Tracking feed usage is an important part of record keeping. Feed costs are typically 2/3 or more of the total cost of producing pigs, so even a small change in feed costs can affect profitability. Without accurate feed records, it is impossible to evaluate diet changes that result in a lower cost diet but may affect pig growth. Leaflet number 370 of this handbook provides example pig diets. For the following examples, diets will be summarized and feeding phases will be simplified.

### Table 1. Reference diets for pigs.

<table>
<thead>
<tr>
<th>% Corn</th>
<th>% Soybean meal</th>
<th>% Base mix</th>
<th>Phase Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>65</td>
<td>32</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>77</td>
<td>21</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>85</td>
<td>13</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

Adapted from Life Cycle Swine Nutrition, 1996.

For these examples the following production assumptions are made:

- Sows farrow 2 litters of pigs per year.
- Lactation length is 42 days.
- Each sow produces 18 weaned pigs per year.
- Average pig weight at weaning is 40 lb.
- Pigs are sold at 270 lb live weight.
- Gestating sows receive 5 lb of feed per day.
- Lactating sows average 16 lb of feed per day.
- Sows maintain a constant body weight.
- Phase 1 pigs have a feed conversion of 2:1.
- Phase 2 pigs have a feed conversion of 2.5:1.
- Phase 3 pigs have a feed conversion of 3.5:1.

### Feed Budget to Produce 18 weaned pigs

#### Gestation Feed

\[
365 \text{ days/yr} - (2 \text{ lactations} \times 42 \text{ days/lactation}) = 281 \text{ days}
\]

\[
281 \text{ days} \times 5 \text{ lb/day} = \boxed{1405 \text{ lb gestation diet}}
\]

1405 lb gestation diet \times 86\% corn = 1208 lb corn

1405 lb gestation diet \times 10\% SBM = 141 lb SBM

1405 lb gestation diet \times 4\% base mix = 56 lb base mix
Lactation Feed
2 lactations/yr × 42 days/lactation = 84 days
84 day × 16 lb/day = 1344 lb lactation diet
1344 lb lactation diet × 69% corn = 928 lb corn
1344 lb lactation diet × 28% SBM = 376 lb SBM
1344 lb lactation diet × 3% base mix = 40 lb base mix

Table 2. Feed to produce 18 weaned pigs.

<table>
<thead>
<tr>
<th></th>
<th>Gestation</th>
<th>Lactation</th>
<th>Total</th>
<th>Per Pig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corn, lb</td>
<td>1208</td>
<td>928</td>
<td>2136</td>
<td>119</td>
</tr>
<tr>
<td>Soybean meal, lb</td>
<td>141</td>
<td>376</td>
<td>517</td>
<td>29</td>
</tr>
<tr>
<td>Base mix, lb</td>
<td>56</td>
<td>40</td>
<td>96</td>
<td>5</td>
</tr>
<tr>
<td>Total, lb</td>
<td>1405</td>
<td>1344</td>
<td>2749</td>
<td>153</td>
</tr>
</tbody>
</table>

Each pig weighs 40 lb, thus the whole herd feed conversion for producing weaned pigs in this example is:

\[153 \text{ lb feed} + 40 \text{ lb gain} = 3.85\]

Feed budget to raise 1 pig from 40 lbs to 270 lbs

Phase 1

80 lb end wt - 40 lb start wt = 40 lb gain

\[40 \text{ lb gain} × \frac{2 \text{ lb feed}}{1 \text{ lb gain}} = 80 \text{ lb Phase 1 feed}\]

80 lb P1 feed × 65% corn = 52 lb corn
80 lb P1 feed × 32% SBM = 26 lb SBM
80 lb P1 feed × 3% base mix = 2 lb base mix

Phase 2

160 lb end wt - 80 lb start wt = 80 lb gain

\[80 \text{ lb gain} × \frac{2.5 \text{ lb feed}}{1 \text{ lb gain}} = 200 \text{ lb Phase 2 feed}\]

200 lb P2 feed × 77% corn = 154 lb corn
200 lb P2 feed × 21% SBM = 42 lb SBM
200 lb P2 feed × 2% base mix = 4 lb base mix
Phase 3
270 lb end wt = 160 lb start wt = 110 lb gain

110 lb gain \times \frac{3.5 \text{ lb feed}}{1 \text{ lb gain}} = 385 \text{ lb Phase 3 feed}

385 lb P3 feed \times 85\% \text{ corn} = 327 lb \text{ corn}
385 lb P3 feed \times 13\% \text{ SBM} = 50 lb \text{ SBM}
385 lb P3 feed \times 2\% \text{ base mix} = 8 lb \text{ base mix}

Table 3. Feed to feed 1 pig from 40 lbs to 270 lbs.

<table>
<thead>
<tr>
<th></th>
<th>P1</th>
<th>P2</th>
<th>P3</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corn, lb</td>
<td>52</td>
<td>154</td>
<td>327</td>
<td>533</td>
</tr>
<tr>
<td>Soybean meal, lb</td>
<td>26</td>
<td>42</td>
<td>50</td>
<td>118</td>
</tr>
<tr>
<td>Base mix, lb</td>
<td>2</td>
<td>4</td>
<td>8</td>
<td>14</td>
</tr>
<tr>
<td>Total, lb</td>
<td>80</td>
<td>200</td>
<td>385</td>
<td>665</td>
</tr>
</tbody>
</table>

Thus the feed conversion ratio for 230 lb of gain in this example is:

\[
\frac{665 \text{ lb of feed}}{230 \text{ lb gain}} = 2.89
\]

Feed budget for 1 pig farrow-to-finish
This can be calculated by combining the feed budget for weaned pigs and growing pigs.

Table 4. Feed budget for 1 pig farrow-to-finish.

<table>
<thead>
<tr>
<th></th>
<th>Sow Feed</th>
<th>Pig Feed</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corn, lb</td>
<td>119</td>
<td>533</td>
<td>652</td>
</tr>
<tr>
<td>Soybean meal, lb</td>
<td>29</td>
<td>118</td>
<td>147</td>
</tr>
<tr>
<td>Base mix, lb</td>
<td>5</td>
<td>14</td>
<td>19</td>
</tr>
<tr>
<td>Total, lb</td>
<td>153</td>
<td>665</td>
<td>818</td>
</tr>
</tbody>
</table>

In this example we assumed a 270 lb weight gain, thus the feed conversion ratio for the entire farrow-to-finish operation is:

\[
\frac{818 \text{ lb feed}}{270 \text{ lb gain}} = 3.03
\]

The above examples show how feed budgets can be generated and feed conversion calculated. It should be noted that the above are idealized examples. Actual production records show that feed conversion for the best niche herds is closer to 3.3 and others are considerably greater.
Additional Resources