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Monthly variation in hog carcass traits

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MONTHLY VARIATION IN HOG CARCASS TRAITS

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Summary

Little research has been conducted regarding the impact that time of year when hogs are marketed has on various carcass traits. This study examined monthly variation in a variety of hog carcass traits based upon 1995 slaughter summaries provided by a midwestern hog marketing network. Results indicate that carcass traits did indeed vary throughout the 1995 calendar year. However, given that these monthly variations were observed only during one year, it remains to be seen whether they indicate a seasonal relationship that hog producers can expect to see year after year or specific factors operative only in 1995. Additional years of data will be collected to extend this study and validate the results.

(Key Words: Carcass Traits, Monthly Variation in Carcass Traits.)

Introduction

Marketing hogs on a carcass-merit basis has become the dominant method of pricing hogs in the U.S. The percentage of hogs sold via carcass-merit programs increased from 14% in 1984 to 67% by 1994. As a result, changes in carcass characteristics can have a significant impact on hog producers' net returns. Improved knowledge of variation in carcass characteristics will provide producers with an opportunity to better manage the carcass characteristics of the hogs they market. This study examined the monthly variation of hog carcass characteris-

tics based upon hogs marketed by a midwestern hog marketing network during 1995.

Procedures

Slaughter summaries covering the period from Dec. 28, 1994 through Dec. 27, 1995 were obtained from a midwestern hog marketing network. All of the hogs were procured by a single packer under a contractual carcass merit-based marketing agreement and were slaughtered at the same packing plant. Five observations from Dec. 1994 were omitted from the data set so that all data in this study were taken from hogs marketed in 1995. Consequently, the data set consisted of 121,087 market hogs marketed in 1,232 groups.

Carcass weight was reported as total weight for each group, and carcass characteristics were reported as averages for the group. To obtain an average hot carcass weight for the hogs within each group, the total carcass weight in pounds was divided by the number of hogs in the group. Other data included in the analysis were the average backfat depth in inches measured at the 3/4 position on the last rib, the average loin depth in inches measured at the 3/4 position on the last rib, the average percentage of lean within a carcass, carcass yield, and the number of animals marketed in a group. Measurements for backfat depth and loin depth were taken simultaneously using an optical probe. Lean percentage was determined by a proprietary plant formula based on carcass weight, backfat depth, and loin depth.

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Monthly averages for backfat, loin depth, lean percentage, carcass yield, and carcass weight were computed. Averages were weighted by the number of head marketed in each group to account for variation in group size.

Results and Discussion

Monthly weighted average carcass attributes for 1995 are reported in Table 1 and in Figures 1 through 4. The weighted average annual backfat depth was .747 in., but backfat depth was above the annual average

from January through July and below the annual average from August through December.

Monthly weighted average carcass weight varied substantially from the annual average of 191 lb during the course of the year. The average weights during January and February were below the annual average, but weights during March through July were well above the annual average. During the August through November period, weights again fell below the annual average before rising modestly above the annual average in December.

Table 1. Monthly Weighted Average Carcass Traits, 1995

Month	Backfat (in.)	Loin Depth (in.)	Lean (in.)	Yield (%)	Carcass Weight (lbs.)
January	.760	2.11	53.50	74.794	188.54
February	.78	2.10	53.17	75.378	187.59
March	.783	2.17	53.31	74.984	193.63
April	.794	2.14	53.09	75.62	196.50
May	.756	2.17	53.73	75.372	195.56
June	.750	2.16	53.79	75.469	193.28
July	.777	2.14	53.27	75.065	195.10
August	.732	2.12	53.97	75.002	187.86
September	.711	2.06	54.13	74.329	187.11
October	.685	2.11	54.65	74.346	187.41
November	.695	2.09	54.45	74.568	188.22
December	.735	2.16	54.03	74.955	192.10
Annual Average	.747	2.127	53.76	74.990	191.08

Other carcass characteristics also exhibited some variation within the year. The annual weighted average lean percentage was 53.8%. Monthly average lean percentages rose above the annual average in the fall, particularly in October and November. Finally, carcass yield averaged 74.99 during 1995, but carcass yields were above that level during most of the January through August period but fell below that level from September through November.

