

Final Report -Summary

THE EFFECT OF PARTICLE SIZE ON FEED EFFICIENCY OF MARITIME MARKET HOG RATIONS

Daniel Hurnik, ASRP inc

Background

There has long been an association between particle size of the feed and efficiency of pig growth. Most of the research has been on corn or wheat diets. Relatively little work in this field had been performed with grains more commonly used in Atlantic Canada. Previous pigs fed using feeds of different particle size has indicated that particle size and size of screen used may impact on feed efficiency. Earlier findings were based on equal diets at different times, so factors besides particle size cannot be ruled out. If the findings are based on feed grind the magnitude of change is very significant for Maritime Producers. For this reason we performed a specific trial to look at particle size.



Materials and Methods

450 pigs balanced by gender and in both the slatted and bedded portion of the barn were fed each of the following diets. The fill of pigs ran from July 2003 to October 2003

Grind (Particle size)	Screen size	Ration
Fine	8/64ths 1/8ths	Barley, Rye, whole soybeans, premix
Medium	12/64ths 3/16ths	Barley, Rye, Whole soybeans, Premix
Coarse	24/64ths 3/8ths	Barley, Rye, Whole Soybeans, Premix

Results

	Fine	Medium	Coarse	Gilts	Barrows	Slatted Floor	Bedding
Days to Market (from 25kg)	101.7	102.5	<u>103.8</u>	<u>103.8</u>	<u>99.2</u>	101.5	<u>101.8</u>
ADG kg/d	.860	.861	<u>.857</u>	<u>.836</u>	<u>.892</u>	.860	<u>.864</u>
Feed Conversion	2.98	2.97	2.98	<u>2.96</u>	<u>3.05</u>	<u>2.94</u>	<u>3.08</u>
Index %	109.3	109.5	109.7	<u>110.3</u>	<u>108.6</u>	<u>110.1</u>	<u>107.9</u>
Lean yield mm	59.87	60.13	59.92	<u>59.4</u>	<u>60.4</u>	<u>60.1</u>	<u>59.5</u>
Backfat mm	20.2	19.6	20.0	<u>18.88</u>	<u>21.1</u>	<u>19.5</u>	<u>21.1</u>
Loin eye mm	<u>58.8</u>	<u>59.9</u>	<u>58.5</u>	<u>58.52</u>	<u>59.67</u>	<u>58.8</u>	<u>59.6</u>

Underlined numbers are statistically different from other in the row.

Conclusions

This study found that particle size as defined by size of the screen used to grind the feed had only a small effect of the performance of the pigs. Pigs fed a coarse ration grew slightly slower than pigs fed a diet made with 3/16th and 1/8th screens. There was no effect of particle size on feed conversion or carcass quality. The feed made with a 1/8th screen, was more likely to bridge in both the feed bins and the feeders.

The major effects in this study were as a result of the gender of the pig and the use of bedding for the pigs. Gilts grew slower and were significantly leaner than barrows. This is a consistent finding in all studies. In this fill of pigs, the use of bedding resulted in significantly fatter pigs at market, and a significantly lower index. This is also consistent with earlier fills of pigs raised on a bedded system.