Effect of increasing GleptoForte dosage in newborn pigs on sow and litter performance

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Introduction

- Iron deficiency is due to inadequate iron stores at birth and and rapid growth rate before weaning and can cause a decrease in number of circulating red blood cells, lethargy and mortality.
- Iron supplementation must be administered within 3 days of birth in newborn piglets.
- Gleptoforte is an injectable iron used to prevent anemia in piglets. Inadequate data is available to confirm the proper dosage needed.

Photo: NCGA

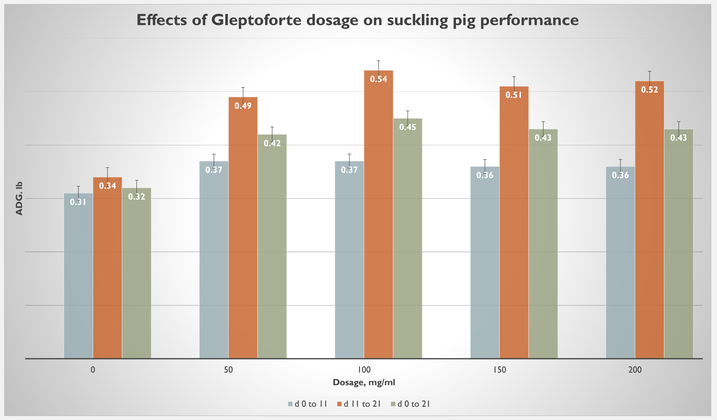
Objectives

- To quantify effects of Gleptoforte on blood parameters Hemoglobin, Hematocrit, Serum Fe, and Total Iron Binding Capacity.
- To determine if 200 mg injection + 100 mg booster injection increases suckling performance.

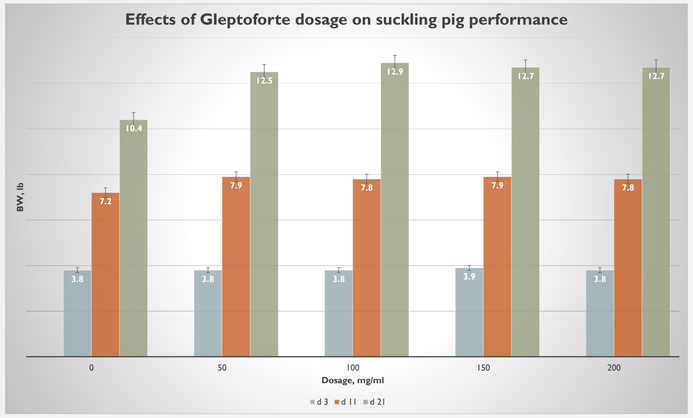
Experimental Procedures

- 336 newborn piglets were used in a 21-d farrowing study to determine the effects of GleptoForte based on suckling pig performance and blood parameters.
- On day 3, all piglets were weighed and 6 gilts and 6 barrows per litter were assigned to a treatment by completely randomized design.
- Treatment consisted of 0, 50, 100, 150, 200, or 200 mg plus a 100 mg booster on d 11 of farrowing.
- Weigh day took place on d 3, 11, and 21 to compute ADG.
- On d 3, 11 and 21, 1 boar per treatment per litter was used for blood collection via jugular venipuncture.
  - Hematocrit
  - Hemoglobin
  - Serum Fe
  - Total Iron Binding Capacity
- The feed consumed by sows during lactation contained 110 mg/kg added iron from ferrous sulfate.

ADG



BW



Hematological Criteria

Table 2. Effects of Gleptoforte dosage on suckling pig hematological criteria [1]

	Dosage, mg/ml							Probability, $P <$		
	0	50	100	150	200	200 + 100	SEM	Linear	Quadratic	200 vs. 200 + 100
Hgb (g/dl)										
d 3	8.4	8.3	8.3	8.3	8.2	8.4	0.25	0.719	0.85	0.613
d 11	5.7	8.3	9.9	10.1	10.7	10.5	0.235	0.001	0.001	0.703
d 21	4.6	6.8	9.3	11.3	12	12.8	0.217	0.001	0.001	0.011
Hct (%)										
d 3	28	27.1	27.6	27.4	27.4	28	0.806	0.809	0.749	0.699
d 11	20	29.2	34.3	35.8	36.5	36.2	0.66	0.001	0.001	0.722
d 21	16	23.4	30.9	37.3	38.8	40.9	0.715	0.001	0.001	0.046
Serum Fe (µg/dl)										
d 3	26	24	30	29	25	24	3.82	0.816	0.463	0.838
d 11	19	29	101	149	162	157	8.73	0.001	0.558	0.675
d 21	22	15	25	53	86	113	7.85	0.001	0.001	0.019
TIBC (µg/dl)										
d 3	252	248	216	236	242	223	13.78	0.454	0.166	0.351
d 11	698	536	442	417	406	421	22.77	0.001	0.001	0.669
d 21	726	667	519	479	415	398	27.43	0.001	0.3446	0.67

Results and Conclusions

- A lack of iron injection resulted in the poorest growth and blood parameters of iron status of suckling piglets as expected.
- Administration of 100 mg of Gleptoforte resulted in the greatest growth performance.
- The administration of 200 mg + 100 mg of GleptoForte resulted in improved hematological criteria but did not influence suckling piglet growth performance compared to 200 mg alone.
- ADG and d 21 ending BW improved (quadratic; P=.001) with increasing dosage of Gleptoforte.