Improvements in Handling and Stunning of Beef Cattle in Slaughter for 1999

This report summarizes improvements in handling and stunning of beef cattle. It compares data collected in 1996 for the USDA by Grandin Livestock Handling Systems to data collected during 1999. The data collected during 1999 was obtained during animal welfare audits conducted by Temple Grandin and the McDonald's HACCP team and data from other plants visited by Temple Grandin. As stated on the McDonald's webpage, McDonald's Corporation continues to implement animal welfare programs. The summaries in this report compare data on compliance to the guidelines of the American Meat Institute. All plants are in the United States. Today, many other restaurant companies, such as Burger King and Wendy's, are also auditing plants. Supermarkets are also becoming involved in audit programs. Today most of the audits are being done by third party independent auditors. Since 1999, many more large meat buyers are auditing slaughter plants.

The data clearly show that the audit program conducted by McDonalds has resulted in a greater percentage of slaughter plants which are now in compliance with the guidelines. The percentage of plants which passed the stunning audit has doubled in 1999 when compared to 1996. The percentage of plants that received an acceptable score for vocalization (moos and bellows stress measurement) has almost doubled. These improvements have been maintained by continuous audits for the last five years. Some of the plants have better animal welfare than they had in 1999.

CATTLE STUNNING

Percentage of plants that were in compliance with the American Meat Institute guidelines which
specify that 95% of the cattle must be rendered instantly insensible with one shot from a captive bolt gun. All cattle must be completely insensible and unconscious on the bleed rail for a plant to pass.

Percentage of Beef Plants which Passed the Stunning Audit.

1996 - USDA Survey..........30% Data collected at 10 beef plants
1999 - Audits...................74% Data collected at 19 beef plants - first six months of 1999
1999 - Audits...................90% Data collected at 41 plants - Entire year of 1999


Today, these improvements have been maintained.

Averages of the Percentage of Cattle Stunned Correctly on the First Attempt

1996 - USDA Survey.........89% Data collected at 10 beef plants
1999 - Audits.................94.37% Data collected at 19 beef plants - first six months of 1999
1999 - Audits.................96.61% Data collected at 41 plants - Entire year of 1999

For more recent data, see the survey section of www.grandin.com.

Today, these improvements have been maintained.

The 1999 average was lowered by two plants which got very poor scores of under 80%. When these two plants are removed the remaining 15 plants averaged 96.6%. The major cause of poor stunning was a lack of stun gun maintenance. This is similar to the findings in 1996. In two plants very high lines speeds of 390 per hour may have been a factor. In these plants one operator was used to stun the cattle. Two plants running 390 per hour that used two operators passed the audit.

VOCALIZATION SCORES

Counting the number of cattle that vocalize (moo or bellow) during handling and stunning is a sensitive indicator of distress. When plants improve their handling practices the percentage of animals that vocalize will decrease. Each animal is scored on a yes/no basis as either a vocalizer or a non-vocalizer. They are scored as they move through the stunning chute area. Compared to the USDA Survey in 1996 there has been a great improvement and the percentage of cattle that vocalized during handling and stunning has decreased. The American Meat Institute guidelines
specify that a plant passes and receives an acceptable rating when 3% or less of the cattle vocalize during stunning and handling.

Percentage of Plants which Passed the Vocalization Audit

<table>
<thead>
<tr>
<th>Year</th>
<th>Survey</th>
<th>Pass Rate</th>
<th>Plants Recorded</th>
</tr>
</thead>
<tbody>
<tr>
<td>1996</td>
<td>USDA Survey</td>
<td>38%</td>
<td>7</td>
</tr>
<tr>
<td>1999</td>
<td>Audits</td>
<td>78%</td>
<td>18</td>
</tr>
<tr>
<td>1999</td>
<td>Audits</td>
<td>72%</td>
<td>42</td>
</tr>
</tbody>
</table>


Averages - Percentage of Cattle that Vocalized during Stunning and Handling

<table>
<thead>
<tr>
<th>Year</th>
<th>Survey</th>
<th>Vocalization Rate</th>
<th>Plants Recorded</th>
</tr>
</thead>
<tbody>
<tr>
<td>1996</td>
<td>USDA Survey</td>
<td>12%</td>
<td>7</td>
</tr>
<tr>
<td>1999</td>
<td>Audits</td>
<td>3.4%</td>
<td>18</td>
</tr>
<tr>
<td>1999</td>
<td>Audit</td>
<td>2.77%</td>
<td>42</td>
</tr>
</tbody>
</table>

The major cause of elevated vocalization percentages was excessive prodding of cattle with electric prods at the entrance of the restrainer. In one plant the problems were due to untrained people and in the other plant cattle balked at a dark restrainer entrance. Adding a light at the restrainer entrance reduced their vocalization score to zero. Another cause of elevated vocalization percentages was poor maintenance of restrainer conveyors. Worn out equipment had broken sharp edges which stuck into the cattle. There were four plants which failed the audit on vocalization. The average vocalization percentage for the 14 plants that passed the vocalization audit is a good score of 1.3%.

The slight decrease in the percentage of beef plants passing the vocalization audit was partly due to the fact that data collected during the second half of 1999 had a greater percentage of smaller cow plants. The first half of 1999 had a greater percentage of very large fed beef plants. Forty beef plants out of 41 (97%) rendered 100% of the cattle insensible prior to hoisting to the bleed rail. In 1996 nine beef plants out of 10 (90%) achieved 100% insensibility prior to hoisting. All cattle were rendered insensible prior to slaughter procedures. One problem area in certain regions of the country is a few dairies allow some of their cows to deteriorate into emaciated downers. This problem must be corrected at the dairies.

These summaries clearly show that the industry has improved. Audits conducted by McDonalds Corporation have motivated the beef industry to improve handling and stunning of cattle. The improvements in these summaries have mostly occurred when the McDonald audits were started. The audits conducted by McDonalds in conjunction with their supplier food safety program have resulted in substantial improvements in animal welfare in slaughter plants.
**PIG STUNNING and HANDLING**

Percentage of plants which passed the stunning audit.

- 1996 - USDA Survey........90% Data collected at 10 plants
- 1999 - Audits....................89% Data collected at 19 plants


The greatest improvement in the pork plants has been in handling. Improvements in handling made it possible to develop a squeal scoring system where the percentage of time that the entire handling and stunning area is quiet is calculated. Prior to the McDonald's audits, squeal scoring was impossible because excited pigs squealed continuously. Squeal scoring is a yes/no scoring system. As each pig is stunned the auditor checks "room quiet" or "heard a squeal."

Percentage of time pigs squealing.

- 1996 - USDA Survey........estimate 100%; impossible to score in 10 plants
- 1999 - Audits......................range 48% of the time squealing to 96%; Data collected in plants

The best plants replaced electric prods with large flags for moving pigs. One large pork plant audited in the year 2000 had pig squeals only 20% of the time. This plant had worked very hard to remove distractions such as shiny reflections and cracks in the floor that made pigs balk.