



# A Changing Industry but...BVD Pls Continue to Cause Problems

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**API**

ANIMAL PROFILING INTERNATIONAL, INC

Philosophy of Products/Services

# “Management Over Medicine”



**API**  
ANIMAL PROFILING INTERNATIONAL INC

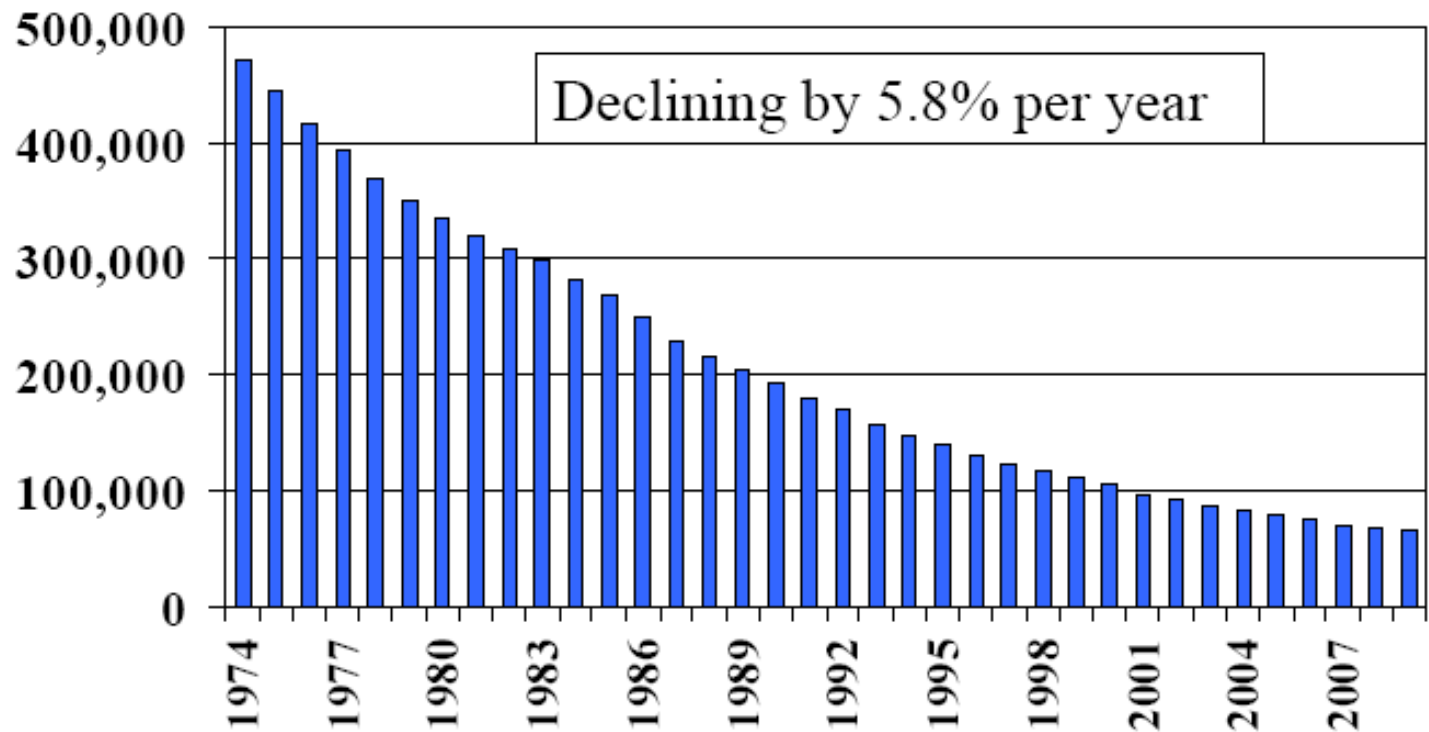
# What We Do

We provide the cattle industry new tools to improve profitability

- Quantitative/analytical testing
  - **BVD PI testing using RT-PCR screening and individual ELISA**
  - **Johne's and BLV ELISA**
- Animal identification systems
  - **Full and Half Duplex read only EID tags**
  - **Official USDA 840 tags**
  - **APIVerify – USDA Age/Source Verification**

