

## ANIMAL SCIENCE

**Title:** Novel feed processing methods of cold pelleting and fine ground corn segregation to maximize feed efficiency, nutrient utilization and economic return – **NPB #15-052**

**Investigator:** Dr. Charles Stark

**Co-investigators:** Dr. Cassie Jones, Dr. Mike Tokach, Dr. Jason Woodworth, and Dr. Joel DeRouchey, Dr. Bob Goodband, Dr. Steve Dritz, Dr. Anne Huss

**Institution:** Kansas State University

**Date Submitted:** 3/14/17

**Scientific abstract:** A total of 320 pigs (DNA 241 × 600; initially 22.5 lb BW) were utilized in a 21-d experiment to determine the effects of corn fractionation and pelleting technique on nursery pig growth performance during the third feeding phase. There were 5 pigs per pen and 8 pens per treatment. Diets were manufactured with either ground corn (400 microns), ground corn with fines (<150 microns) removed, or ground corn with the fines (<150 microns) pelleted. Diets were then fed as a mash or pelleted using a traditional vertical die pellet mill equipped with a steam conditioner or a horizontal pellet die with hot water conditioning prior to pelleting. There were eight total treatments in a random block design. Overall, cold pelleting improved ADG, regardless of corn particle size, when compared to steam pelleting ( $P < 0.05$ ). BW remained comparable to the meal diets, but was decreased when pellets were steam conditioned. There was no significant difference in G:F among treatments, with the exception of the diets containing pelleted fines, which had significantly lower G:F due to observed increased feed wastage. Finally, corn particle size appeared to have little effect on pig growth performance; however, there were processing implications. Removal of fines less than 150 microns from the corn improved the flowability characteristics of the diets as indicated by improved composite flow index (CFI) values. The best flow was achieved when fines were pelleted and added back to the mash diets. More research is warranted on how best to process and utilize the removed fines to maximize pig growth.

---

These research results were submitted in fulfillment of checkoff-funded research projects. This report is published directly as submitted by the project's principal investigator. This report has not been peer-reviewed.

---

For more information contact:

National Pork Board • PO Box 9114 • Des Moines, IA 50306 USA • 800-456-7675 • Fax: 515-223-2646 • [pork.org](http://pork.org)

---