In general, the variations in observed carcass traits across the year are consistent with the expected fundamental dynamics of growth. Results from this study suggest that pigs marketed in the winter and early spring

have higher amounts of backfat and larger loin depths compared to pigs marketed in late summer and early fall. The winter-marketed pigs were raised during a time of the year when environmental temperature could be regulated for maximizing feed intake. That would be expected to increase muscle (loin depth) and backfat deposition. However, the increased intake should result in a larger proportional increase in backfat compared to muscle. Pigs marketed in the fall were on feed over the summer, when environmental temperatures generally cause a decrease in feed intake. This reduction is expected to lead to slower growth and the deposition of less backfat. Additional data are needed from subsequent years to validate the trends observed.

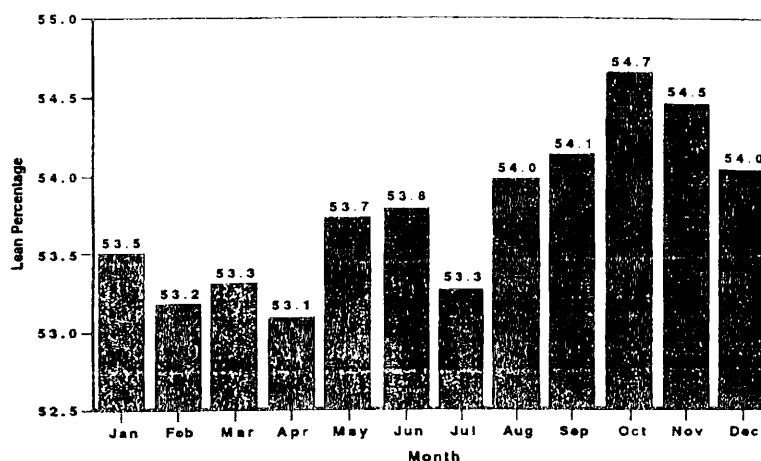


Figure 1. Monthly Weighted-Average Lean Percentage, 1995

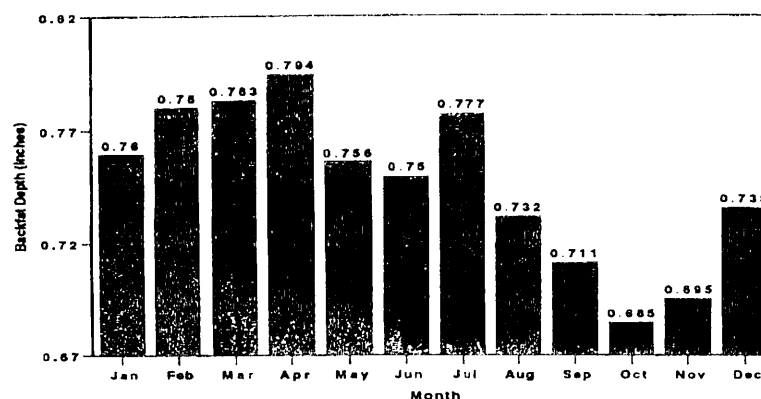


Figure 2. Monthly Weighted-Average Backfat Depth, 1995

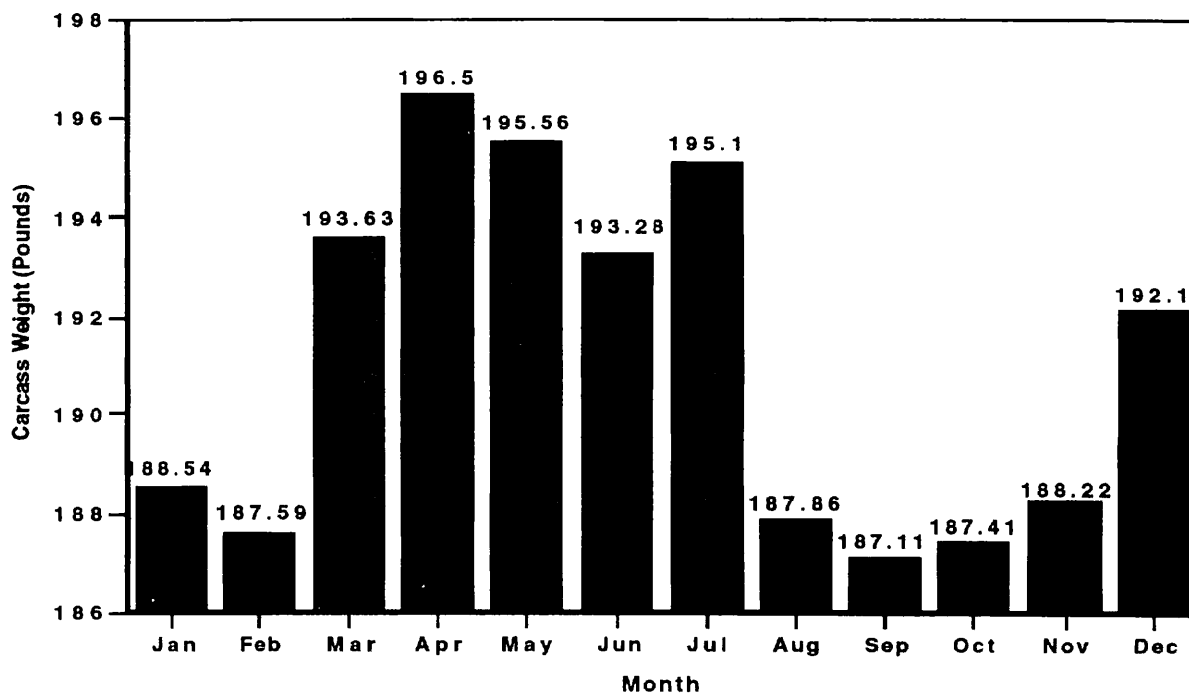


Figure 3. Monthly Weighted-Average Carcass Weight, 1995

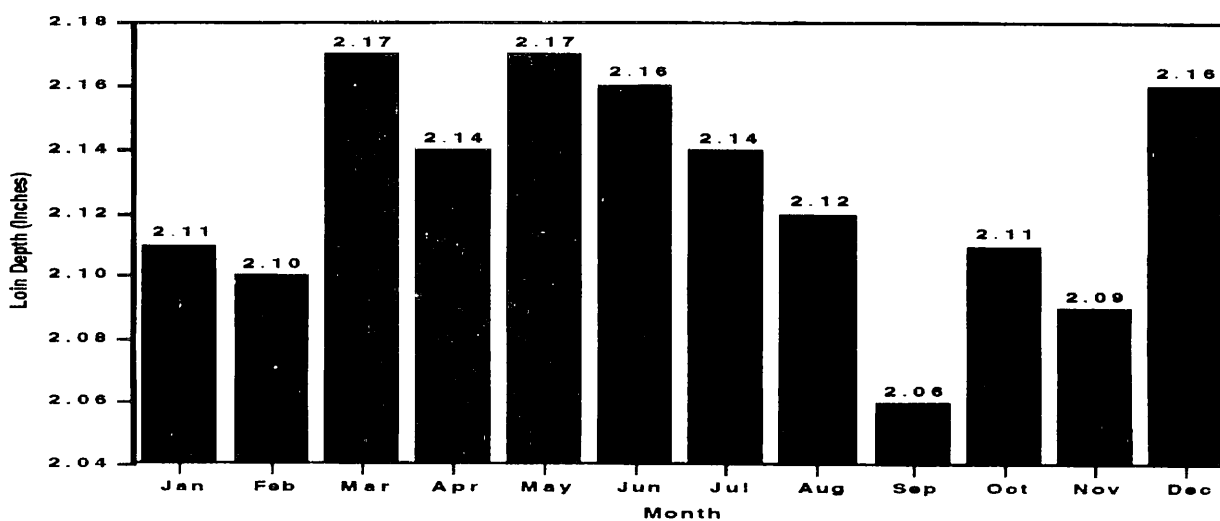


Figure 4. Monthly Weighted-Average Loin Depth, 1995