QUALITY FORAGE

A Wisconsin Dairyman’s Perspective

ECONOMIC FACTORS

• Cost of shrink loss
• Cost of ration
• Cost of chopping
• Cost of larger feed pad

SHRINK LOSS

• Silage price range $20-$70
• Shrink range 5%-25%
<table>
<thead>
<tr>
<th>Column</th>
<th>20/ton</th>
<th>30/ton</th>
<th>40/ton</th>
<th>50/ton</th>
<th>60/ton</th>
<th>70/ton</th>
</tr>
</thead>
<tbody>
<tr>
<td>5%</td>
<td>$30,000</td>
<td>$45,000</td>
<td>$60,000</td>
<td>$75,000</td>
<td>$90,000</td>
<td>$105,000</td>
</tr>
<tr>
<td>10%</td>
<td>$60,000</td>
<td>$90,000</td>
<td>$120,000</td>
<td>$150,000</td>
<td>$180,000</td>
<td>$210,000</td>
</tr>
<tr>
<td>15%</td>
<td>$90,000</td>
<td>$135,000</td>
<td>$180,000</td>
<td>$225,000</td>
<td>$270,000</td>
<td>$315,000</td>
</tr>
<tr>
<td>20%</td>
<td>$120,000</td>
<td>$180,000</td>
<td>$240,000</td>
<td>$300,000</td>
<td>$360,000</td>
<td>$420,000</td>
</tr>
<tr>
<td>25%</td>
<td>$150,000</td>
<td>$225,000</td>
<td>$300,000</td>
<td>$375,000</td>
<td>$450,000</td>
<td>$525,000</td>
</tr>
</tbody>
</table>

*NOTE: $20/ton reduction in rolled corn price nets $79,478.75/HERD/YEAR*

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COST OF RATION

• High Quality Silage
  — Starch 37.2%
• Low Quality Silage
  — Starch 21.6%
• Medium Quality Silage
  — Starch 30.3%

COMPARISON OF HIGH, MED AND LOW QUALITY SILAGE

CORN SILAGE - $67/TON
ROLLED CORN - $288/TON
DAIRY HAY - $280/TON

<table>
<thead>
<tr>
<th></th>
<th>Slg</th>
<th># Rolled Corn</th>
<th># Dairy Hay</th>
<th>$/cow/day</th>
<th>$/cow/yr</th>
<th>$/herd/yr</th>
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</thead>
<tbody>
<tr>
<td>High</td>
<td>16.80</td>
<td>3.5</td>
<td>2.5</td>
<td>7.35</td>
<td>9,682.75</td>
<td>8,048,250</td>
</tr>
<tr>
<td>Med</td>
<td>13.02</td>
<td>7.4</td>
<td>2.5</td>
<td>7.64</td>
<td>9,788.60</td>
<td>8,365,800</td>
</tr>
<tr>
<td>Low</td>
<td>11.00</td>
<td>9.2</td>
<td>3.9</td>
<td>7.81</td>
<td>9,859.65</td>
<td>8,551,950</td>
</tr>
</tbody>
</table>

NOTE: $20/TON REDUCTION IN ROLLED CORN PRICE NETS $79,478.75/HERD/YEAR

COST OF PRODUCTION LOSS

• Milk Price range $12/cwt-$20/cwt
• Production Loss 0-15#
VARIABILITY IN CORN SILAGE QUALITY
CA 2012 SAMPLING

| Week | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
|------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Milk/ton | 39.6 | 34.0 | 36.9 | 42.9 | 36.1 | 30.7 | 35.4 | 38.3 | 45.2 | 26.2 | 30.1 | 37.6 | 41.2 | 32.8 | 34.4 | 37.2 | 40.8 | 37.0 | 33.2 | 35.2 | 36.1 | 38.4 | 39.0 | 36.8 | 35.1 | 34.2 | 36.4 | 38.5 | 39.7 | 42.0 | 42.2 | 42.7 |

3000 COWS MILKING
ANNUAL LOST MILK INCOME POTENTIAL

<table>
<thead>
<tr>
<th>$/cwt</th>
<th>$12</th>
<th>$14</th>
<th>$16</th>
<th>$18</th>
<th>$20</th>
</tr>
</thead>
<tbody>
<tr>
<td>0# loss</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>1# loss</td>
<td>$109,500</td>
<td>$127,750</td>
<td>$146,000</td>
<td>$164,250</td>
<td>$182,500</td>
</tr>
<tr>
<td>2# loss</td>
<td>$219,000</td>
<td>$255,500</td>
<td>$292,000</td>
<td>$328,500</td>
<td>$365,000</td>
</tr>
<tr>
<td>3# loss</td>
<td>$328,500</td>
<td>$383,350</td>
<td>$438,000</td>
<td>$492,750</td>
<td>$547,500</td>
</tr>
<tr>
<td>4# loss</td>
<td>$438,000</td>
<td>$511,000</td>
<td>$584,000</td>
<td>$657,000</td>
<td>$730,000</td>
</tr>
<tr>
<td>5# loss</td>
<td>$547,500</td>
<td>$630,750</td>
<td>$713,000</td>
<td>$795,250</td>
<td>$877,500</td>
</tr>
<tr>
<td>6# loss</td>
<td>$657,000</td>
<td>$766,500</td>
<td>$876,000</td>
<td>$985,500</td>
<td>$1,095,000</td>
</tr>
</tbody>
</table>

NOTE: $20/TON REDUCTION IN ROLLED CORN PRICE NETS $79,478.75/HERD/YEAR
PLANTING FACTORS
- Variety
  - Digestibility
  - Conventional vs BMR
- Maturity
- Density
  - High density yields lower digestibility
  - We use 30,000 to 32,000
  - Avoid narrow rows
  - Conflict of corn grower and dairy

HARVESTING FACTORS
- Pre-harvest meeting
- Chop length
- Processing
- Innoculant
- Monitoring

PRE-HARVEST MEETING
- Dairyman
- Operations manager
- Custom operator
- Nutritionist
- Crop advisor
- Scale-house attendant
CHOPPING GUIDELINES

- Chop length
  - Conventional 5/8-3/4 inch (17-19 mm)
- Processing
  - 1-3 mm plus monitoring
- Innoculant

MONITORING

- DM % - scale-house
  - 33-35%
  - Half milk line
- Nutritionist (2x/harvest)
- “Silage cam”??
- Analysis
  - Starch >32%
  - Digestibility (30hr) >54%
PACKING FACTORS

- Tonnage of Iron
  - 2 units/chopper
- Push and pack non-stop
  - 2 directions
- Shape
  - 3:1 slope
  - No higher than extended pay-loader bucket
- Density
  - 15 #DM/cu ft top 3 feet
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STORING FACTORS

- When to cover
- How to cover
- Who will cover

WHEN TO COVER

- Immediately after packing
- Progressive
  - Daily?
HOW TO COVER

- Large rolls
- 2 layers of plastic
- 4’ overlap
- Tire to tire
  - If tires slide, pile is too steep!
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WHO TO COVER

• Off-duty labor
• Pay cash

FEED OUT FACTORS

• Uncover protocol - 2x weekly
• Pitch off as needed
• Face management
• Loose material protocol
• Safety
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