

Effects of Porcine Reproductive Respiratory Syndrome (PRRS) status (stable vs active) on the performance of weaned pigs when fed either a complex diet, a simple diet or a simple diet with lactose

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ABSTRACT: The objective of this study was to determine the relationship between diet complexity, and the effect of two different PRRS status, on performance in a commercial swine research facility. The experiment involved 1,503 weaned piglets of 19 days of age, weighing on average 5.7 kg, with 21 to 35 pigs/pen. Pigs were blocked by BW and sow farm, then allocated randomly to dietary treatments. Pigs were of the same maternal and terminal genetic lines, that either came from PRRS active (Active, n=16) or PRRS stable (Stable; n=39) sow farm. Three types of diets were provided using a FANCOM feed weighing system: a complex commercial diet with plasma, fish meal, dried whey and lactose (Complex, n=17), a simple vegetarian diet with added lactose (SimLac, n=18), or a simple vegetarian diet with no added lactose (Simple, n=20). There was a 1-week acclimation period (d 0). Pens were weighed and feed disappearance was recorded on d 7, 14, and 21. Data were analyzed as a randomized complete block design in a 2x3 factorial design using the GLM procedure in Minitab. There were no PRRS x diet interactions for any recorded measure and results are reported as main effects for d 7-21 in Table 1. Active PRRS reduced ADG ($P<0.001$), which was due to reduction in ADFI and FCR, respectively, compared to Stable PRRS. The Complex treatment had a greater ADG ($P=0.002$) than both the SimLac and Simple treatments with no effects on ADFI or F:G. The Stable PRRS had a lower mortality and morbidity ($P<0.001$) than Active PRRS. In conclusion, active PRRS has significant effects on performance and livability, and this trial has quantified those effects in a commercial wean to finish barn.

Table 1. Summary of growth performance by treatment with main effect P-values

	Active	Stable	Complex	SimLac	Simple	PRRS	Diet	PRRS x Diet
BW, kg								
d 7	5.1 ^a	6.4 ^b	5.8	5.5	5.8	<0.001	0.131	0.806
d 21	7.8 ^a	9.8 ^b	9.3 ^y	8.5 ^z	8.5 ^z	<0.001	0.008	0.707
d 7-21								
ADG, g	200 ^a	240 ^b	251 ^y	210 ^z	199 ^z	<0.001	0.002	0.444
ADFI, g	274	312	326	263	289	0.232	0.277	0.904
F:G	1.41	1.34	1.36	1.25	1.51	0.659	0.389	0.760
Mortality & Morbidity Per Pen, %	21.18 ^a	1.10 ^b	12.33	10.03	11.07	<0.001	0.698	0.889

Key Words: Pigs, PRRS, Diet