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Indiana On-Farm Gilt Testing Program Rules and Regulation

K. J. Drewry

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animal sciences

swine

COOPERATIVE EXTENSION SERVICE, PURDUE UNIVERSITY, WEST LAFAYETTE, INDIANA 47907

Replaces 1974

Indiana On-Farm Gilt Testing Program Rules and Regulations

K. J. Drewry, Animal Sciences Department, Purdue University

Purpose
The Indiana On-Farm Gilt Testing Program offers purebred and commercial swine breeders an accurate record-keeping system to be used in measuring gainability, feed conversion, carcass quality (as indicated by backfat and loineye area) and visual appraisal (type and structural soundness) of gilts. The program will:
1. assist the breeder in identifying superior gilts within strains, lines, breeds or crosses;
2. assist the commercial breeder in selecting replacement gilts; and
3. assist the purebred breeder in selecting replacement and sale gilts.

Breeding
Gilts of any breed or breed combination may be evaluated in the program.

Identification
Gilts to be evaluated must be individually identified. Recommended identification for gilts is the “1-3-9-27-81 litter and pig ear-notching” system, although an ear-tag system may also be used. Sows should be identified by either an ear-tag or ear-notch.

Boars in purebred herds may be identified by: ear-notch, ear-tag, herd name or registration number (limit to 5 letters or numbers). Likewise, boars in commercial herds may be identified by: ear-notch, ear-tag, herd name, registration number or breed designation (e.g., Duroc, Hamp, York, etc.)

Traits Measured
Gilts may be evaluated for any combination of traits including: growth rate, backfat, feed efficiency, loineye area and visual appraisal.

Testing Procedures
A minimum of 12 or more gilts from the herd shall be evaluated within the farrowing season.

The data form used with this program is ISEP Form 5, “Indiana On-Farm Boar and Gilt Testing Programs Evaluation Work Sheet.” Copies may be obtained from the Indiana Swine Evaluation Program Coordinator, Animal Sciences Department, Purdue University, West Lafayette, Indiana 47907; or from any area Extension livestock agent or county Extension office. In addition, if
the breeder wishes to keep feed efficiency records on the gilts (optional), he should obtain and complete an ISEP Form 6, "Test Pen Feed Record" as well as one Form 5 for each test pen of gilts being evaluated. (Samples of ISEP Forms 5 and 6 are at the end of this publication.)

The cooperator must list his county, name and address, and check the appropriate sex on each ISEP Form 5 used. (Herd code will be assigned by the Indiana Swine Evaluation Program Coordinator.) Make entries in the rightmost-column of all columns, especially for ear notches, sire name or number, number farrowed, number weaned and on-test weight. Insert leading zeros on all single month and day entries—e.g., February 9 would be recorded as 02 09, etc. Use appropriate class and breed codes as given in ISEP Form 5. The commercial producer should, for crossbred sows, use the breed code of their sires.

The following information is to be entered on ISEP Form 5 for each gilt: pen number (if feed efficiency is obtained, otherwise leave blank); gilt ear notches or identification and sex code; sire records—herd name or number (limit to 5 letters or numbers), class code and breed code; dam records—year farrowed, ear notches or identification, class code and breed code; and litter records of test gilts—date farrowed, number farrowed in litter and number weaned in litter.

Gilts may be individually weighed for on-test weight when they are between 5 and 7 weeks of age or when they weigh 45 to 50 pounds. This weight and date should be recorded on ISEP Form 5. With most producers, the on-test weight could correspond to the time gilts are weaned.

If feed efficiency is to be obtained, feed consumption records for each test pen should be recorded on ISEP Form 6. There shall be no substituting of gilts in a test pen once the on-test weights have been obtained. However, in case of death, injury or sickness, the pig(s) may be weighed off-test and the weight and date recorded on ISEP Form 5.

The test gilts may be fed the breeder's regular ration. If feed efficiency is being obtained, the gilts must be self-fed. Since potential herd replacements are being evaluated, it is recommended that the rations for the gilts be higher in protein than common growing-finisher swine rations.

Recommended rations are: (1) up to 15 weeks—15-18% protein and not over 5% fiber, and (2) 15 weeks to end of test—14-17% protein and not over 5% fiber. Copies of suggested test and conditioner rations may be obtained from the Indiana Swine Evaluation Program Coordinator at Purdue.

All gilts should be reweighed when they are between 19 and 21 weeks of age or 190 to 210 pounds. This weight and date should be recorded as the off-test weight on ISEP Form 5.

