GRADING PROGRAMS

Most serious processors of hogs now have solid carcass grading programs.

Leidy's, Inc. is no exception. Their grade and weight program has been in place since September 1994, and is a result of more than two years of work. It provides the vital components that any good grading program should have — objective measurement of every carcass, a fair and public method for determining base market price, and an attractive incentive for producing high-quality hogs.

Let's take a brief look at the Leidy program.

Principle Of Measurement

The device employed at Leidy's is a Hennessy GP4 probe. After each carcass has been cleaned, split, and is ready to enter the cooler, a stainless steel probe on the Hennessy is inserted into the carcass, between the 10th and 11th rib and about three inches off the midline.

The probe penetrates the backfat layer, the underlying loin eye muscle, until the probe emerges in the intestinal cavity. Then the probe is withdrawn, and during the return stroke, the depth of the loin muscle and backfat layer are automatically measured and recorded.

The principle of light reflectance is what enables the probe to measure the fat and muscle depth in the carcass. A small light at the end of the probe shaft combined with a small light receptor measures the reflection of the light. Much of the light striking the fat layer is reflected due to the white color. While the probe passes by the loin muscle, the reflectance is reduced because the muscle is darker than fat. These changes in reflectance are detected by the Hennessy and converted in the computer to fat, muscle depth and color score.

Accuracy

The accuracy of all optical probes (Hennessy, Fat-O-Meat'er, Destron) is considered fairly similar. While the instruments employ unique light wavelengths and methods for signal transmission, these differences have minimal impact on overall accuracy.

At Leidy's, the operator checks the calibration of the Hennessy probe three times a day against a calibration block. He also inserts a control needle at the probe site on several carcasses throughout the day to be sure the probe location and angle are correct. Both of these quality control checks are documented and monitored by front office personnel.

Prediction

The Hennessy and its computer are set up at Leidy's to calculate the percentage of boneless ham, loin, and shoulder in the carcass. Boneless cuts were judged to be more accurately predicted than bone-in cuts, and therefore chosen for the final program.

The three measurements used in the prediction equation include fat, loin eye depth, and "rib cavity thickness." After the probe passes through the fat and loin muscle, it enters a thin layer of fat and connective tissue lining the intestinal cavity. Leidy's refers to this layer as the rib cavity thickness.

Pricing

Currently the live market price is based on Peoria, St. Louis, and Indiana direct plus $1.50/cwt. The live price is divided by a standard yield of 74 percent to arrive at the base carcass price paid for a hog with 42 percent lean.

For a live price of $40/cwt, the calculated base carcass price is $40 divided by 74 percent or $54.05.

Producers receive a bonus for hogs containing more than 42 percent lean, and discount for hogs under 42 percent. Currently each percentage unit above 42 percent is worth about $1.00/cwt (applied to carcass price). The discounts work on the same principle, but are twice as great as the bonuses.

A hog with 1 inch of backfat and a 4.5 square inch loin eye would be considered average (42 percent lean) on the Leidy program. A hog with .60 inches of fat and a 6.5 square inch loin eye would be at the top of the scale (47 percent). And a hog with 1.4 inches of fat and a 3.5 square inch loin eye would be at the bottom (37 percent lean).

Desirable Weight Range

The acceptable carcass weight range is 160 to 200 pounds, or roughly 216 to 270 pounds live. A hog weighing 10 pounds too light (live) would be discounted about $4 per head. A hog with a live weight 10 pounds too heavy would be discounted about $2 per head.

Obviously, as the weight strays further from the desired range, discounts get heftier.

Other Information Provided

As a service to producers, information is provided on lungs, skin, and livers. Also year-to-date historical data on percent lean is supplied along with a comparison to other producers selling to Leidy.

Comparisons

Producers from the beginning have been making the inevitable comparison between the Hatfield and Leidy program. Actually there are more similarities than differences. But for sake of argument, here are the major contrasts between the two programs.