# Is the Dairy Industry Changing?

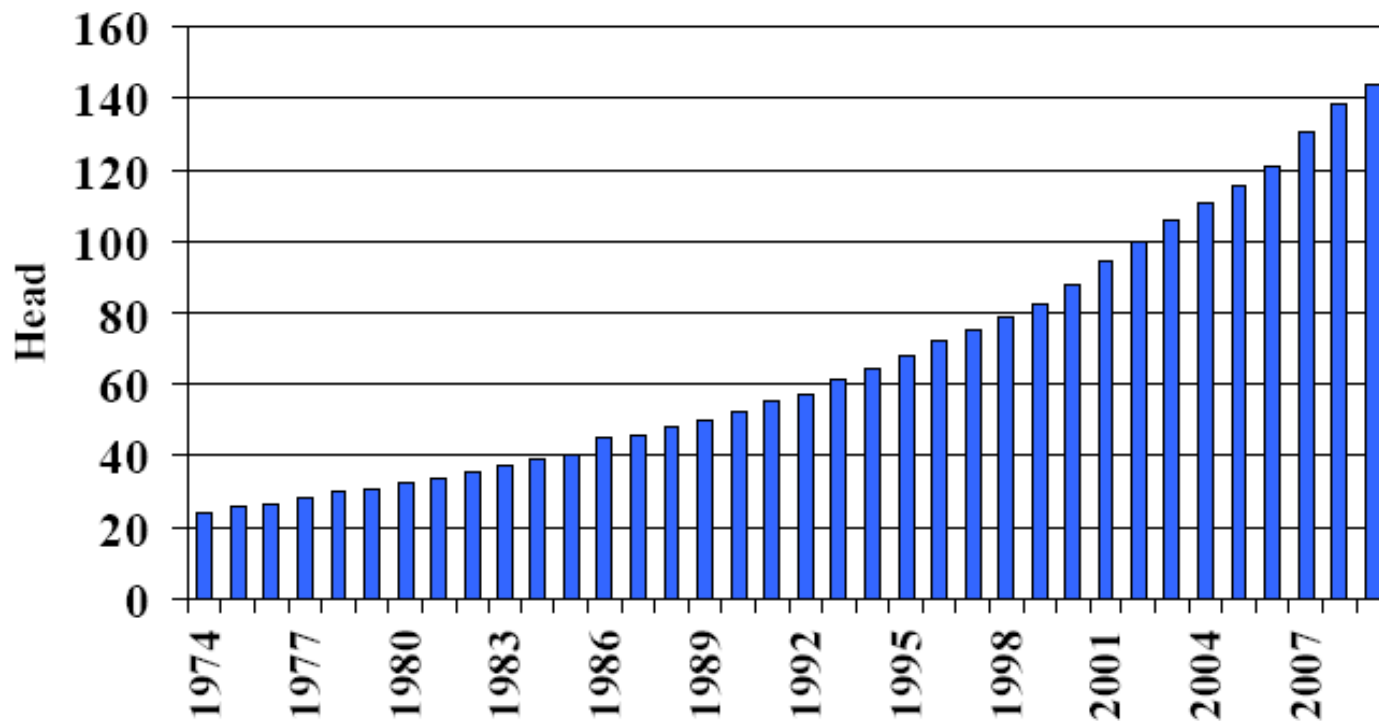
## U.S. Farms with Milk Cows



Source: USDA/NASS

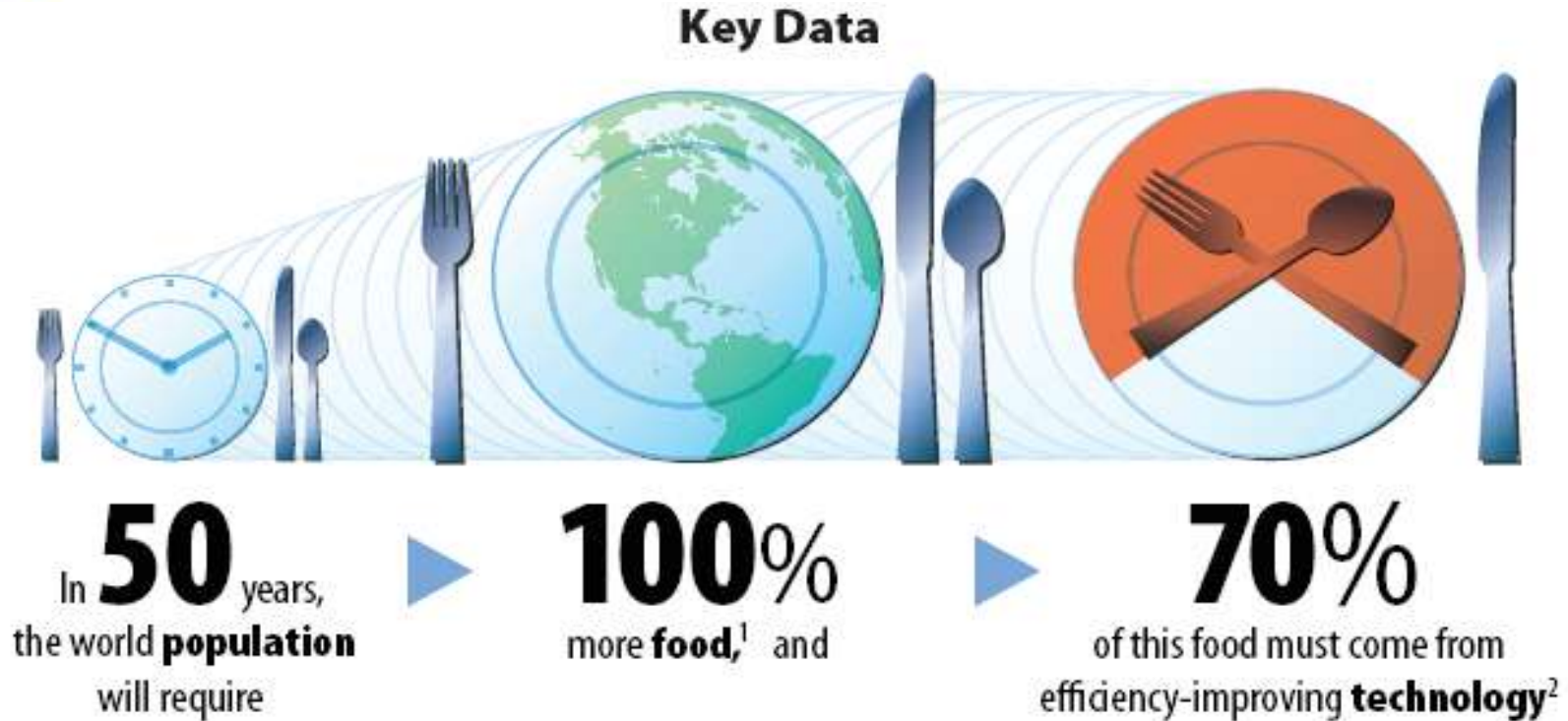
Number of large 2,000+ farms up 128 percent

## Milk Cows Per U.S. Dairy Farm



Source: USDA/NASS

# We Have a PURPOSE



**We each feed 155 people**

**Goal: Productivity and  
Sustainability**



# Creativity





# Efficiency



# Bovine Viral Diarrhea (BVD)

## Economics

- Estimated costs are as high as \$2.1 billion to U.S. cattle industry (Beef and Dairy)
- \$330-494 million in **lost milk production**
- \$1.93/cwt cost if 1 PI in 100 cow dairy herd
- \$20 - \$160 per cow per year