**Measuring Backfat**

If backfat is to be measured, the measurements should be made at the shoulder, back and loin when the gilts are weighed off-test. The backfat measurements may be obtained with either the mechanical probe 2 inches off the midline or with the sonoray or similar method. Adjust backfat to 230-pound basis using the values given in Table 1, and record on ISEP Form 5. Adjusted backfat values of 1.10 and 0.90 would be recorded as 110 and 090, respectively.

**Measuring Loineye Area**

Loineye area at the last rib is not a required measurement. If the breeder chooses to take a loineye measurement, it should be obtained at 200 pounds or when the gilts are weighed off-test between 19 and 21 weeks of age. Adjust the loineye area measurement to 230-pound basis using the values given in Table 2, and enter on ISEP Form 5. Record values such 5.90 and 6.10 square inches as 590 and 610, respectively.

**Assigning Visual Score**

The visual acceptability score, if obtained, would be assigned when gilts are weighed off-test. Visual score may be assigned by the cooperator, or he may choose to have a committee of fellow breeders assist in determining the visual score for the gilts. If so, the visual score reported for each gilt shall be the average score of the committee.

Items to consider when assigning the visual score shall be those related to structural soundness and visual acceptability, including: freedom of movement, bone size, scale, leg length and placement (including correctness of pastern), chest capacity, overall balance, body length, underline (prominence, spacing and number of teats), and overall expression of femininity. A suggested visual score card is presented in Figure 1.

The visual score for most animals will fall in the 20- to 80-point range, with most being between 35 and 65. Extremely poor gilts will score below 20, and extremely outstanding gilts will score above 80.
### Table 1. Backfat Thickness Adjusted to 230 Pounds Live Weight.*

<table>
<thead>
<tr>
<th>Average actual backfat</th>
<th>190</th>
<th>195</th>
<th>200</th>
<th>205</th>
<th>210</th>
<th>215</th>
<th>220</th>
<th>225</th>
<th>230</th>
<th>235</th>
<th>240</th>
<th>245</th>
<th>250</th>
<th>255</th>
<th>260</th>
<th>265</th>
<th>270</th>
<th>275</th>
<th>280</th>
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</thead>
<tbody>
<tr>
<td>in.</td>
<td>0.60</td>
<td>0.61</td>
<td>0.62</td>
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<td>0.66</td>
<td>0.67</td>
<td>0.68</td>
<td>0.69</td>
<td>0.70</td>
<td>0.71</td>
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<td>0.51</td>
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<td>0.45</td>
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<tr>
<td>Actual weight (in pounds when measured)</td>
<td>0.39</td>
<td>0.38</td>
<td>0.38</td>
<td>0.37</td>
<td>0.36</td>
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<td>0.31</td>
<td>0.31</td>
<td>0.30</td>
<td>0.29</td>
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</table>

* Adjusted backfat = [(230 - actual weight) x 0.004] + 1.0 x average actual backfat

### Table 2. Loineye Area Adjusted to 230 Pounds Live Weight.*

<table>
<thead>
<tr>
<th>Actual loineye</th>
<th>190</th>
<th>195</th>
<th>200</th>
<th>205</th>
<th>210</th>
<th>215</th>
<th>220</th>
<th>225</th>
<th>230</th>
<th>235</th>
<th>240</th>
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<th>250</th>
<th>255</th>
<th>260</th>
<th>265</th>
<th>270</th>
<th>275</th>
<th>280</th>
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</table>

* Adjusted loineye = actual loineye + 0.015(230 - actual weight)
Data Summary Procedure

After all test measurements have been obtained on the gilts and recorded, the cooperator should sign ISEP Form 5. If feed efficiency is to be reported, the cooperator should complete and sign ISEP Form 6, which gives the test pen feed consumption and a description of the test area.

The completed and signed white copy of ISEP Form 5 and ISEP Form 6 (if completed) should then be forwarded to the Indiana Swine Evaluation Programs, Swine Extension Section, Animal Sciences Department, Purdue University, West Lafayette, Indiana 47907. The cooperator should retain the yellow copy of ISEP Form 5 for his files.

At Purdue, the individual gilt data plus the sire and test-group averages will be computer recorded for: number farrowed, number weaned and age at 230 pounds; and the test records and ratio values for all the traits will be measured.

