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# ANEMIA IN BABY PIGS



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## ANEMIA IN BABY PIGS

Anemia is a condition of deficiency in quantity and/or quality of red blood cells. When applied to humans it is often described as "tired blood".

A deficiency of red blood cells may result from losses through hemorrhage, disease, improper functioning blood forming organs, or an inadequate supply of the blood forming raw materials to the blood forming organs

Red blood cells contain hemoglobin, the red coloring, that is essential for the transportation of oxygen from the lungs to all parts of the body. Hemoglobin also serves as a carrier for carbon dioxide from all parts of the body to the lungs where it is expelled. A constant supply of oxygen to the body cells and continued removal of carbon dioxide from the body are all necessary for the body to remain alive. When either of these processes is not carried out at a required rate, the body cells slowly suffocate and digestion, metabolism and growth rate are impaired. Anemic animals are constantly under stress and thus are more susceptible to infections and contagious diseases

The most frequent cause of anemia in swine is a deficiency of required elements for blood formation. These elements include copper, cobalt and iron. Iron is the element most frequently associated with anemia in present day swine husbandry.

Modern methods of swine husbandry — cement floors — have removed the pig from its natural source of iron and other elements found in the soil. These essential elements must be supplied to the baby pig's diet through artificial means.

Anemic pigs are usually 8 to 11 pounds lighter at weaning time than non-anemic pigs. Preventing anemia provides the baby pig with the possibility of, "making a hog of himself."

### The Signs of Anemia

Often, border-line cases of anemia go unnoticed unless the young pig is subjected to stress. One form

of stress that can cause spectacular results upon anemic piglets is the administration of hog cholera antiserum. Innoculated pigs often go into shock and death is frequent.

Anemic pigs grow more slowly and appear less vigorous than non-anemic pigs. Poor growth is the most frequent sign associated with anemic piglets.

Acute anemia is less frequently observed than the borderline problem. When it occurs, the signs may appear singly or all at once. Usually this problem occurs in pigs two to three weeks old. The anemic pig tires easily, lays down frequently, is depressed, and breathes rapidly – “thumps”. Anemic pigs appear fat due to the gathering of fluid under the skin and in body cavities – “edema”. This is particularly evident under the jaw area. Anemic pigs are more prone to tail biting and disease problems than healthy swine.

### **ANEMIA DETECTING**

In modern swine husbandry usually iron supplementation is utilized as a preventive measure. When anemia is detected, iron compounds may be utilized as a therapeutic approach to anemia.

The swineman should always be alert for swine anemia. The early signs described indicate the problem. When anemia is suspected, veterinary aid should be obtained immediately. Accurate diagnoses can be made by testing several drops of blood from the suspected piglet or by sacrificing a pig suspected of being anemic. Either test can be readily made on the premises. If necessary, more detailed examinations may be made under laboratory conditions.

### **SOURCES OF RED BLOOD CELL FORMING MATERIALS:**

The most frequently required element for red blood cell formation is iron, which may be provided to the unborn or newborn pig by several routes.

The unborn pig is dependent upon the sow for the materials for red blood cell formation. Sows receiving a well-balanced ration with adequate iron will produce piglets with sufficient red blood cells and ele-

ments for red blood cell formation for the first 7 to 10 days of life. Anemia during the first 5 days of life indicates an inadequate gestation ration, or infection. Piglets from sows on an iron adequate gestation ration will have a better “start in life” with less anemic problems.

Sources of iron to the 5 to 7 day old piglet include oral administration of solutions or capsules, swine parasite free soil or intramuscular injection of iron compounds.

Providing iron solutions orally or by smears on the sows mammary area have generally been replaced by other means that provide more uniform dosage and ease of administration.

Iron compounds for intramuscular administration are most frequently used by the swine industry. These compounds are usually iron-dextran preparations and are very effective in prevention of iron deficiency anemia. Those containing phenol preservatives are less toxic than those in which formalin is used as a preservative. Preparations other than iron-dextran combinations are available but are much less effective in preventing anemia due to shorter action, and frequently are more irritating upon administration.

The intramuscular preparation should be administered in a 50 to 100 milligram dose per piglet. Larger dosages are of no benefit and frequently may cause adverse reactions to the young piglet. Intramuscular iron preparations should never be administered before the piglets are five to seven days old. Administration at an earlier age, particularly in dosages greater than 50 milligrams, can poison the piglet, as it has not developed enough physiologically to metabolize large amounts of iron. If needed, readministration can be made when the pigs are 14 to 20 days old.

When anemia becomes a problem before the piglet is seven days of age, it is usually due to iron deficient gestation rations, hence inadequate fetal storage of iron, excessive hemorrhage from the navel, or infectious disease.

The administration of intramuscular iron compounds should be done under the most aseptic condi-

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tions possible. Use one sterile needle to remove the iron preparation from the vial and a separate sterile needle for administration. Disinfect the skin with a good disinfectant before administering iron compounds (See Extension Folder A-319 Disinfection). Partially used vials should be placed in the refrigerator or discarded to avoid bacteriological growth. Contaminated iron preparations will cause acute swelling and toxic reactions if administered to young swine. Administration areas that become infected frequently form abscesses that may rupture or may go on undetected until the ham is prepared for human consumption.

All intramuscular preparations should be administered deep into the ham muscles. Never administer iron compounds in the neck area. Splitting the dose into two sites is of no advantage.

Administration of intramuscular iron compounds to the sow before or after farrowing has never been of demonstrable benefit to the piglets. It definitely does not increase the amount of iron in the milk.

Swine parasite-free soil or sod placed in the farrowing pen during the first post-farrowing week and each week thereafter is the most effective method of anemia prevention. This method, unfortunately, has often been by-passed for the more spectacular intramuscular administration of iron compounds. The use of soil or sod will generally result in better growing pigs than that observed for injectable iron preparations. Some swine men have found it advantageous to use both the injectable preparations and swine parasite free soil simultaneously.

## REMEMBER

Sow's milk is deficient in iron and other elements necessary for red blood cell formation.

Our modern day swine husbandry has removed the pig from its natural sources of iron and other elements necessary for red blood cell formation. Anemic pigs are always under stress and more subject to disease.

Anemic pigs are often 8 to 11 pounds lighter at weaning time than non-anemic pigs.

Anemia can be readily and inexpensively prevented by supplemental iron administered intramuscularly or from swine parasite free soil to the nursing piglet.

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