

Organic Hog Production Using Several Organic Feed Rations as Compared with Conventional Hog Production

Final Report for FNC01-362

Project Type: Farmer/Rancher

Funds awarded in 2001: \$11,034.00

Projected End Date: 12/31/2006

Region: North Central

State: Minnesota

Project Coordinator:

[Warren Roberts](#)

Project Information

Summary:

BACKGROUND

This is the second trial conducted by Warren Roberts of Deer Creek, Minnesota to investigate the feasibility of organic pork production.

There is essentially no actual data on production and economic benchmarks for organic pork production. Warren is an organic crop producer and has swine and beef cow herds that have been managed under "natural systems" without antibiotics but his swine have not previously been fed certified organic feed with the exception of a similar feeding trial conducted in 2002. He is seeking to determine the feasibility of converting to certified organic pork production. Issues regarding performance levels and costs are being measured in an on-farm trial format.

In 2002 Warren placed 26 pigs raised in a natural system on an on-farm comparison of certified organic feed to conventional feed. The comparison was for the finishing phase only (from about 43 pounds to 225 pounds). His findings were that performance was essentially the same between the two groups with the significant difference being the cost of feed. Complete information on the trial as well as additional history and background that may be relevant to this 2003 report can be found at <http://swroc.coafes.umn.edu?bob/docs/finalreport.PDF>

TRIAL 2 (2003)

Warren placed 17 home raised feeder pigs on the feeding trial on July 29, 2003. Pigs were allocated to the two treatments by weight to equalize average weight and variation within the treatments. The pigs placed on the organic diet averaged 63.78 pounds (ranging from 41 to 83 pounds) and pigs placed on the conventional diet averaged 65.75 pounds (ranging from 49 to 84 pounds). All pigs in one farrowing group (2 litters) were used so as to facilitate efficient usage of facilities on the farm. Consequently the variation of pigs within groups was larger than desired. The pigs were white and blue butt crossbreds of predominantly Yorkshire and Hampshire breeding.

Pigs were housed in an open front shed with concrete runways. A service ally in

front of the pens facilitated the necessary weighing. Neither group had access to pasture but both had straw bedding in the house and access to fresh air and sunshine on the concrete runways. A round feeder with a capacity of approximately 3000 pounds was placed in each pen. Pigs had access to an automatic water fountain at all times

The pigs had been raised in a “natural” system until going on the trial. They were fed conventional feeds but did not receive antibiotics and had not been treated for external or internal parasites before going on trial. The conventionally fed pigs received an Ivomec injection for external and internal parasites on July 29. Organically fed pigs received diatomaceous earth in their diet for worm control and were not treated for mange.

Pig Performance

This was a side-by-side comparison of organically fed and managed pigs and conventionally fed and managed pigs. Facilities did not allow for replication of the treatments. Thus, it is possible to report the results, but not to arrive at conclusions in a statistically based research sense.

This test only looked at the finishing phase of production. Pigs from both treatments were fed and managed as one group prior to the test initiation. That management system could be termed “natural” in that the pigs and their dams were fed without antibiotics, they were fed home grown grains from a farm that raises certified organic crops but some conventional ingredients were included in those diets, and dams were treated for mange with Ivomec prior to farrowing. The management system prior to going on test was probably quite ideal in terms of not compromising the results of the trial for either treatment.

The pigs were weighed off test on October 24, 2003 at an average weight of just over 255 pounds. Pigs in the organic treatment ranged from 210 to 283 pounds. Conventional pigs ranged from 238 to 280 pounds. Performance for the two groups was essentially equal as was their appearance and thriftiness. Given the very similar performance, the un-replicated nature of the trial, that moderate feed wastage occurred as expected from the type of feeder used, and that feed weigh-back at the end of the trial on the conventional treatment was estimated, the observation is that performance for these two groups appeared to be unaffected by feed source.

