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

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Introduction

- Newborn piglets are more susceptible to iron deficiency due to inadequate tissue iron storage at birth.
- An iron deficiency can lead to degreased growth performance and more sickness susceptibility.
- Typically, iron is supplemented by injectable iron dextran is used to prevent anemia and enhance growth.
- Recently a new injectable iron supplement was introduced into the market. Gelptoforte (Ceva Animal Health, LLC., Lenexa, KS) is an injectable iron that contains gleptoferron.

Objective

- To evaluate the effects of increasing dosage of Gleptoforte in newborn suckling pig performance.

Experimental Procedures

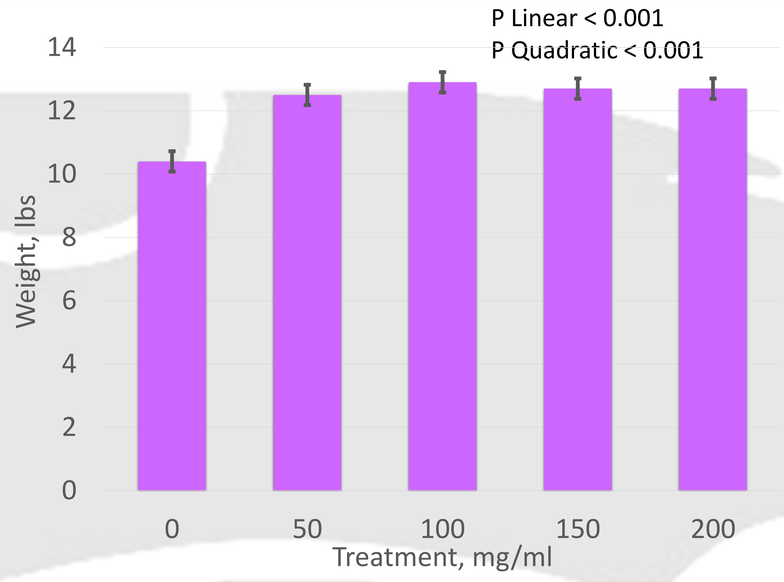
- 28 litters of pigs equating to,336 suckling pigs (DNA 241×600, initially 3.83 ± 0.114 lb BW)), were equalized on each day of farrowing and were used on a 21-d trial.
- On day 3, 6 gilts and 6 barrows from each litter were allotted to one of 6 treatments in a completely randomized design with a total of 56 piglets per treatment.
- Treatments consisted of a negative control with no injection and increasing levels of iron from gleptaforte to achieve either 50, 100, 150, 200, or 200 mg plus a 100 mg booster at d 11 of farrowing.
- Piglets were weighed at d 3 (day of processing), d 11, and weaning (d 21) to calculate ADG.
- One barrow per treatment per litter was utilized for blood collection via jugular venipuncture on d 3 (day of processing), d 11, and weaning (d 21).
- Blood criteria measured included: Hemoglobin (Hgb), Hematocrit (Hct), Serum Fe, and Total Iron Binding Capacity (TIBC).

Conclusions

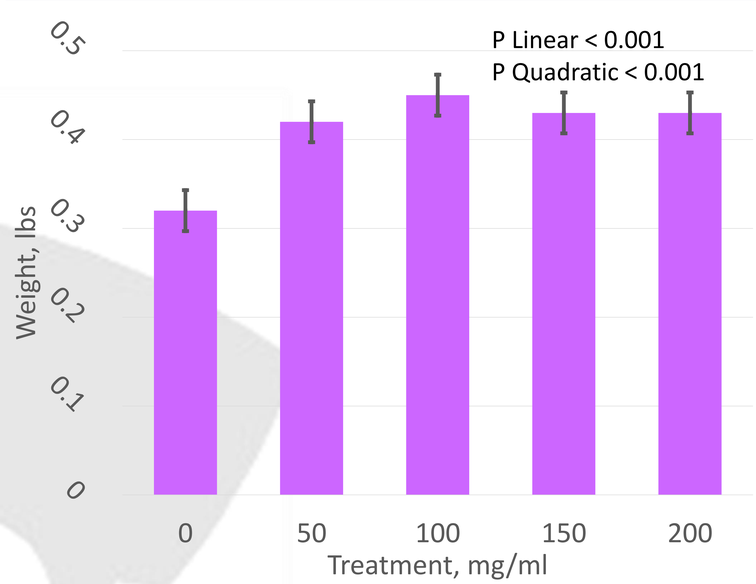
- No iron injection resulted in the poorest growth and blood parameters .
- Administering 100mg Gleptoforte resulted in the greatest growth performance as compared to other treatments.
- Administrating 200mg + 100mg Gleptoforte resulted in improved hematological criteria but, did not influence suckling piglet growth performance compared to 200mg.

Experimental Period Results

D 21 Body Weight



D 0-21 Average Daily Gain



Blood Parameter Results

	Dosage, mg/ml[1]							Probability, P <		
	0	50	100	150	200	200 + 100[2]	SEM	Linear[3]	Quadratic[4]	200 vs. 200 +100[5]
Hgb (g/dl)[6]										
d 3[7]	8.4	8.3	8.3	8.3	8.2	8.4	0.250	0.719	0.850	0.613
d 11[8]	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	12.0	12.8	0.217	0.001	0.001	0.011
Hct (%)[6]										
d 3	28.0	27.1	27.6	27.4	27.4	28.0	0.806	0.809	0.749	0.699
d 11	20.0	29.2	34.3	35.8	36.5	36.2	0.660	0.001	0.001	0.722
d 21	16.0	23.4	30.9	37.3	38.8	40.9	0.715	0.001	0.001	0.046
Serum Fe (µg/dl)[6]										
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)[6]										
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	0.670

[1]Gleptoforte (Ceva Animal Health, LLC., Lenexa, KS) dosage administered 3 d after farrowing.
[2]Pigs were administered 200 mg at beginning of trial and 100 mg 11 d after farrowing.
[3]Linear comparison of 0 mg to 200 mg dosage.
[4]Quadratic comparison of 0 mg to 200 mg dosage.
[5]Pairwise comparison between mean of 200 mg and 200 + 100 mg treatments.
[6]Trt × day interaction ($P < 0.001$).
[7]Represents 3 d after farrowing.
[8]Represents 11 d after farrowing.