MICRONIZED AND FLAKED WHEAT IN NURSERY DIETS

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Summary

Micronization and flaking are likely to improve grain nutrient utilization by young pigs. One hundred sixty pigs weaned at 13.4 ± 1.0 days of age were used to determine the effect of the inclusion of either micronized, flaked and ground or just ground white wheat (AC Karma) in nursery diets. Micronization and flaking increased the wheat's nutrient availability and(or) digestibility resulting in heavier weights, faster weight gain and improved feed conversion efficiency for the nursery period following early weaning at 13 days of age.

Introduction

Micronization is likely to gelatinize the starch thus increasing grain digestibility in young pigs. Flaking increases the kernel surface area increasing the opportunity for gut secretions and enzymes to improve the digestibility. Early weaned pigs are the ones most likely to benefit from receiving diets containing micronized grains because endogenous enzymatic secretion is not fully established.

Experimental Procedure

One hundred sixty pigs weaned at 13.4 ± 1.0 days of age were used to determine the effect of the inclusion of either micronized, flaked and ground or just ground white wheat (AC Karma) in nursery diets on body weights, average daily weight gain, feed disappearance and feed conversion efficiency during a 35-day study.

Results

The inclusion of micronized, flaked and ground wheat in the nursery diet did not affect feed disappearance, but increased body weights seven days post-weaning, increased weight gains for the 0 – 7 day and 21 – 35 day periods and improved feed conversion efficiency for the 21 – 35 day and 0 – 35 day (overall) periods.

Conclusions

The results of this study indicate the micronization and flaking of AC Karma white wheat increased nutrient availability and(or) digestibility resulting in heavier weights, faster weight gain and improved feed conversion efficiency of pigs for the 35 day nursery period following early-weaning at 13 days of age.

It was $0.07 cheaper per pig to feed the micronized, flaked and ground wheat diet compared to the just ground wheat diet.

The reduced pig performance observed in this study compared to industry benchmarks was related to the fact that the diets were formulated to result in linear but not peak growth performance in order to better appreciate differences due to wheat processing.

Further studies would involve different varieties of feed wheat. AC Karma has a low protein content, and therefore a better response may be obtained with other feed wheats.

Micronized and flaked wheat offers better nutrition for less cost.

Acknowledgements

Funding for this study was provided by the Saskatchewan Agriculture Development Fund and InfraReady Products Limited.

Effects of micronization and flaking of AC Karma wheat on pen average body weights, daily feed disappearance, daily weight gain, and feed:gain of 13 day-old weaned pigs.

	Ground Wheat	Micronized, Flaked and Ground Wheat	SEM	*P* value
n, pens	16	16		
Body weights, kg				
Day 0	4.60	4.61	0.03	0.77
Day 7	4.71	4.94	0.07	0.01
Day 21	7.81	7.95	0.17	0.43
Day 35	14.43	14.85	0.25	0.07
Daily feed disappearance, kg				
0 - 7 days	0.12	0.13	0.01	0.46
7 - 21 days	0.36	0.34	0.01	0.30
21 - 35 days	0.76	0.76	0.02	0.53
0 – 35 days	0.47	0.47	0.01	0.46
Daily weight gain, kg				
0 - 7 days	0.01	0.05	0.01	0.01
7- 21 days	0.22	0.22	0.01	0.40
21 - 35 days	0.47	0.49	0.01	0.02
0 – 35 days	0.28	0.29	0.01	0.09
Feed:Gain				
0 -7 days	1.69	2.46	1.81	0.02
7 - 21 days	1.62	1.60	0.05	0.51
21 - 35 days	1.61	1.54	0.02	0.02
0 – 35 days	1.69	1.59	0.03	0.01