

Effect of increasing Gleptoforte dosage on newborn piglet blood and growth parameters.

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Introduction

- Due to rapid growth rate and inadequate iron storage at birth newborn piglets are more susceptible to iron deficiency.
- Iron injections are usually given within 3 days of birth to help prevent lethargy, depressed growth performance, decreased number of circulation red blood cells, and mortality.
- Little data is available that confirms the appropriate level of iron injection needed with modern genotypes.

Objective

Determine the effects of Gleptoforte dosage on nursing piglets and subsequent nursery blood and growth parameters.

Experimental Procedures

- A total of 336 suckling pigs (DNA 241 x 600, initially 3.83 ± 0.114 lb BW) were used in a 21-d farrowing study.
- Six barrows and six gilts per litter were allotted to treatment in a completely random design for a total of 56 piglets per treatment.
- Treatments consisted of a negative control and increasing levels of iron from Gleptoforte 50, 100, 150, 200, or 200 mg plus a 100 mg booster at d11
- Piglets were weighed at processing, d 11, and weaning to calculate ADG during farrowing.
- Barrows were utilized for blood collection via jugular venipuncture on d 3, d 11, and weaning (d 21).
- Measured blood criteria included: Hemoglobin (Hgb), Hematocrit (Hct), Serum Fe, and Total Iron Binding Capacity (TIBC).

Conclusions / Implications

- In conclusion absence of iron injections resulted in the poorest blood and growth performance.
- However 100mg of Gleptoforte became the ideal dosage due to greatest growth performance.
- When comparing 200mg to 200mg+100mg growth performance was not affected, although hematological criteria was improved.

Experimental Results

Figure 1. Effects of Gleptoforte dosage on suckling pig body weight

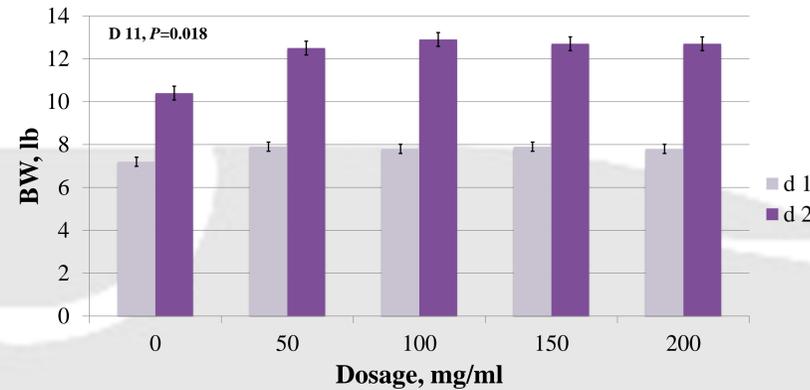


Figure 2. Effects of Gleptoforte dosage on suckling pig average daily gain

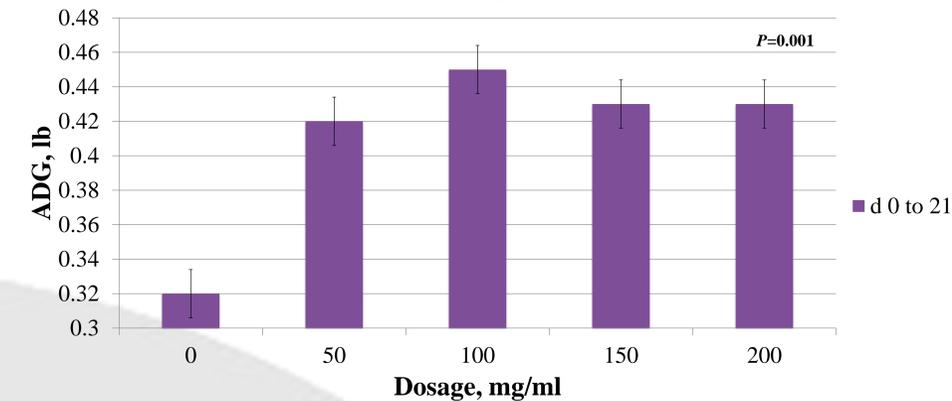


Figure 3. Effects of Gleptoforte dosage on suckling pig hematological criteria

	Dosage, mg/ml ²						Probability, <i>P</i> <		
	0	50	100	150	200	200 + 100 ³	Linear ⁴	Quadratic ⁵	200 vs. 200 + 100 ⁶
Hgb (g/dl) ¹									
d 3 ⁸	8.4	8.3	8.3	8.3	8.2	8.4	0.719	0.850	0.613
d 11 ⁹	5.7	8.3	9.9	10.1	10.7	10.5	0.001	0.001	0.703
d 21	4.6	6.8	9.3	11.3	12.0	12.8	0.001	0.001	0.011
Hct (%) ¹									
d 3	28.0	27.1	27.6	27.4	27.4	28.0	0.809	0.749	0.699
d 11	20.0	29.2	34.3	35.8	36.5	36.2	0.001	0.001	0.722
d 21	16.0	23.4	30.9	37.3	38.8	40.9	0.001	0.001	0.046
Serum Fe (µg/dl) ¹									
d 3	26	24	30	29	25	24	0.816	0.463	0.838
d 11	19	29	101	149	162	157	0.001	0.558	0.675
d 21	22	15	25	53	86	113	0.001	0.001	0.019
TIBC (µg/dl) ⁷									
d 3	252	248	216	236	242	223	0.454	0.166	0.351
d 11	698	536	442	417	406	421	0.001	0.001	0.669
d 21	726	667	519	479	415	398	0.001	0.3446	0.670

²Gleptoforte (Ceva Animal Health, LLC., Lenexa, KS) dosage administered 3 d after farrowing.

³Pigs were administered 200 mg at beginning of trial and 100 mg 11 d after farrowing.

⁴Linear comparison of 0 mg to 200 mg dosage.

⁵Quadratic comparison of 0 mg to 200 mg dosage.

⁶Pairwise comparison between mean of 200 mg and 200 + 100 mg treatments.

⁷Trt × day interaction (*P* < 0.001).