Calf Management Practices-Producer Surveys

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Why calves?

- Having healthy dairy replacements is critical to a farm’s overall profitability and sustainability
- 2012 Iowa Dairy Survey indicated that 40% of Iowa dairy farms will be making changes to calf facilities in the next 5 years
RME Grant Goals

– Assist producers in evaluating their current practices and potentially new calf housing and feeding systems
– Enhance management skills to operate these systems successfully
How are your pre-weaned calves housed?

A. Individual pens housed outside
B. Individual pens housed inside
C. Automated Group housing
D. Non-automated Group housing
Automatic Calf Feeders

• 20 producers responded
• Average installation-2.6 years old
• Herd average-367
  – Two operations utilized ACF for bull calves only
  – Average cost with software included: $17,301
  – Used price: $5,500
  – Monthly associated costs excluding MR: $55
  – Average building costs associated with ACF $66,643
ACF-Facility Management

- 47% used straw for bedding
- 10% did not use bedding as calves were housed on raised grated floor
- Other: Combination of straw, sawdust, and cornstalk bedding
- Average square feet of space per calf: 34 sq. ft.
- Calves per nipple station: 21 calves
Nesting score = 1

Legs entirely visible when lying down
Nesting score = 2

Legs partially visible when lying down
Nesting score = 3

Legs generally not visible when lying down
How would you rate your calves nesting score today?

A. Nesting Score=1
   (legs entirely visible when lying down)

B. Nesting Score=2
   (legs partially visible when lying down)

C. Nesting Score=3
   (legs generally not visible when lying down)
ACF-Timing of 1\textsuperscript{st} Colostrum Fed

78\% fed 1 gallon or more of colostrum at 1\textsuperscript{st} feeding
ACF-Colostrum Management

Colostrum Type Fed

- Occasionally fed Colostrum Replacer
- Always Fed Colostrum Replacer
- Pasteurized Colostrum
- Occasionally fed Frozen Colostrum
- Fresh Colostrum

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ACF-Colostrum Management

• 18% evaluated colostrum
  – Visually or Colostrometer

• 25% measured success of passive transfer
  – Refractometer or serum test
What type of colostrum is primarily fed? (check all that apply)

A. Fresh Colostrum
B. Frozen Colostrum
C. Pasteurized Colostrum
D. Colostrum Replacer
ACF-Feeding Management

• Calves averaged 4-6 meals per day
• Feeding programs varied depending on system and heifers or bulls being fed
  – 140-150 grams per liter and fed up to 10 liters per day
  – 2 weeks prior to weaning, liters fed backed down until they no longer received milk
ACF-Feeding Management

Non-pasteurized

Pasteurized wastemilk

25-28% Protein Milk Replacer

20-22% Protein Milk Replacer
ACF-Feeding Management

• Consumption at weaning age:
  – 73% 3-5 pounds
  – 13% 5 pounds or greater
ACF-Labor Management

- Average time feeding calves
  - Feeding, monitoring, vaccinating dehorning, bedding, sanitation
  - 2.2 hours per day
- Labor time managing calves before moving into ACF
  - 1 hour per day

Who’s feeding calves?
ACF-Labor Management

• No labor time was saved; time is more flexible
• Physical labor has been replaced with management time
• Others reported an average of 1.5 hours per day reduced labor
• Software usage: .44 hours
ACF-Health Management

• Key indicators to move calves to ACF:
  – Age
  – Health of calf
  – Consumption

• Main Indicators used on ACF software
  – Drinking speed
  – Daily consumption of milk

When are calves moved into ACF?
- At Birth: 22%
- 2-5 days old: 33%
- 7-14 days old: 45%
ACF-Health Management

- Mortality Rate: 3%
- Treatment for scour: 14%
- Treatment for respiratory: 14%
- 37% monitored
- Average Daily Gain
  - ADG from birth to weaning: 2.3 pounds
    - 8 week weaning age for heifers
    - 7 week weaning age for bulls
ACF-Health Management

- Vaccinations at birth
  - Rota Corona
  - Clostridium C&D
  - E.Coli
  - Inforce 3
  - Bovine Ecolizer C

- Few weeks of age
  - Johnes
  - ScourBoss4
  - Inforce 3

- At weaning
  - Presponse
  - Bovishield
  - Johnes
ACF-Health Management

• Dehorning
  – 50% paste within a week of age, before they are moved into group housing
  – Remainder are done in group pen with a burner prior to weaning or a few weeks after weaning.
Reasons for installing ACF

1. Labor efficiency
   – Focus more on management of calves rather than physical labor, flexibility of feeding schedule

2. Calf Health
   – Consistent, multiple feedings, temperature of milk always the same, increase space per calf, calf comfort

3. New Facility
   – Going to build anyway, needed more room, installed AMS for cows, and needed new project to challenge employees
Management factors needed for success of ACF

1. Cleanliness
   - Detail oriented employees closely monitoring and cleaning of the lines, nipples, circuit, and cleanliness of calves

