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## Pork Quality Assurance...Dollars and Sense

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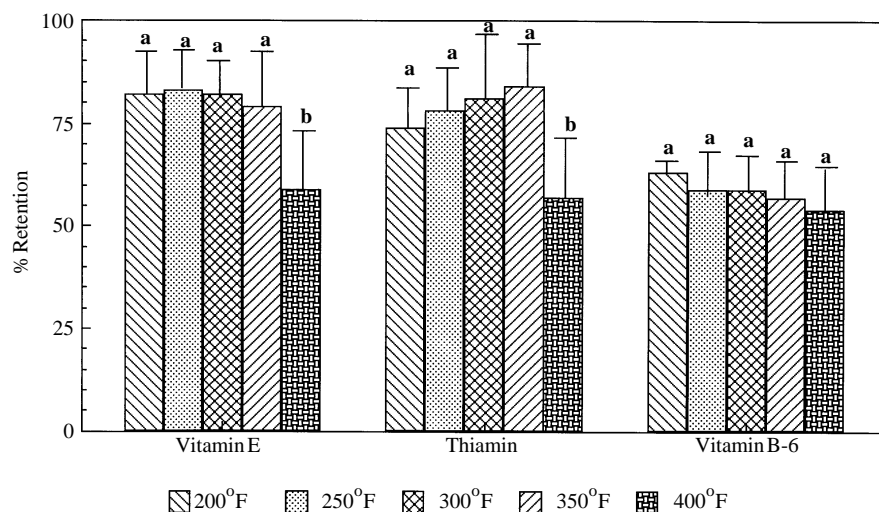


**Table 1. Effect of grill temperature on yield and cooking times for boneless pork chops<sup>1</sup>**

Grill temperature, °F	Yield (%)	Cooking time (min/g)
200°F	76.88 ± 3.90	0.21 ± 0.05 <sup>2</sup>
250°F	78.29 ± 4.61	0.14 ± 0.03
300°F	77.57 ± 4.84	0.13 ± 0.02
350°F	77.63 ± 3.98	0.11 ± 0.02
400°F	76.01 ± 6.25	0.10 ± 0.01

<sup>1</sup>Values given as mean ± standard deviation.

<sup>2</sup>Significantly higher (P<.05) than cooking times of other groups.



**Figure 1. True retention of selected vitamins in boneless pork chops grilled at various temperatures. Values represent means ± standard deviations. Values for each nutrient not sharing a common superscript are significantly different at P<.05.**

not significant.

Cooked pork chops (3.5 ounces) were found to contain approximately 96 to 144% of the selenium, 3 to 5% of the vitamin E, 14 to 20% of the vitamin B-6 and 18 to 42% of the thiamin needed to meet the daily Recommended Dietary Allowances of adults.

### Conclusions and Implications

To optimize cooking time and nutrient retention, the most desirable temperatures for grilling boneless pork chops were 250, 300 and 350°F. Retention values for nutrients were higher when chops were cooked on grills set at lower temperatures. The cooking time was longer at the lowest grill temperature. Boneless pork chops are rich sources of selenium and good to rich sources of thiamin and vitamin B-6, nutrients which Americans frequently consume in low amounts. The chops also provide some vitamin E.

<sup>1</sup>Judy A. Driskell is a Professor, Fayrene L. Hamouz, an Assistant Professor, Sharon L. Davis and Jidong Sun, graduate students and David W. Giraud, a Research Technologist in the Department of Nutritional Science and Dietetics, University of Nebraska-Lincoln.

## Pork Quality Assurance...Dollars and Sense

Angela Baysinger<sup>1</sup>

Why Worry?

### Summary and Implications

*Is there any reason a pork producer would **not** want to reduce production cost or improve management skills? With the pork industry becoming more consumer driven, should producers take an active role in producing a quality pork product? The Pork Quality Assurance (PQA) Program, developed by the National Pork Producers Council on behalf of the pork industry, is available to help pork producers answer these questions and ensure future success.*

Producers need to be conscious of the effect of swine health on pork quality. Packers have switched to more carcass buying, placing more responsibility on producers to provide them a quality pig. Producers must withstand the loss for pigs condemned for health reasons. The Pork Quality Assurance (PQA) program helps producers, through an analysis of their herd health protocol and management techniques, to produce better quality pork.

