FATS AND PROTEINS RESEARCH FOUNDATION, INC.

Director's Digest

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Farrowing Diets for Maximizing Baby Pig Survival

One of the largest potential areas for increasing the profitability of pork production is to increase the size of litters produced by brood sows. Because 20-30% of all pigs born die before weaning, the first and most direct way to effectively increase litter size is to eliminate as much as possible this high piglet mortality rate.

The piglet has on the average seven or more littermates and must compete effectively right after birth for nourishment and energy needed for survival. This is especially important because the carbohydrate reserves in the form of liver glycogen with which he is born are depleted after the first 24 hrs. If milk intake is low, the piglet becomes weak and hypoglycemic (low blood sugar) resulting in early exhaustion and a failure to compete for the available milk supply. As a result he may die within a day or two.

One way to help alleviate this situation is to increase the energy content of the sow's milk and thus the energy intake of nursing piglets. Since fat contains 2.25 times as much energy as carbohydrate or protein, one of the best ways to increase the energy of the sow's milk is to increase the milk fat content.

Dr. R. W. Seerley, Professor of Swine Nutrition at the University of Georgia, with grant support from FPRF, was one of the first to investigate the benefits to piglet survival by increasing the fat content of sows' milk by dietary means. He points out that sows are normally fed diets low in fat and that feed is frequently decreased

at farrowing by natural restraints or limiting feeding. While the sow begins milk production just prior to farrowing, she does not have the ability at that point to quickly convert her own body fat into milk. Consequently, the early milk is low in fat and energy content, a condition exactly contrary to the needs of the neonatal pig.

In an early study Dr. Seerley increased the survival rate of piglets from 80 to 88% by including a high level of corn oil in the diet 5 days prior to farrowing. These results were essentially corroborated by Dr. Moser at the University of Nebraska. In another experiment, an increase in piglet survival rate from 78.2% (control) up to 87.2% (corn oil) and 90.7% (animal fat) was obtained.

As a result of high lipid intake for several days prior to farrowing the fatty acids in the blood of the sow increase and are transferred directly into the milk. This increased source of energy is available at birth and at the crucial period 24 hrs. post partum when carbohydrate energy reserves (glycogen) are depleted. Consequently, more piglets survive during this critical period. There may also be additional benefits from the feeding of fat. Constipation and the incidence of mastitis should decrease. Too, lipid feeding has been reported to result in more sows rebreeding but longer experience with the feeding program is necessary to confirm this last possible benefit.

At the present time Dr. Seerley has in progress six feeding trials, one each at 5, 10 and 15% added animal fat to a basal diet and three comparable isocaloric diets using corn starch as the added energy source. Some basic questions which these trials hope to answer are: the most economical level of dietary fat which will maximize the level of fat in sows' milk and whether carbohydrate at identical caloric levels will produce the same effect in increased piglet survival.

He points out further that even a modest increase of 5% could improve the survival rate of an average herd from 75-80% up to 80-85% and increase a sow's productivity by one pig per year.