2. Ventilation
   - Facility is designed with air quality being a key component of the system

3. Management/Software
   - Software is invaluable, pays for itself, and worth the cost to catch calves earlier; watching calves is still important
ACF Challenges

• Learning the software and ID system
• Developing a feeding plan to control behavioral issues
• Keeping system clean
• Compatibility issues with ACF and pasteurizer
• Respiratory and ventilation were main challenges moving to group housing system
ACF Summary

• Producers showed success in switching from previous calf feeding system
• Labor was not always reduced, labor efficiency was improved
• Learning curves for software technology and facility management
• Added value to quality of life
Pasteurizer feeding systems

- 20 producers responded
- Average installation was 4 years old
- Herd average was 307 cows
- Average costs: $8,329
- Additional costs associated purchase of pasteurizer: $3,370
What type of milk is fed to pre-weaned calves?
(check primary choice)

A. 20-22% protein MR
B. 22-24% protein MR
C. >24% protein MR
D. Pasteurized wastemilk
E. Non-pasteurized wastemilk
Facility Management

• 58% house calves in huts outside
• 42% house calves inside
• Average square feet per calf: 29 sq ft.
Pasteurizer Management

• Temperatures and Times varied depending on the system
  – 140 – 161 degrees F
    • 30 – 60 minutes

• 30% pasteurized colostrum
  – 130 – 146 degrees F
    • 30 – 60 minutes
Timing of 1st Colostrum Fed

55% fed 1 gallon of colostrum at 1st feeding
Colostrum Management

Colostrum Type Fed

- Pasteurized Colostrum
- Occasional Commercial Replacer
- Occasional Frozen Colostrum
- Fresh Colostrum

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Colostrum Management

• 25% evaluated colostrum visually or with colostrometer or refractometer
• 10% have measured success of passive transfer with a refractometer or serum test
Feeding Management

Quarts Fed per Day

- 3 quarts
- 4 quarts
- 6 quarts
- 8 quarts

29% 12% 6% 53%
Feeding Management

• Pasteurized milk in short supply
  – Milk replacer balancer was used
  – Older calves were fed a milk replacer
  – Saleable milk used or high SCC cow were pulled out
Calf Starter Management

- 55% had calves eating 3-5 lbs
- 30% calves eating greater than 5 lbs.
Water Offered

Water Offered Free-Choice

- 55% Day 0-3
- 20% Day 3-10
- 20% Day 13-21
- 5% Greater than 21 days
Importance of Water

- Water intake is critical for proper rumen development

<table>
<thead>
<tr>
<th></th>
<th>Water</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Free Choice</td>
</tr>
<tr>
<td>Daily Gain</td>
<td>.68</td>
</tr>
<tr>
<td>Calf Starter Intake, lbs</td>
<td>26</td>
</tr>
<tr>
<td>Scour Days per Calf</td>
<td>4.5</td>
</tr>
</tbody>
</table>

1984. JDS 67:2964-2969

*Calves need 1 to 1.5 gallons of water daily per 100 lbs of bodyweight*
Labor Management

- 2.8 hours per day
  - monitoring, vaccinating, dehorning, bedding, and sanitation
- 1.1 hours per day
  - feeding, managing, and caring for calves transitioning to pasteurized milk

Who's feeding calves?
Health Management

- Average mortality rate: 2%
- Morbidity (scours): 9%
- Morbidity (respiratory): 6%
Health Management

• 42% monitored ADG
  – Average daily gain: 1.8 pounds per day
  – Weaning age: 53 days
Challenges with Pasteurizer

• Consistent feeding with varying waste milk volume
• Milk quality going into the machine
• Pasteurizer turned on
• Motor bearings and repair
• Cooling issues due to faulty water hose
• Temperature issues causing milk to curdle
Reasons for installing a pasteurizer

1. Economic savings
   - Savings on milk replacer

2. Calf Health/Disease Control
   - Reduce disease transfer such as Johnes, overall herd health, less morbidity and mortality

3. Utilization of waste milk
   - Have the milk and currently throwing it away
Management factors for success of pasteurizer system

1. Cleanliness
   - Closely monitoring and cleaning of pasteurizer and collection equipment

2. Management
   - Attention to detail, colostrum management, proper operation, consistent

3. Temperature
   - Monitoring of time and temperature, consistent feeding temperature to calf
Summary

- Survey showed success in switching from previous calf feeding systems to pasteurized milk feeding system
- Economic savings were noted
- Achieved calf health and growth
- Management factors important to overall success
## Comparison of Feeding Systems

