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Evaluation of a concentrated milk replacer and a vitamin-amino acid-iron-electrolyte supplement on baby pig survival and performance

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Summary

Litters offered a concentrated milk replacer and the vitamin amino acid, iron-electrolyte supplement, weighed the same as control litters at day 10, 14, 21, and 28. Blood analysis revealed no difference in packed cell volume, hemoglobin, or plasma protein between litters offered the supplement and control litters. Survival rate from birth to weaning favored the control litters (93.9 or 85.3%), however all nineteen litters used in this study were healthy with very little scours observed.

Introduction

Dehydration, scours, and death loss are common problems in most swine farrowing units. The goal of every producer is to help newborn pigs survive the first 14 days because that is when most pigs die. The objective of this study was to save pigs by providing them with nutrient-energy sources they could use to maintain better health and increase weaning weight.

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Procedure

Litters of crossbred pigs were randomly placed into either a control group (no milk replacer or electrolyte) of nine litters or a treatment group (10 litters) that received a concentrated milk replacer (Pig 45) and a vitamin-amino acid-iron-electrolyte supplement (Pig 95) free choice in an automatic, liquid-dispensing system. Pig 45 was offered each treated litter from day 1 to day 14; whereas, Pig 95 was offered from day 1 to day 21. Neither control nor treated litters were offered creep ration till day 21.

Sows were moved into the farrowing house a few days before farrowing and were kept in slatted farrowing crates until pigs were weaned at 28 days. Each farrowing crate is equipped with an automatic waterer and self feeder. The sows were fed a 15% sorghum-soybean meal fortified ration in pellet form. All newborn pigs (control and treated litters) were given 150 mg of iron within 24 hrs. of birth. In addition, the pigs were ear notched, tails docked, needle teeth cut, and iodine applied to the umbilical cord.

The pigs were individually weighed and blood samples taken on days 1, 7, 14, 21, and 28. Blood samples were analyzed for packed cell volume (PCV), hemoglobin (Hb), and plasma protein.

Results and Discussion

Consumption data of the concentrated milk replacer (Pig 45) was determined at 8:00 a.m. and 5 p.m. daily. The automatic dispensing system was flushed and fresh product made available twice each day. Pig intake of milk-replacer during the first week was .38 ounce per pig per day; the second week, .39 ounce per pig per day. The vitamin-amino acid iron-electrolyte supplement (Pig 95) had a longer shelf life and was completely changed every three days. During the first two weeks the average consumption of Pig 95 was 2.39 ounces per pig per day, but consumption increased the third week to 7.11 ounces per pig per day. This trial was conducted during July and August which caused some problems with the milk replacer souring overnight because of the heat.

The performance data of the sows and litters are presented in Table 23. The nine control sows farrowed an average of 9.11 pigs and weaned 8.55 pigs per sow for a survival rate of 93.9%. The ten treated sows farrowed 9.5 pigs per sow, but weaned only 8.1 pigs for a survival rate of 85.3%. Litter weight of control sows was heavier at 28 days. During this trial no significant differences were noted in the incidence of scours or general health of the pigs. All pigs appeared very healthy. Most of the pigs that died were laid on. Average pig weights were similar throughout the duration of trial (Table 24).

Table 25 presents the blood analysis data for packed cell volume, hemoglobin, and plasma protein. No differences were observed between control litters and litters with access to the concentrated milk replacer or the vitamin-amino acid-iron electrolyte supplement. No symptoms of baby pig anemia were observed.

Table 23. Performance data of treated and control litters.

	Pig 45-Pig 95	Control
No. litters	10	9
No. pigs farrowed	95	82
No. pigs weaned	81	77
% survival	85.3	93.9
Avg. birth wt/pig, lbs.	2.72	2.92
Avg. litter wt at birth, lbs.	25.8	26.6
Avg. 28 day pig wt., lbs.	15.0	15.2
Avg. 28 day litter wt., lbs.	121.2	130.4

Table 24. Average weight of pigs, lbs.

	Pig 45-95	Control
Day 7	5.60	5.89
Day 10	7.42	7.49
Day 14	8.96	9.19
Day 21	11.93	12.46
Day 28	14.97	15.24

Table 25. Hemoglobin, packed cell volume, and plasma protein of blood samples for treated and control litters.

	Pig 45-Pig 95	Control
<u>Hemoglobin (gm%)</u>		
Day 1	9.0 $\pm$ 1.9	9.3 $\pm$ 1.8
Day 7	9.8 $\pm$ 1.2	9.4 $\pm$ 0.8
Day 14	10.5 $\pm$ 1.1	11.0 $\pm$ 1.0
Day 21	11.0 $\pm$ 1.3	10.1 $\pm$ 1.0
Day 28	10.4 $\pm$ 1.0	10.4 $\pm$ 1.3
<u>Packed cell volume (PCV)%</u>		
Day 1	30.4 $\pm$ 6.0	29.9 $\pm$ 5.2
Day 7	34.1 $\pm$ 3.6	32.5 $\pm$ 2.9
Day 14	36.1 $\pm$ 4.5	37.6 $\pm$ 2.4
Day 21	36.4 $\pm$ 4.0	34.6 $\pm$ 3.5
Day 28	35.3 $\pm$ 3.1	35.5 $\pm$ 4.2
<u>Plasma protein (gm%)</u>		
Day 1	5.9 $\pm$ 0.7	5.9 $\pm$ 0.7
Day 7	5.6 $\pm$ 0.6	5.6 $\pm$ 0.6
Day 14	5.4 $\pm$ 0.6	5.8 $\pm$ 0.4
Day 21	5.2 $\pm$ 0.5	5.4 $\pm$ 0.4
Day 28	5.1 $\pm$ 0.5	5.4 $\pm$ 0.4