Type of Device Used. Leidy's uses the Hennessy probe, Hatfield uses the Fat-O-Meat'er. Both are optical probes and considered to be nearly identical in operating principle and accuracy.

Lean Prediction. Leidy predicts a boneless percentage, Hatfield predicts a bone-in percentage. That puts Leidy's lean value about 14 percent units below that of Hatfield. Which method is more accurate? The boneless prediction may be. But it's probably better to ask which is more useful. In general, for further processing, the boneless yield will be more valuable to the packer.

My guess is that as grading programs evolve, more and more packers will be predicting boneless pounds or percentages, rather than bone-in cuts.

Hatfield uses two measurements (fat and loin eye depth) for their prediction. Leidy's uses three (fat, loin depth and "rib cavity thickness"). The additional measurement and the boneless prediction contribute to a slightly higher rate of accuracy on the Leidy system.

Bonuses and Discounts. Each company uses a discount rate that is twice as large as the bonuses. Currently, the magnitude of both the bonuses and discounts is slightly higher with Leidy's. But because these values are derived differently, they could change with the market. Hatfield bases their bonuses on wholesale cut values. Leidy multiplies the base carcass price by a straight percentage to arrive at a bonus level.

Related to the issue of bonuses is a comment that I have heard from several people recently. And that is, these programs "pay for the absence of fat." In a sense they do, since leaner hogs are worth more than fat ones, and clearly fat has a bigger impact on price than does muscle.

But these relationships are more coincidental than intentional. Here's why.

Both packers at the onset purchased optical probes with the understanding that these devices could measure the carcass and predict something. And for both packers, the prediction component is really what counts.

What did they want to predict? The percentage of ham, loin and shoulder (the lean cuts). Admittedly, one company wanted bone-in, one chose bone-out, but that has little bearing on this argument.

Now, if you want to predict the percentage of lean cuts, what single measurement in the carcass would maximize your accuracy of prediction? Backfat. Yes, muscle measurements will help improve the reliability of prediction and so

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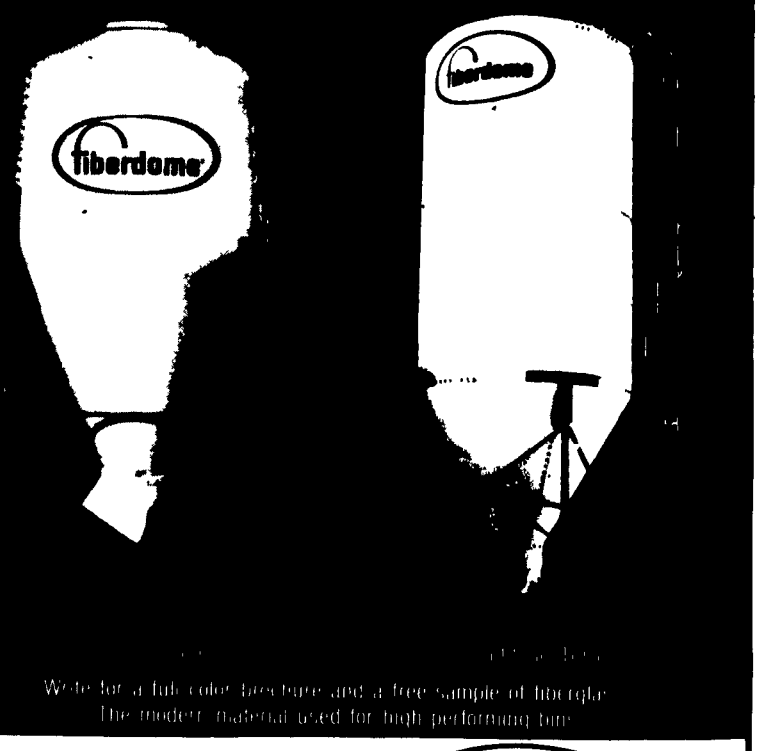

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