

DISEASE AND MANAGEMENT PROGRAMS FOR IMPROVING NUTRITIONAL PERFORMANCE

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This paper is based on observations of problems resulting from confinement raising of pigs in the United States, England, Italy, Mexico and other countries. These problems can generally be broken into four categories: Baby pig scours, morbidity and mortality in weaned pigs, reduced conception rate especially in second litter gilts, and the feed/gain ratio in finishing pigs. All create economic loss to the producer. Of the four basic problems mentioned above, only baby pig scours can be classified as an acute bacterial or viral infection.¹ The other three problems are caused primarily by chronic bacterial infections from staphylococcus, streptococcus, coliforms and erysipelas.

The producer has created these problems by raising pigs in an unnatural habitat (confinement) without elevating nutritional standards to aid in improving resistance to the resulting stress factors and added bacterial propagation. To illustrate, most feed rations are computed from U.S. N.R.C. recommendations² even though it is recognized that they may be inadequate under some conditions.³

Morbidity and mortality of weaned pigs probably results in the greatest loss to the pig industry.⁴ Irregardless of when the pigs are weaned, once they lose the antibody protection of the sows milk⁵, a percentage of these pigs will not perform to genetic potential. Even though these pigs receive medicated feed and/or water, this problem still exists. What is frequently overlooked in these medicated feed programs is that they are only as good as the supporting nutrition the pigs receive.

Weaning creates stress for which antibiotics are indicated.⁶ In conditions of stress, the adrenalin flow will increase causing dehydration and a change in the intestinal pH which in turn affects digestion and absorption of nutrients.⁷ When pigs are weaned, water requirements will increase further complicating the dehydration process. Many feel that adding electrolytes, B-complex vitamins and medication to water will prevent these consequences, but unless water consumption is initially decreased there will be no change. Many pigs attempt to survive on the lower liquid, thus creating a further decline and increasing morbidity. The pigs bowels will become loose (not from bacterial infection), and most of the feed will not be metabolized. The pigs will become very gaunt with dull hair coats. They will pile up and nurse each other brought about by the stress.

Feed trials under the direction of Albion Laboratories have indicated that by limiting water intake for about two hours at weaning and feeding a ration of 10% fibre (oats, barley, beet pulp), high levels of vitamins A, D, E, K, and B-complex, plus amino acid chelated minerals (Metalosates-Albion Labs) was very beneficial in reducing the morbidity in weaned pigs. Research in Italy reported an average weight gain of 8.77% for the first 80 post-weaning days using this program.⁸ This program does not exclude the use of medication.⁶ Medication in the feed and vaccinations should be administered for the problems prevalent in the operation. Generally, a water sanitizing unit should also be employed. Contaminated water, from sulfates or nitrates, can create many problems in an otherwise well managed pig operation.

The producer who purchases feeder pigs should also withhold water for approximately three hours after arrival at the farm. Again, a high fibre ration and high levels of vitamins and amino acid chelates should be fed. Stress must be reduced in these pigs so that a vaccination program can be instituted that

will be effective. Immunity occurs only when stress is minimal and nutrition is adequate for the situation. If these pigs are immediately given free access to water, only the best will eat while the others only drink. By withholding water, they are forced to eat, which will stop adrenally caused dehydration and maintain a proper intestinal pH. This program results in less poor performers and reduces morbidity.

Conception rate improvement can definitely result from better nutrition.¹⁰ Dr. Darneley has reported a reduction in open days in sow herds by the simple addition of amino acid chelated minerals to the sow rations.⁹

A second reason for reduced conception rates in second litter gilts is due to poor gilt selection. Many gilts selected are carrying chronic bacterial infections. The stress of farrowing activates the bacteria, and uterine infections become a problem. Gilts should be selected at weaning and culled as they get older if necessary. Vaccination programs should be started when selection is made. Gilts should be grown from 160 pounds to breeding. They should be feminine, have good vulva development and good pointed teats. Nutrition and preventative medicine programs should be at its best.¹⁰

In conclusion, nutrition is the base from which disease control (preventative medicine and immunization), management and sanitation will produce profits. Nutrition includes vitamins, minerals, proteins, fat, fibre and water. Water is the least expensive nutrient because a pig will drink two pounds of water for every pound of feed. Biologically available minerals must be fed to the pig because they are involved in all the physiological processes, enzyme production, cellular production, sexual reproduction, hemoglobin and red blood cells, antibody production and many more. Amino acid chelates (Metalosates-Albion Labs) which are more biologically available to the pig^{11, 12, 13} than sulfates, carbonates and oxides should be employed.

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