# Dairy PI Prevalence

- US Dairy Total  
(Animal Profiling  
International Data)
  - 2008 - .28%
  - 2009 - .22%
  - 2010 - .18%
  - 2011 - .30%



Bulk Tank Samples - 10.5% Dairies Positive

# Keys to controlling BVD

- **Understand “persistently infected” (PI) animals as they relate to BVD.**
- Find and Eliminate PI cattle in the herd and maintain a surveillance program.
- Proper vaccination needed but alone does not control
- Biosecurity (know what you are bringing on to the place!)

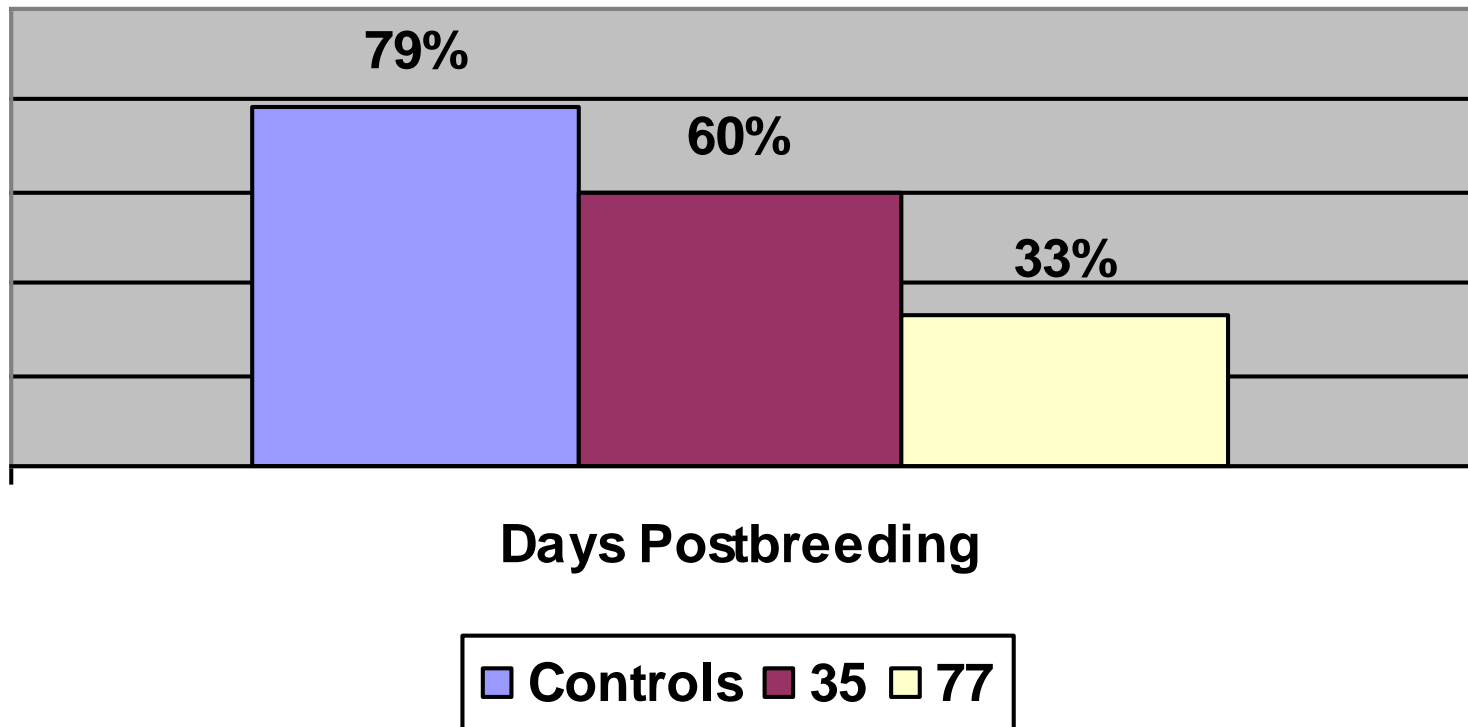
# What problems are associated with BVD?

