

# Proper Feeder Adjustment Increases Feeder Capacity

Laura Smith<sup>1</sup>, A. Denise Beaulieu<sup>1</sup>, John F. Patience<sup>1</sup>, Harold Gonyou<sup>1</sup>, and R. Dean Boyd<sup>2</sup>



## SUMMARY

An experiment was conducted to examine the impact of group size / density and feeder adjustment on the performance of weanling pigs. Providing more floor space resulted in increased body weight at 10 weeks of age. Performance was maximized when the feeder gap allowed for 40% of the trough to be covered with feed. Moreover, proper adjustment of the feeder reduced the time spent eating and thus increased feeder capacity.

*"The optimal feeder gap would change with different feed particle size, however it is achieved when at least 40 % of the trough is covered with feed"*

## INTRODUCTION

Crowding and /or reduced floor space allowance negatively affects nursery performance and exacerbates social vices such as tail-biting, side-nudging and ear chewing. Feeder adjustment impacts feed intake and can alter feeder capacity. Since some of the detrimental effects of crowding are due to decreased feed intake, adequate floor space and proper feeder adjustment may act in a synergistic fashion to improve pig performance.

## EXPERIMENTAL PROCEDURES

Seven hundred and sixteen pigs weaned at an average of 18.2 days of age were assigned to: 1) 24 pigs per pen, 2.5 ft<sup>2</sup> per pig; 2) 20 pigs per pen, 3.0 ft<sup>2</sup> per pig [approximates commercial conditions]; and 3) 16 pigs per pen, 3.75 ft<sup>2</sup> per pig [approximates the Canadian Code of Practice] for a 42 day trial. Eight days later (dO of exp.) feeders were adjusted to provide gap openings of 9.2,

11.8, 17.9, 24.8 and 31.5 mm (see Figures 1 to 3). Only a small bead of feed was available with an opening of 9.2 mm while the entire trough was covered with an opening of 31.5 mm. Feeding behaviour was videotaped on days 3 to 6 and on days 39 to 42. On day 42, each pig was scored for incidence and severity of tail biting, side nudging and ear chewing.

## RESULTS AND DISCUSSION

The effect of treatment on body weight and feed intake were not apparent until the second half of the experiment. Body weight, daily gain and feed intake were maximized with a minimum feeder gap size of 18 mm (P < 0.05) or when at least 40% of the feeder trough was covered with feed (P < 0.05; Table 1). Younger pigs spent more time eat-

**Table 1.** The impact of feeder gap and group size/density on pig performance, feeder characteristics, time spent eating and lesion scores.

	Feeder Gap, mm				
	9.2	11.8	17.9	24.8	31.5
Weight, kg					
Initial	6.96	7.10	7.12	7.18	7.03
Final	27.91	28.97	29.55	29.50	29.56
Daily Gain, kg/d	0.48	0.52	0.53	0.52	0.53
Feed Intake, kg/d	0.72	0.75	0.78	0.77	0.78
Gain:Feed	0.66	0.69	0.68	0.67	0.68
Feeder					
Area Clear, %	94.1	88.0	62.6	31.8	8.8
Feed Depth, cm	0.06	0.04	0.30	0.69	1.27
Total duration of eating, min/pig d <sup>-1</sup>					
Days 3-6	142	118	125	116	116
Days 39-42	97	90	85	79	75
Skin lesion score <sup>2</sup>	0.06	0.04	0.04	0.05	0.05

<sup>1</sup>Prairie Swine Centre Inc., Saskatoon, SK, <sup>2</sup>Pig Improvement Company, Franklin, Kentucky



**Figure 1.** Feeder trough coverage with a gap adjustment providing a gap opening of 9.2 mm.



**Figure 2.** Feeder trough coverage with a gap adjustment providing a gap opening of 17.9 mm.



**Figure 3.** Feeder trough coverage with a gap adjustment providing a gap opening of 31.5 mm.

ing with a reduced feeder gap; however feed intake and daily gain were lower ( $P < 0.05$ ; Table 1).

Assuming feeder capacity is achieved when it is being used 90% of the time, the maximum capacity of a nursery feeder space would be nine pigs when adjusted to a 9.2mm feeder gap, but 11 pigs

when adjusted to a 25mm feeder gap. The optimal feeder gap would change with different feed particle size and form; however it is achieved when at least 40 % of the trough is covered with feed. Feeders with smaller gaps also required frequent unclogging.

Decreasing group size and providing more floor space per pig resulted in increased final weight, daily gain, and feed intake (Table 1).

### **IMPLICATIONS**

Optimal feeder gap is obtained when at least 40% of the feeder is covered with feed. Proper feeder gap adjustment reduced the time spent eating and thus increased feeder capacity. Assuming that feeder capacity is achieved when it is being used 90% of the time, the maximum capacity of a nursery feeder space would be nine pigs when adjusted to a 9 mm gap, but 11 pigs when adjusted to a 25 or 32 mm gap.

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**Prairie Swine Centre**  
Box 21057  
2105 8th Street East  
Saskatoon, Saskatchewan  
S7H 5N9

Phone (306) 373-9922  
Fax (306) 955-2510  
Website: [www.prairieswine.ca](http://www.prairieswine.ca)