

The Iowa State Fair 4-H Swine Derby Contest Provides Unique Educational Experience for Youth

A.S. Leaflet R1963

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Summary and Implications

The Iowa State Fair 4-H swine show was altered in 1998 to include a derby contest. This requires exhibitors to show derby entries if they wish to show in the open market swine show. This aspect of the show was added to encourage youth to understand the importance of growth and performance to the swine industry. In the six years the program has been implemented, an average of 474 pigs have been entered. The evidence of this program's success is illustrated by the improvements made by the exhibitors. Average daily gain and loin muscle area have increased while tenth rib backfat has decreased.

Introduction

Swine tested derby contests are programs in which performance and carcass merit are combined, emphasizing the economics of pork production. The Iowa State Fair 4-H Swine Derby Contest provides a setting that encourages 4-Hers to learn and apply practical methods of production, management, marketing, and university research. This type of contest was implemented to further enhance the learning experience of Iowa's youth. The unique guidelines of this contest allow exhibitors to focus on not only the appearance of their pig, but its performance and value as a market animal raised for profit.

Materials and Methods

Youth begin by nominating up to 20 crossbred and 20 purebred barrows or gilts at weigh-in time in the spring. Entries must be brought to designated weigh-in sites to be verified and weighed in by state officials. At the site, pigs are given an official ear tag, ear tattoo, and hair samples are collected for identity verification. Pigs must be weighed on test at no more than 40 pounds, and are fed at the farm until show day. At the fair, all entries are weighed and scanned for tenth rib backfat (BF10) and

loin muscle area (LMA) using real-time ultrasound. Real-time ultrasound is conducted by certified technicians using an Aloka 500 machine. All pigs are ranked on standardized fat-free lean gain per day on test. The following National Pork Producers Council formula are used to predict standardized fat-free lean gain per day on test (LGOT) using real-time ultrasound.

Pounds of Lean at End of Test = $0.833 * \text{sex (barrow}=1, \text{ gilt}=2) - 16.498 * (10^{\text{th}} \text{ rib backfat, in.)} + 5.425 * (10^{\text{th}} \text{ rib loin muscle area, in.}^2) + (.291 * \text{live wt., lb.)} - 0.534$

Pounds of Lean at Start of Test = $0.418 * (\text{starting wt., lb}) - 3.650$

The difference between Pounds of Lean at End of Test and Pounds of Lean at Start of Test is divided by number of days on test to equal LGOT.

Based on these results, the top 100 pigs and additional nominated pigs form the carcass contest. These pigs are evaluated in the packing plant for BF10, LMA, and meat quality. The live show judge is provided ADG on each pig, and entries are placed live on performance and phenotype. The final derby placing is based upon lean gain per day on test using starting weight, carcass weight, days on test, BF10 and LMA.

Results and Discussion

From 1998 to 2003, an average of 474 pigs/year have been shown and evaluated live with real-time ultrasound. Tables 1, 2, and 3 show the progress that has been made in ADG, BF, and LMA, respectively. Average daily gain has improved from 1.79 lbs./day to 1.95 lbs./day, while BF10 has decreased from 0.86 in. to 0.66 in., and LMA has increased from 6.63 in² to 7.52 in². The average number of pigs in the carcass contest has been 144/year during the same time period. These animals' ADG has improved from 1.89 lbs./day to 2.16 lbs./day while BF10 decreased from 0.80 in. to 0.66 in., and LMA increased from 6.76 in² to 8.42 in². These improvements and the positive feedback from youth and parents illustrate the educational value of this program.

Table 1. Average Daily Gain - Scan Data - All Pigs

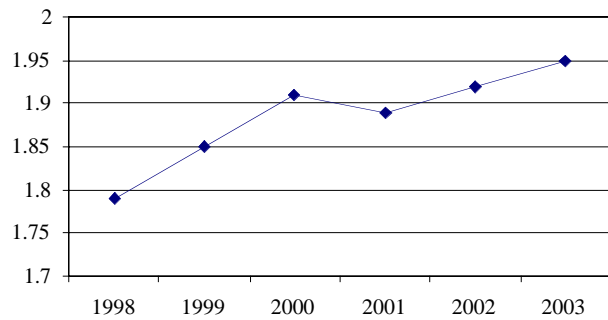


Table 2. Backfat - Scan Data - All Pigs

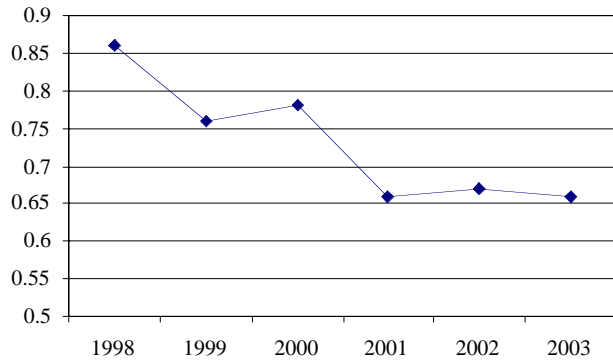


Table 3. Loin Muscle Area - Scan Data - All Pigs