- Sickness – most is sub-clinical
- Reproductive Losses
  - **Abortions**
  - **Repeat breeders**
  - Abnormal calves
- **Immune suppression**
  - **Allows other common diseases to be worse**
  - Calf grower – pneumonia and scours
  - Dairy - mastitis and pneumonia



# BVDV Impact on Early Embryonic Death

**Pregnancy % in Heifers exposed to a PI animal 4 days Post Breeding**





# Transmission of BVDv

- **Most common- close contact**
  - Virus shed in mucus, urine, saliva, tears, feces, milk
- **Less common-**
  - equipment
  - semen
  - ET (PI recips)





# What Is a PI?

- A PROBLEM
- The main reservoir for BVD virus infecting cattle
- Started at the dairy or heifer developer
  - Only created when calf is in the cow
  - Either born a PI or not...and can never change.

# What a PI is NOT?

- Always a poor doing calf



- Curable
  - A life long shedder of the BVD virus
  - Vaccine does not effect

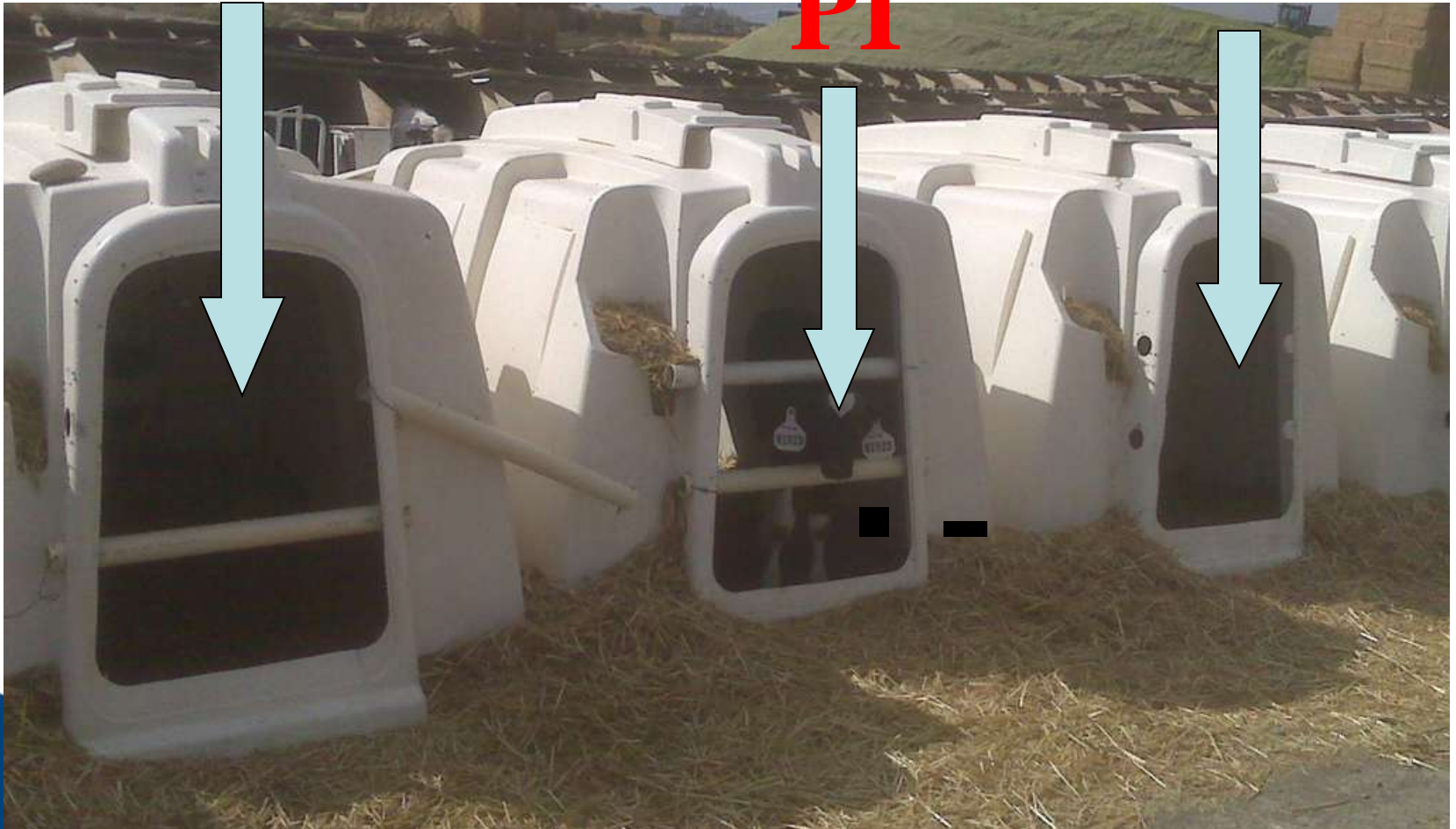
# Effects of a PI

Empty...died

Still Alive...