Under the on-farm gilt testing program, the cooperator may choose to measure various combinations of the five production and carcass traits (i.e., daily gain, adjusted backfat, feed efficiency, adjusted loin eye area or visual score). Thus, an individual index is not calculated for each gilt. However, the gilt’s ratio values reported for the traits measured will show her relative superiority to the test-group average. Gilts with trait ratio values over 100 are superior to the test-group average for these traits.

For example, let’s assume that a tested gilt had the following records: daily gain of 1.80 pounds per day; adjusted backfat of 0.90 inches; and visual score of 65 points; whereas the test-group averages were: 1.70 pounds daily gain, 0.85 inches adjusted backfat and 60 points visual score. This gilt would, therefore, have ratio values of 106 for daily gain, 94 for adjusted backfat and 108 for visual score. In other words, she grew 6 percent faster, had 6 percent more backfat, and had an 8 percent higher visual score than the average of all gilts in the group.

Breeder’s Summary Records

The computer summary will be returned to the cooperator within 10 to 14 days following receipt of ISEP Form 5 and ISEP Form 6 (if used) at Purdue. The summary will have individual gilt records listed by sire; and sire and herd averages will be reported.

These computer summaries can help the purebred and commercial producer in selection of superior gilts for herd replacement. It is suggested that the producer test one-third more gilts than required for replacements, and then select the top two-thirds, based on the records ratios reported on his computer summary.
# Sample of ISEP Form 5

## Completion Instructions

1. On-farm testing rules and regulations are given for boars in Purdue Extension Publication AG-380 and for gilts in AG-413, which are available from your county Extension office or the address above.

2. For boars: Complete one ISEP Form 5 for each test pen of boars, including on-test and off-test weights and backfat. Linsey, feed efficiency, and visual score are optional. If feed consumption is not reported, complete ISEP Form 5 only. If feed consumption is measured, complete both sides of ISEP Form 6. Weigh boars on-test when pen average is 60-70 pounds; weigh off-test when pen average is 230 pounds.

3. For gilts: Gilts may be evaluated for any combination of gain, feed efficiency, backfat, loineye and visual score. If feed consumption is not reported, complete ISEP Form 5 only. If feed consumption is reported, complete one Form 5 and one Form 6 (feed record only) for each test pen.

4. When completed, send official (white) copy of ISEP Form 5 and ISEP Form 6 to the address above. Retain owner’s copy (yellow) for your files.

5. A summary of your records will be returned within 10-14 days.

## EXPLANATION OF ITEMS

- **(a)** Herd code is assigned by the program coordinator.
- **(b)** Animals may be identified by any method (ear notches, herd tags, herd names), The 1-3-9-27-81 ear notching system is recommended.
- **(c)** Coded remarks space is for your use only.

<table>
<thead>
<tr>
<th>Class Code</th>
<th>Breed Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-Registered</td>
<td>1-Berkshire</td>
</tr>
<tr>
<td>2-Grade</td>
<td>2-Chester White</td>
</tr>
<tr>
<td>3-Crossbred</td>
<td>3-Duroc</td>
</tr>
<tr>
<td>4-Hampshire</td>
<td>4-Poland China</td>
</tr>
<tr>
<td>5-Landrace</td>
<td>5-Other Breeds</td>
</tr>
<tr>
<td>7-Spotted</td>
<td>8-Yorkshire</td>
</tr>
</tbody>
</table>
Indiana On-Farm Boar and Gilt Testing Program

TEST PEN FEED RECORD

Herd Code 99001

Pen Number 02

<table>
<thead>
<tr>
<th>Date</th>
<th>In</th>
<th>Back</th>
<th>Consumed to date</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/15</td>
<td>1000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3/31</td>
<td>1000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4/15</td>
<td>1000</td>
<td></td>
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<tr>
<td>4/30</td>
<td>1000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5/15</td>
<td>1000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5/30</td>
<td>1500</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6/15</td>
<td>1500</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7/1</td>
<td></td>
<td>-59</td>
<td></td>
</tr>
</tbody>
</table>

TOTAL = 5200

Description of Test Area

Please describe, in detail, the test area, giving type of surface, kind, size, etc:

Confinement, 8" concrete slats, 3/4" slots,
8' x 20' pen, automatic waterer, self-feeder.

Validation of Test Records

I hereby certify that the feed records, test area description and parentage information given on this data sheet are correct. The test group was full-fed a 17% protein grower-developer ration, and a 16% protein finishing ration.

Signature of owner: John Q. Doe
Date: Sept. 1, 1977

Sample of ISEP Form 6.