Biosecurity for Dairy Farms: Controlling Access

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- Why & Introduction
- Seven Steps to Biosecurity
- How Are We Doing?
- Be Prepared!

We’ve long been concerned about ‘classical disease’
- Brucellosis, TB, Mastitis, ...

Now we’re wary of things beyond those diseases…
- Microbial Food Safety (Salmonella, E coli, ...)
- Chemical Residues (Antibiotics, Pesticides, ...)
- Unintentional & Intentional Contaminants

Luckily, techniques to control ‘classical’ diseases are applicable in dealing with the new dangers

Also, just because we recognize ‘new’ dangers does not mean the old ones have gone away!
## Biosecurity on Dairies: Introduction

Biosecurity Definition =
- Decreases chance agent enters farm;
- Decreases its ability to spread in a farm

Focuses, then, on risk factors that are manageable...
- Protect the herd
- Look at animal sources
- Introduction methods for new animals
- Minimize outsiders

## Biosecurity: Seven Steps

1. Closed Herd
2. Protect via Vaccination
3. Protect via Isolation
4. Source of Replacements
5. Test Purchased Cattle
6. Isolate New Cattle
7. Control Farm Traffic
Biosecurity: Step 1 - Keep a Closed Herd

No cattle enter the farm; no cattle come back to the farm
A herd is NOT CLOSED if...
- Animals go off-site & come back
- Herds share fence-lines or equip’t
- Other folk transport animals

Very difficult in these days of economic stresses that push a herd to grow

NAHMS ’96 – 1 in 5 dairies are closed; 44% brought in outside animals

Remember: LEGAL movement spread FMD in the UK...

Biosecurity: Step 2 - Protect via Vaccination

An essential component

NAHMS ’96 – Some give NO vacc’s to heifers (14%) or cows (19%)

Each farm (& program) is unique
When/how it’s done is important!
- Stress decreases response
- Manufacturers’ recommendations

NAHMS ’96 – 48% of dairies using killed vaccines did not follow recommendations
Biosecurity: Step 2 - Protect via Vaccination

Vaccine Inequalities

- 15 disease/classes...
  - 3/15 = none
  - 8/15 = probs
  - 4/15 = good

Problems ...
  - stop signs, not infection
  - confuse testing
  - limited host response

<table>
<thead>
<tr>
<th>Disease</th>
<th>Vaccine</th>
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</thead>
<tbody>
<tr>
<td>Bovine Leukosis</td>
<td>-</td>
</tr>
<tr>
<td>Bovine Spong Enceph</td>
<td>-</td>
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<tr>
<td>Bovine Vir Diarrhea</td>
<td>+</td>
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<tr>
<td>Brucellosis</td>
<td>+</td>
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<tr>
<td>Clostridia</td>
<td>+</td>
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<tr>
<td>E Coli, Rota/Corona</td>
<td>?</td>
</tr>
<tr>
<td>Foot &amp; Mouth</td>
<td>?</td>
</tr>
<tr>
<td>Hairy Heel Warts</td>
<td>?</td>
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<tr>
<td>Johne’s Disease</td>
<td>?</td>
</tr>
<tr>
<td>Leptospirosis</td>
<td>?</td>
</tr>
<tr>
<td>Mastitis, contagious</td>
<td>?</td>
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<tr>
<td>Mastitis, environ’tal</td>
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<tr>
<td>Mastitis, Mycoplasma</td>
<td>-</td>
</tr>
<tr>
<td>Respir, IBR/BRSV/PI3</td>
<td>+</td>
</tr>
<tr>
<td>Salmonellosis</td>
<td>?</td>
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</tbody>
</table>

Biosecurity: Step 3 - Protect via Isolation

Keep calves from heifers, heifers from cows~

*NAHMS ’96 – 1 in 3 farms allow calf contact with other cattle*

Keep people/equip’t/other animals from cattle

*NAHMS ’96 – 80-90% of dairies allow dogs/cats to contaminate cattle, water, or feed*

Limit wildlife contact/habitat (brush/hi grass; wildlife)

*NAHMS ’96 – 50% of dairies allow deer to contaminate cattle, water, or feed*

Don’t share feed, water, equip’t twixt ill & healthy

*NAHMS ’96 - 45% of farms have maternity stalls; 55% also use them for fresh/ill animals*
**Biosecurity: Step 4 - Source of Replacements**