Empty...died

**PI**



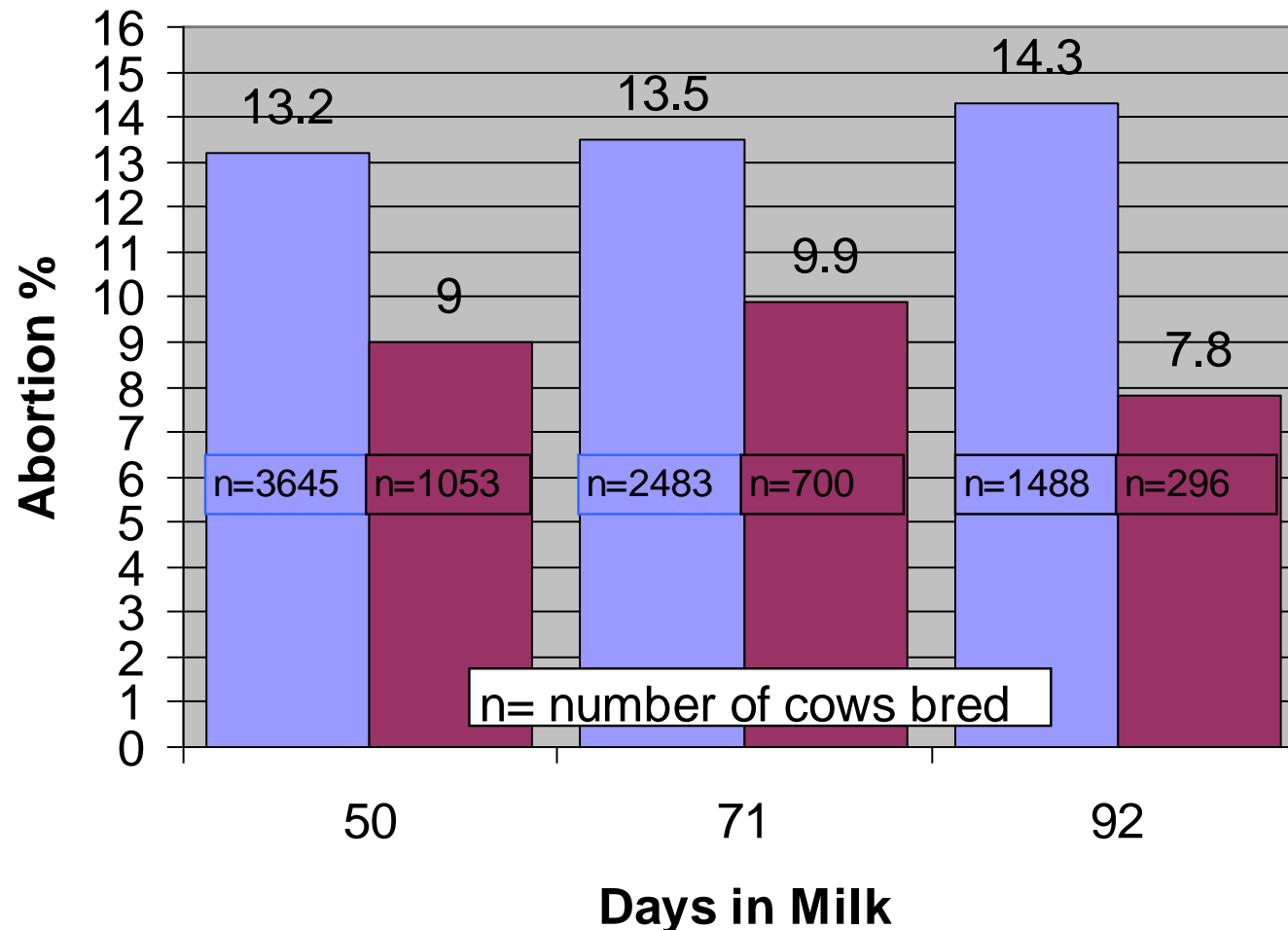
# Milking String

- Cow 3581
- RPRO : BRED RELV : 102 MILK : 75
- LACT : 2
- DIM : 117 LSIR : 11J819 DSLH : 27 SCC : 117
- 11/ 8/08 FRESH 1/21/09 BSTART
- 12/26/08 HEAT 2/ 6/09 BRED 11J819 37
- 1/ 6/09 MAST SPMRF



