supplements his iron from dirt in his environment. However, on concrete he is unable to supplement his iron supply.

The sow's milk is a poor source of iron. The baby pig's daily milk intake contributes
about one milligram of iron, and his daily requirement is about seven milligrams of iron.

The baby pig grows at a very rapid rate. During the first three weeks of life the average pig increases its birth weight by four times. This calls for similar rapid increase in the amount of blood and the hemoglobin it contains.

Methods of preventing anemia

The pig born on the ground is seldom deficient in iron because of ready access to soil, even at a very young age. Most soils are a rich source of iron.

Basically, three approaches have been tried to prevent anemia. First, an effort is made to build up the iron storage in the baby pig before birth. Massive doses of iron have been fed or injected into pregnant sows. However, very little of this iron is stored in the unborn pig.

The second approach is to increase the content of sow’s milk. As noted previously, the sow passes only small amounts of iron in the milk to the pigs. To date, efforts to do this have failed. The third approach is to administer the iron to the baby pigs either by injection or orally (by mouth).

Oral iron treatments

Soil - This is an effective method of providing iron if the soil is replaced often and is free of swine parasite eggs. One disadvantage is that soil is hard to obtain when the ground is frozen.

Iron salt-sugar solution - This solution is painted on the sow’s udder and is an effective treatment only if administered frequently. The labor requirement is high and the sugar solution will draw flies during fly season.

Oral pills or paste - This method is effective only if treatment is repeated several times. These treatments require a high labor input because the pigs must be handled repeatedly.

Iron blocks or dispensers in nursery area - Their effectiveness is questionable. Some or all of the pigs may not consume enough of the blocks to obtain the required amount of iron.

Special iron-rich "creep" feeds - This method is effective if the pigs consume the feed in adequate amounts. The pigs must have continuous access to clean water or they will not consume the creep feed. Labor requirement is low. A number of commercial products are available and the cost should be low.

Iron in drinking water - This method is effective if the baby pigs have continuous access to the clean treated water from birth. To be effective the iron must be in a form that will stay in solution.

Injectable iron treatments

Iron "complexed" with a polysaccharide (eg., iron-dextran, iron-dextrin) - This method of supplying iron is effective and non-toxic when used as directed. Each pig receives a known amount of the iron preparation. These are prepared so that the pig is receiving a given amount of iron daily from the injection over a long period of time. A number of good commercial preparations are available.

Peptonized iron and ferric ammonium citrate - This is relatively toxic when given by injection in doses large enough to furnish significant amounts of iron. These products are not recommended.

When and how to treat

When given orally, iron should be made available daily as long as the baby pigs are
receiving milk as the primary source of food. It is very important that the oral supply of iron be clean whether in the water or feed. Also, the iron source must be water soluble for intestinal absorption. Commercial oral iron feeds or typical creep feeds fortified with twenty per cent ferrous sulphate will prevent iron deficiency providing the pigs consume the iron supplement from a very early age. If injectible iron is used it should be injected in the ham muscle during the first few days of life. It can be administered when the pigs are handled for clipping milk teeth, ear notching, castration, and so forth. One cubic centimeter (cc) or 100 milligrams of iron is sufficient until three weeks of age. If the pigs are eating creep feed by three weeks, they need no further iron treatment. If not, they should receive a second one cc injection or receive an oral iron supplement.

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