**Bring in animals from herds with ...**
- **Known health status**
  - *It’s often better to get herd- vs indiv-tests*
- **Effective vaccine programs**
  - *Be sure they do it right!*

**Buy heifers**
- **Easier to isolate & get on program than cows**
  - *NAHMS ’96 - ~ 1 in 5 isolate heifers (avg 17+ days); 1 in 18 quarantine cows (avg 12 days)*

**Get Health info**
- **DHIA SCC’s; Mastitis; Herd tests**
  - *NAHMS ’96 - Half to 2/3’s use NO pre-purchase tests; 1 in 4 test milkers for mastitis*

**No mixed shipments**

**Transport in clean vehicles**

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**Biosecurity: Step 5 - Test New Cattle**

**Test Bought Cattle for ...**
- **Brucella & TB**
- **Mastitis (Staph aureus, Strep ag, Mycop)**
- **Heel Warts**
- **Others ??**

**Look into Herd Histories for ...**
- **Mastitis/Udder Health Problems**
- **BVD**
- **Bluetongue/Bovine Leukemia**
- **Johne’s**
- **Heel Warts**
- **Others ??**

**Need source herd history; Need to know market**
**Biosecurity : Step 6 - Isolate New Cattle**

- 15-30 day Quarantine!
- Separate from other cattle
  - Airspace?
  - Contact?
  - Shouldn’t share ...
    - Feeders
    - Waterers
    - Grooming
    - Lanes
- Medicated foot bath
- Good milking practices
- Check new animals’ body temp & attitude regularly
  - Call Vet if a problem
- Start your own vaccinations while in quarantine

**Biosecurity : Step 7 - Control Farm Traffic**

- Limit access (Fences, gates, locks, signs)
- Parking away from animal/parlor areas
- Sign-in & Sign-out all visitors
- Provide boots/coveralls; at least clean clothes
- All visitors use foot bath and brush; wash hands
- Minimize who contacts animals and where they live/travel
- Pick-ups or Drop-offs done without drivers/ handlers/ trucks exposing herd
- Use your own stuff (halters, ropes, wraps)
- Before using, clean items that left farm
Biosecurity : Step 7 - Farm Traffic (Risk Areas)

What are HIGH RISK AREAS to protect?

- Milking Parlor and Bulk Tank
  - *Think about New York*
- Calves
  - *Most susceptible group*
- Maternity Area
  - *Most stressed group*
- Feeds & Feeding Equipment
  - *Travel/"contact” all animals/areas*
- Wells and Waterers
  - *Contacts all animals/areas as feed/wash*
- Hospital Pens
  - *Stressed; easy to misrepresent*

Biosecurity : Step 7 - Farm Traffic (Risky Visitors)

Ranking the HIGH RISK VISITORS to most watch out for...

- **OTHER ANIMAL CONTACTS** (Vets, AI techs, Other producers, Cull/Dead trucks, Hoof Trimmers, …)
- **COMPLACENT PEOPLE** (Neighbors, Family, Workers, Delivery drivers, Service personnel, YOU, …)
- **DIFFICULT TO CONTROL** (Groups [schools/foreign?], Milk trucks, Feed trucks, Inspectors, Power company, …)
Biosecurity: How Are We Doing?

Does Biosecurity really make any difference in animal health?

NAHMS ’96 - The more animals a dairy buys from outside, the more it experiences disease (explains 16-100% of prevalence variation)

NAHMS ’96 - About four-fifths of studied disease classes (Mastitis, Lameness, Respiratory, Abortion) show decreased prevalences in closed herds (P<0.1)

Yes, it works

Biosecurity: Be Prepared!!!!!!!

Think now about getting plans & stuff available...

To Disinfect people @ ingress &/or egress;
Vehicle tire/undercarriage wash & decontamination
  Where? How? With what?

To Isolate Production Classes / Sections of farm
Physical, labor, equipment; Outsider Risk Ranks vs Area Protection-Need levels

To Identify High-ground / Safe places
Getting there, staying there

To Select On-Farm burial sites
Ground and water contamination

To Survive Multi-day Evacuation (hurricane, spill, accident, terrorism, …)
Prioritize needs, labor, feed, animal welfare
Biosecurity: Natural Threats Are Not the Only Worries

"...I openly hope that it (FMD) comes here. It will bring economic harm only for those who profit from giving people heart attacks and giving animals a concentration camp-like existence. It would be good for animals, good for human health and good for the environment..."

Ingrid Newkirk
PETA president
April 2001