# 2009 California Dairy

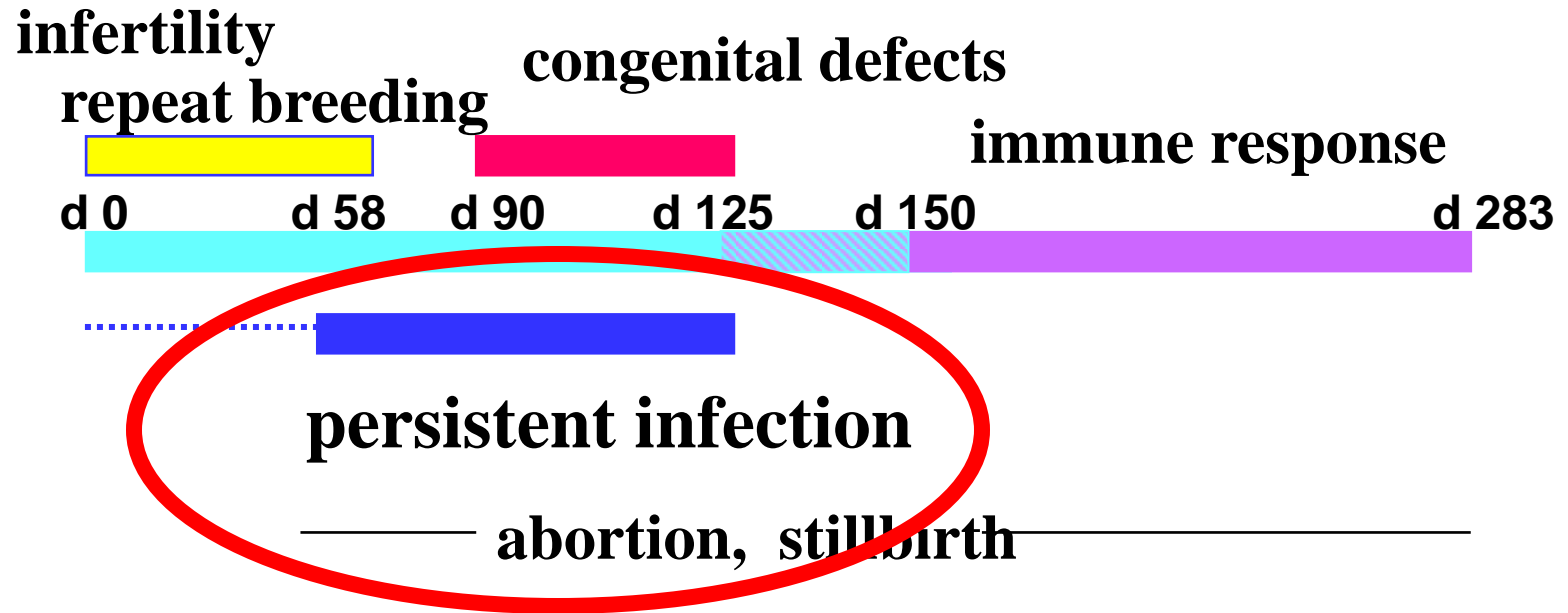
## Affects of BVD on abortion rate



■ Abort % Before Removing PI's ■ Abort % After Removing PI's

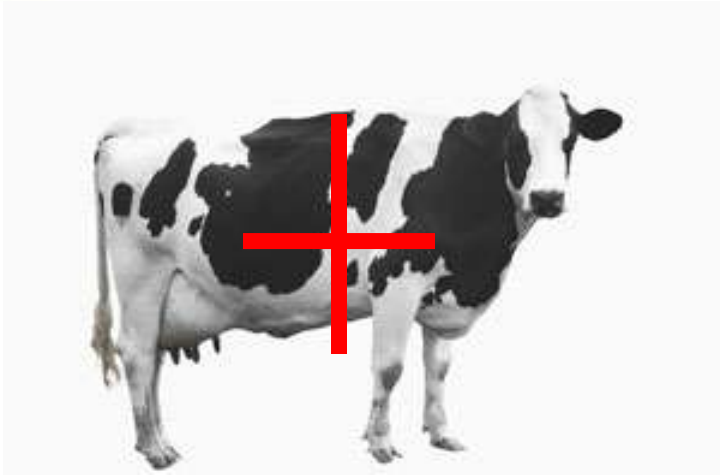