Rate of gain was much higher in this year’s trial (2.2 ADG compared to about 1.6) than last year. Also feed efficiency (about 290 pounds feed per 100 pounds gain compared to 350) was superior this year. One can only speculate as to the reasons. A contributing factor may be the higher lysine levels fed this year in the latter part of the feeding period. Possibly timing of the trial was also a factor as pigs were at heavier weights during cooler weather (September/October). In each year, performance was essentially the same for the two treatments.

Diets and Feed Consumption

The conventional diet was composed of corn, soybean meal, and a commercial vitamin-mineral base mix containing crystalline lysine. Conventional diets also included Copper Sulfate and BMD-30.

The organic diets were composed of organic corn, buckwheat, soybean meal, and a vitamin-mineral product designed for organic production.

Before the trial diets were formulated for starter (40-90 pounds), grower (90-160), and finisher phases (160+) for both the organic and conventional phases. Due to apparent miscommunication the first 500 pounds of starter for the conventional pigs was a “transitional” starter diet carried by the feed mill, which was more complex in terms of feed ingredients. Also, neither group was switched to a finisher diet but

maintained on a grower phase formulation. In fact, the last 1000 pounds (about 550 pounds consumed) mixed for the conventional pen was actually the starter formulation.

Formulations

4900 pounds of organic feed was consumed at a cost of \$795.00. Feed cost per cwt. Of gain was \$46.19. The “transitional” diet fed to the “conventional” treatment (the first 500 pounds fed) consisted of 249 # corn, 50#hard red spring wheat, 62.5# buckwheat, 125#soybean meal, 12.5# Organic Swine Grower-Finisher Premix, and 1.25# calcium carbonate. 450 pounds of this formulation were estimated to be left in the feeder on October 24 when the test ended. 4550 pounds of feed was consumed by the conventional group at a cost of \$425.53. Feed cost per cwt. Of gain was \$27.92. Conventional feed at this northern Minnesota site was charged at \$3.36 per bushel for corn and #300/ton for soybean meal. In many areas of significant corn production conventional corn cost during this time was near \$2.00-\$2.25 per bushel.

Carcass Traits

No comparison was made of the carcass traits between the two treatments. Six gilts (2 fed organically, 4 fed conventionally) were retained as breeding replacements. Two barrows were sold to individual buyers. Nine barrows were sold to a commercial buyer on December 3, 2003. They were fed a non-organic diet between the time that they were weighed off trial (October 24) and December 3. The nine barrows weighed 2980 pounds on December 3 for 333 pound average. Their total carcass weight was 2244 pounds. Dressing percent was 75.3% (2244/2980). Carcass weight ranged from 211 to 283 pounds. Adjusted live weight (base on carcass weight/75.3% dressing percentage) ranged from 280 to 377 pounds. Average % lean was 46.3 %, average loin depth was 2.62 inches, and average backfat was 1.29 inches. Percent lean ranged from 42% to 51% on the individuals.

Observations

During this grow-finishing phase comparison (63-255 pounds) performance between the two treatments was very similar. This is the same observation made in Trial 1. It appears producers evaluating the costs of an organic system could assume equal growth and feed efficiency in the grow-finish phase and compare the options (and premium necessary) based on the cost to formulate diets that supply similar nutrient density (protein/lysine, calcium, phosphorous, etc.) from conventional and organic sources available to them. In addition to the cost difference in the grow-finish phase an additional cost should be assigned to organic feeder pigs to account for a higher cost of feed in the breeding herd fed organic feed. We have no basis to make a judgment on performance differences in the breeding herd phase up to feeder pig size. Conventional production budgets for producing feeder pigs (available from University and feed industry sources) might be adjusted upward by the expected increase in cost of feed in the organic system.

Research

Participation Summary

Any opinions, findings, conclusions, or recommendations expressed in this publication are those of the author(s) and do not necessarily reflect the view of the U.S. Department of Agriculture or SARE.



This site is maintained by SARE Outreach for the SARE program and is based upon work supported by the National Institute of Food and Agriculture, U.S. Department of Agriculture, under award No. 2019-38640-29881. SARE Outreach operates under cooperative agreements with the University of Maryland to develop and disseminate information about sustainable agriculture. [USDA is an equal opportunity provider and employer.](#)

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