Case Study

Bovine Leucosis Virus Control in a Dairy Herd

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Motivation For Control

- Conscientious, caring veterinarian who discussed control measures on a periodic basis.
- Many instances of cows lost due to clinical lymphosarcoma.
- Problems with calf health that caused us to examine general calf rearing practices.
Real Reason!

✓ Leucosis positive superior cow with one bull calf ready to go to a bull stud, and numerous ET offspring expected, accompanied by more bull stud interest.
Leucosis Control Time Line

- 5/97-Tested brood cow positive and 11 month old bull calf negative
- 5/97-Discussed BLV control and instituted control measures
- 5/98-Sold 2 more negative bull calves
- 8/98-Began regular monthly testing of dry cows and springers
Former NYS 3 Disease Program Vs. This Herd

- All animals >6 months tested every 4-6 months
- Remove calves from positive dams after 24 hours
- No testing first 14 months. Test unknown or previously negative animals prior to calving
- Freeze high quality colostrum from negative dams. If safe colostrum unavailable, use powdered colostrum “replacer”
Herd additions must be BLV negative

Sterile, single use needles only

Single use obstetrical sleeves

Routine insect control

Handle herd additions as unknown

Same

Same

Same
Handle BLV animals first for all processing

Keep calves from positive dams in isolated hutches until tested negative

Disinfect blood-contaminated instruments between animals

Always use infection control precautions

No segregation of untested heifers attempted

Same. Emphasized eliminating all bloody dehorning
Use artificial insemination exclusively

Maintain separate loafing and maternity pens for positive and negative cows

Home raised, test-negative bulls occasionally used on heifers

No attempt to physically separate positive and negative animals
Avoid shows and fairs where positive cattle will be assembled.

Use negative embryo recipients.

Continued to exhibit cattle at shows and fairs.

Continued to use positive recipients.
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Assumed Prevalence

- No initial testing of whole herd
- Frequent export and sale testing with mature animals routinely positive
- Sporadic testing of ET dam and recipients routinely positive
- Guessing at 75-80% infected mature herd
Initial testing period 8/1/98 – 4/30/99

>2yrs: 28 positive (72%)  11 negative
(many older cows not tested and assumed positive, including those receiving oxytocin for milk letdown)

<3yrs: 9 positive (53%)  8 negative
Year beginning 5/99

50 animals tested: 20% pos  80% neg

30 animals >2yrs: 30% pos  70% neg

20 animals<3yrs:  5% pos    95% neg
Year beginning 5/00

- 45 animals tested: 9% pos 91% neg
- 22 animals > 2yrs: 18% pos 82% neg
- 23 animals < 3yrs: 4.3% pos 95.7% neg
Period beginning 5/01

51 animals tested: 9.8% pos 90.2% neg

28 animals >2 yrs: 11% pos 89% neg

23 animals <3 yrs: 8.7% pos 91.3% neg
All Tested Cows*

*Previously Positive Cows Are Not Retested; Some Cows Never Tested
3 Years & Up, Tested Cows

![Bar chart showing percentage of positive and negative results over different periods.]

- **Positive**
  - First period: 70%
  - 5/99-4/00: 30%
  - 5/00-4/01: 90%
  - 5/01-1/02: 90%

- **Negative**
  - First period: 30%
  - 5/99-4/00: 70%
  - 5/00-4/01: 10%
  - 5/01-1/02: 10%
Under 3 Years Tested Cows

Cow #s: 9 8 1 19 1 22 2 21
Whole Herd Trends

<table>
<thead>
<tr>
<th>Year</th>
<th>#positive</th>
<th>#negative</th>
<th>#untested</th>
</tr>
</thead>
<tbody>
<tr>
<td>1997-est</td>
<td>80</td>
<td>50</td>
<td>10</td>
</tr>
<tr>
<td>8/98-4/99</td>
<td>50</td>
<td>30</td>
<td>20</td>
</tr>
<tr>
<td>2001-Feb</td>
<td>40</td>
<td>20</td>
<td>10</td>
</tr>
<tr>
<td>2002-Feb</td>
<td>50</td>
<td>30</td>
<td>10</td>
</tr>
</tbody>
</table>
New Infections

1. Vast, 2 year old  8/99  Seroconverted during summer
2. Fargo, 3 year old  12/99  ET recipient
3. Flintstone, 2 year old 9/00 With + dam >24 hrs
4. Twinkle, 3 year old  1/01  Oxytocin implicated
5. Jose, 4 year old 1/01  ET recipient
6. Chic, 2 year old  8/01  With + dam > 12 hrs
7. Candace, 4 year old  8/01
8. Crusty, 5 year old  9/01
9. Jolt, 2 year old  Show heifer injured in trailer
# Current Breakdown Of Herd – 2/02

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Negative</th>
<th>Positive</th>
<th>Untested</th>
</tr>
</thead>
<tbody>
<tr>
<td>74 cows 2 years and older</td>
<td>50</td>
<td>20</td>
<td>4</td>
</tr>
<tr>
<td>5 yrs+</td>
<td>6</td>
<td>12</td>
<td>1</td>
</tr>
<tr>
<td>4 yrs old</td>
<td>6</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>3 yrs old</td>
<td>19</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>2 yrs old</td>
<td>19</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

51 head of young stock which includes 6 bull calves, all untested

* 2/01 73 mature head  40 Negative  23 Positive  10 Untested
"Give it to me straight, Doc. Is what she has within my means?"
Cost Of Control Program On This Farm

- 206 ELISA Tests since 5/97
- Used chest freezer for banked colostrum
- “Lifeline” Colostrum Supplement for 1st 15 months – 2 bags per calf when used
- Many boxes of single use needles, syringes, OB sleeves, etc
- Disinfectant for common equipment
- PITA factor
Bulls From This Herd

1. Nobledale Adonis Vic – Gencor (Canada)
2. NDF VTS Barber Viking – Select Sires
3. NDF VTS Vitalis – Alta Genetics
4. Nobledale View Vendetta – ABS
5. Nobledale View Volante
6. Nobledale View Vigorous – Genex
7. Nobledale Avery Voltage – Select Sires
8. Nobledale Avery Valuebull – Central Valley AI
9. Nobledale Sambo Vertigo – Select Sires
10. Nobledale Henry Veto
11. Nobledale Fair Vanguard
12. Nobledale Freedom Velocity
13. Nobledale View Viagra – Taurus?

The positive dam to these bulls has at least 52 offspring.

5 negative heifer calves were also marketed from this cow family.
May be Worn on Either Arm

Buckle with Adjustable Strap

Attached Hood
Convenience!

- Single use needles must be readily available
- Needle disposal must be simple
- It must be easy to carry multiple vials of different products
- Everything must be kept out of reach of loose housed animals (and children)
Wear One Glove Underneath, With Fingers Removed

Plan for convenient sleeve disposal and supply of clean sleeves
Just Do It