<table>
<thead>
<tr>
<th></th>
<th>Automatic Calf Feeder</th>
<th>Pasteurization System</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Colostrum (0-2 hrs)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• 5 AM - 11 AM</td>
<td>72%</td>
<td>57%</td>
</tr>
<tr>
<td>• 11 AM - 5 PM</td>
<td>83%</td>
<td>57%</td>
</tr>
<tr>
<td>• 11 PM – 5 AM</td>
<td>5%</td>
<td>14%</td>
</tr>
<tr>
<td><strong>Gallon of Colostrum (1st)</strong></td>
<td>78%</td>
<td>55%</td>
</tr>
<tr>
<td><strong>Average square feet per calf</strong></td>
<td>34 sq ft.</td>
<td>29 sq ft.</td>
</tr>
<tr>
<td><strong>Consuming more than 5# calf starter at weaning age</strong></td>
<td>13%</td>
<td>30%</td>
</tr>
<tr>
<td><strong>Average Daily Gain</strong></td>
<td>2.3# ADG</td>
<td>1.8# ADG</td>
</tr>
<tr>
<td><strong>Mortality</strong></td>
<td>3%</td>
<td>2%</td>
</tr>
<tr>
<td><strong>Morbidity (Scours)</strong></td>
<td>14%</td>
<td>9%</td>
</tr>
<tr>
<td><strong>Morbidity (Respiratory)</strong></td>
<td>14%</td>
<td>6%</td>
</tr>
<tr>
<td><strong>Weaning Age (heifers)</strong></td>
<td>56 days</td>
<td>53 days</td>
</tr>
<tr>
<td><strong>Labor (transition prior to system)</strong></td>
<td>2.2 hours</td>
<td>2.8 hours</td>
</tr>
<tr>
<td><strong>Labor (in system)</strong></td>
<td>1 hour</td>
<td>1.1 hour</td>
</tr>
</tbody>
</table>
What are your future plans for pre-weaned calves?
(check all that apply)

A. Improve ventilation
B. Move calves to a group housing system
C. Move calves to an inside facility with individual pens
D. Increase protein content in milk replacer
E. Buy a pasteurizer
F. No future plans
# 2014 On-Farm Calf Feeding Workshops

<table>
<thead>
<tr>
<th>When</th>
<th>Host</th>
<th>Location</th>
<th>Topics</th>
</tr>
</thead>
<tbody>
<tr>
<td>February 10 Monday</td>
<td>Kevin &amp; Gayleen Moellers</td>
<td>From Ridgeway, take Hwy 9 west for 2 miles, then turn right onto 310th Street, drive 2 miles and calf barn is on the left.</td>
<td>GEA Auto-feeders utilizing pasteurized milk in a cross-ventilated facility.</td>
</tr>
<tr>
<td>10:30-11:30 am</td>
<td>Ridgeway, IA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>February 10 Monday</td>
<td>Paul &amp; Jody Stempflie</td>
<td>From West Union, follow Hwy 150 South for 13 miles, then turn right onto 100th Street/Hwy 150 for 5.7 miles, farm is on the left.</td>
<td>New individual stall calf barn utilizing a Milk Taxi for transport and pasteurization of milk.</td>
</tr>
<tr>
<td>1:30-2:30 pm</td>
<td>Maynard, IA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>February 11 Tuesday</td>
<td>Pattison Dairy</td>
<td>From Postville, follow US 52/US 18 east 15 miles, then turn right onto Hwy 52 for 6.9 miles, farm is on the right.</td>
<td>GEA Auto-feeders utilizing pasteurized milk in a hoop building.</td>
</tr>
<tr>
<td>10:30-11:30 am</td>
<td>Garnavillo, IA</td>
<td></td>
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<tr>
<td>February 11 Tuesday</td>
<td>Gibbs Dairy</td>
<td>From Hwy 18, Monona, turn north on CR-X26/Falcon Avenue for 11 miles, then turn right onto IA-76 for 1.4 miles, turn left onto Waterville Rd/CR-X32 for 3.7 miles, then left onto Main St/Waterville Rd for 2.6 miles, and right onto Gronna Drive for 0.6 mile, farm will be on the left.</td>
<td>DeLaval auto-feeders in a cross-ventilated facility.</td>
</tr>
<tr>
<td>1:30-2:30 pm</td>
<td>Waterville, IA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10:30-11:30 am</td>
<td>Anamosa, IA</td>
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<tr>
<td>February 17 Monday</td>
<td>Stoll Farms</td>
<td>Take Hwy 136 south of Cascade, 1.4 mi, turn right onto Ebys Mill Rd. go 3 miles on Ebys Mill Rd (Rd becomes Richland Rd for .7 miles) then returns to Ebys Mill Road.</td>
<td>Auto calf-feeder in remodeled facility.</td>
</tr>
<tr>
<td>1:30-2:30 pm</td>
<td>Cascade, IA</td>
<td></td>
<td></td>
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<tr>
<td>February 18 Tuesday</td>
<td>Strief Dairy</td>
<td>From Hwy 20 go south on East Pleasant Grove Road 3.5 miles, right (west) to 26250 Farm Lane Road.</td>
<td>Pasteurizer and auto-calf feeder in new facility.</td>
</tr>
<tr>
<td>10:30-11:30 am</td>
<td>Farley, IA</td>
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</tr>
<tr>
<td>February 18 Tuesday</td>
<td>Domeyer Dairy</td>
<td>From Main St. in Holy Cross, go left and head northwest on Thunder Road.</td>
<td>Auto-calf feeder in remodeled facility.</td>
</tr>
<tr>
<td>1:30-2:30 pm</td>
<td>Holy Cross, IA</td>
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