The PQA program is based on the Hazard Analysis and Critical Control Points (HACCP) process. This is an evaluation program routinely used by

the Food Safety and Inspection Service (FSIS) to monitor slaughter and processing facilities. The PQA program helps producers in evaluating the following critical control points.

- Establish an efficient and effective herd health management plan.
- Establish a valid veterinarian/client/patient relationship.
- Store all drugs correctly.
- Use only FDA approved over-the-counter or prescription drugs with professional assistance.
- Administer all injectable drugs and oral medications properly.

(Continued on next page)



- Follow label instructions when using feed additives.
- Maintain proper treatment records and adequate identification of all treated animals.
- Use drug residue tests when appropriate.
- Implement employee/family awareness of proper drug usage.
- Complete quality assurance checklist annually.

### Benefits

The following are benefits for producers of becoming PQA certified.

- An objective professional assessment of their pork production practices (ie. people/pig flow, biosecurity, processing, etc.)
- Examine the production process for possible cost saving areas (ie. vaccine, antibiotic or feed-additive usage).
- Discuss newly available animal health care products with a veterinarian.
- Review and update facility design and repair needs.
- Learn new technology and developments to improve the production system, nutrition program and swine health. For example, producers can gain insight into segregated early weaning, all-in/all-out, the latest dietary lysine recommendations or the most recent reports on Porcine Reproductive and Respiratory Syndrome (PRRS).

Producers can certify by a one-on-one consultation with their veterinarian, local extension educator, vocational agricultural teacher or through statewide certification meetings. To maintain Level III status, producers must re-certify every other year. For more information about the Pork Quality Assurance Program, contact the Nebraska Pork Producers Association, Inc., at (402) 472-2563.

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# Space Allocation Decisions for Barrows and Gilts

Mike Brumm  
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## Summary and Implications

*An experiment was conducted to determine if barrow and gilt performance could be modified by varying pen space allocation for each sex and whether performance of barrows given less space per pig could be enhanced with a more nutrient-dense diet. Barrows given 6 ft<sup>2</sup> of pen space per pig consumed less feed and grew slower with no effect on lean gain compared to barrows provided 7 ft<sup>2</sup> of pen space per pig. Increasing diet nutrient density by feeding the diet sequence recommended for gilts to barrows had no effect on performance for barrows at 6 ft<sup>2</sup> per pig. No differences in performance or carcass measurements were found when space allocation for gilts was increased from 7 to 8 ft<sup>2</sup> per pig. These results suggest that instead of stocking all-in/all-out (AIAO) managed grow-finish facilities at 7 ft<sup>2</sup> per pig for both barrows and gilts, growth rate of barrows can be restricted to match that of gilts if barrows are given 6 ft<sup>2</sup> and gilts 8 ft<sup>2</sup> of pen space per pig. For producers with barns of 500 head capacity managed AIAO, this manipulation of barrow growth results in increased numbers of barrows and gilts of the same weight at the same time, thus increasing producer marketing options.*

## Introduction

A frustration for many pork producers utilizing all-in/all-out (AIAO) management in growing-finishing facilities is that barrows generally grow faster than littermate gilts. This faster daily gain results in facilities which may have up to 50% of the pens empty

one to two weeks while waiting for the slower growing gilts to achieve similar market weight. In many smaller facilities, this differential in growth rate results in the inability of producers to market load lots of pigs, resulting in market access restrictions due to transportation costs. The purpose of the following experiment was to see if barrow and gilt performance could be modified by varying the space allocation and if performance of barrows given less space per pig could be enhanced with a more nutrient-dense diet.

## Methods

Terminal-cross pigs of high lean gain potential were allotted to various floor space and dietary treatments (Table 1). Treatment 3 was included to determine the effect of feeding a gilt diet (higher in lysine and other essential amino acids beginning at 80 pounds liveweight) to barrows given less floor space.

The experiment was conducted at the University of Nebraska's Northeast Research and Extension Center at Concord from November - March 1996. The facility was a fully slatted, double wide, naturally ventilated barn with fresh water under slat flushing for manure removal. Pen size was 7 ft x 8 ft with the experimental space allocations achieved by varying the number of pigs per pen. In the event of pig removal for poor performance, pen size was adjusted to maintain the desired stocking density. There was one nipple drinker per pen and one two-hole self feeder.

Diets were formulated with corn and soybean meal according the University of Nebraska recommendations for barrows or gilts of high lean gain potential. Diets were switched on the week pens of pigs averaged 80, 130 and 190 pounds. The lysine sequence