Natural ventilation design, auto feeder barn, recently expanded barn to add 2\textsuperscript{nd} feeder and separate weaned calves

Rusty Creek LLC
6 Generation Holsteins
LaPierre Family, Chazy, NY

Facility

Two barn sections, 6 total pens. Newest 2 pen section added 2012. Calves to 14-16 weeks. Started with One GEA autofeeder in a warm room w/2 pens; 2\textsuperscript{nd} AF online this October w/2 more pens. Plan to always have one empty pen, and All in All Out, which is a change from only 2 pens. Weaned calves are in two pack pens, now at new section of barn.

Colostrum Management

Checked with colostrometer for last year. 4 qts ‘green’ collected in Perfect Udder Bags, frozen or fresh fed 1-4 hrs. Not checked serum total proteins recently. Also First Defense, Inforce3, dehorned with paste, ear tagged.

Age at Introduction

Starting October 2012 w/ new feeder, calves start day 2-3. Was day 3 to 5, moving every Tuesday and Friday. Calves catch on very fast, much easier since we move in at 2 days old; sooner seems to be better.

Feeding System Components-
calves per pen

2 Westfalia GEA Milk replacer Auto feeders, 2 nipples each (Forster Technik). Each housed in warm room with sink. 1 nipple per pen. Up to 12 to 15 calves per pen* OR age spread up to 21 days, whichever comes first . *a change started Oct 1, 2012

Liquid Feed/Additives

23:22% Poulin Grain All milk Arctic blend Oct. on; 24:20 All Milk last summer. Probiotic- 14 grams per day for 10 days.

<table>
<thead>
<tr>
<th>Feeder Program (Settings: Days , Min , Max )</th>
<th>Quantity</th>
<th>Limitation</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>10</td>
<td>4.6 to 8 Liters</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>31</td>
<td>8.0 to 8</td>
<td>34</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>8.0 to 4</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>4.0 to 4</td>
<td></td>
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</tbody>
</table>

Pen Moves/Weaning

No pen moves until weaned. *a change started Oct 1, 2012
## Rusty Creek 6 Generation Holsteins, Chazy, NY

### Autofeeder pen
- **Mixing/Cleaning**: Wash outside of the feeders 3 times per week; Wash nipples daily
  - Triphan - Spray Nine
  - Waters cleaned daily

### Weaned calf pack pen
- **Resting Area**
  - **Space excluding feed alley**: 30 to 38* sq. ft. per calf, which is a recent change from 20 sq. ft. We added the second feeder and reduced number calves per pen. Our barn has a feeding alley along the feed manger not included in calculations. Feed alley cleaned daily.

### Bedding
- Sand base, sawdust on top. Since October 1, started using straw on top of shavings. Calves are much more comfortable and will be dryer and more insulated in cold weather.

### Jackets
- October to end April, first 4 weeks.

### Ventilation/Drafts
- **Barn is designed for natural ventilation. Satisfaction has been minimal.** Positive pressure ventilation tube installed April 2012.
- Believe drafts have been a problem and have been considering what changes to improve it.
- Hope, PPV tube, changed bottom curtains from rolling down to rolling up, bedding with straw Oct. 2012, and moving older weaned calves to their own section will help.

### Treatments
- Overall treatment rate has been too high, over 30% of calves. Have implemented several things in last 6 months to improve ventilation and comfort which should have positive impact.
  - Scours: Tx age tends to be 10-21 days of age.
  - Respiratory: Seasonal Oct-Dec, Mar-May, and higher than we would like. Tx age 10-21 days; relapses at weaning. Prevail, Zactran

### Weaning Strategy
- 8 day weaning, step down aggressively for 2 days by reducing volume 50%, same solids %. Keep 50% volume 6 days. Now, all calves moved out together once all weaned at 8-10 weeks.

### Dry feed
- High quality pelleted calf starter free choice, from day one, in feed trough inside pen, and also in full length feed manger w/ slant bars. Newborns get ‘taste’ of high quality hay for 2-3 wks.
<table>
<thead>
<tr>
<th><strong>One autofeeder stall of 4; 2 warm rooms</strong></th>
<th><strong>Autofeeder pen, manger, Nelson waterer</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Grain intake @ weaning</strong></td>
<td>1 ½ pounds of grain. Difficult to determine with the age range within the group</td>
</tr>
<tr>
<td><strong>Weights / Avg Daily Gain</strong></td>
<td>Weigh at birth and graduation to weaned pens. First with tape, now Way-Pig 15 scale. ADG 1.6 to 1.7 @ day x to x approximately.</td>
</tr>
</tbody>
</table>
| **Vaccinations (Cow & Calf)**               | Dry cows: J Vac, Clostridia, Bovishield  
Newborns: Inforce3 & First Defense; Vista Once at 14-16 wks of age |
| **Biggest Challenges**                      | Good Ventilation?  
Lower treatment rates. |
| **Changes to Make?**                        | Monitor the changes implemented in the past few months:  
- Fewer calves per pen  
- PPV tube  
- all in, all out  
- treatment rates  
- straw bedding  
- curtain change  
- milk replacer and % solids |
| **Recommend**                               | TO DO: get the ventilation right  
TO DO: ample space for “flush” calving’s  
TO DO: ALL in ALL out - work in progress here  
TO DO: Fresh Pen management  
TO DO: PPV Tube inside truss  
TO DO: Weaned pens w/ headlocks |