# BVD INFECTION DURING GESTATION

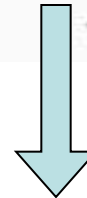
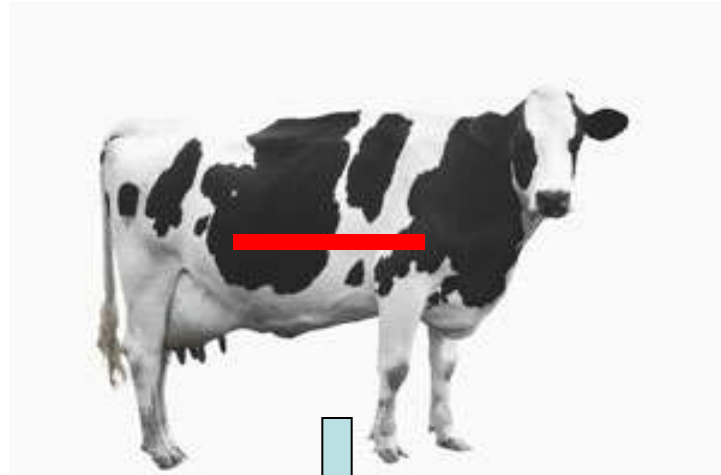
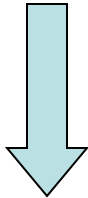


**1<sup>st</sup> Trimester 30-140 days**

# Which Cow Has a PI?



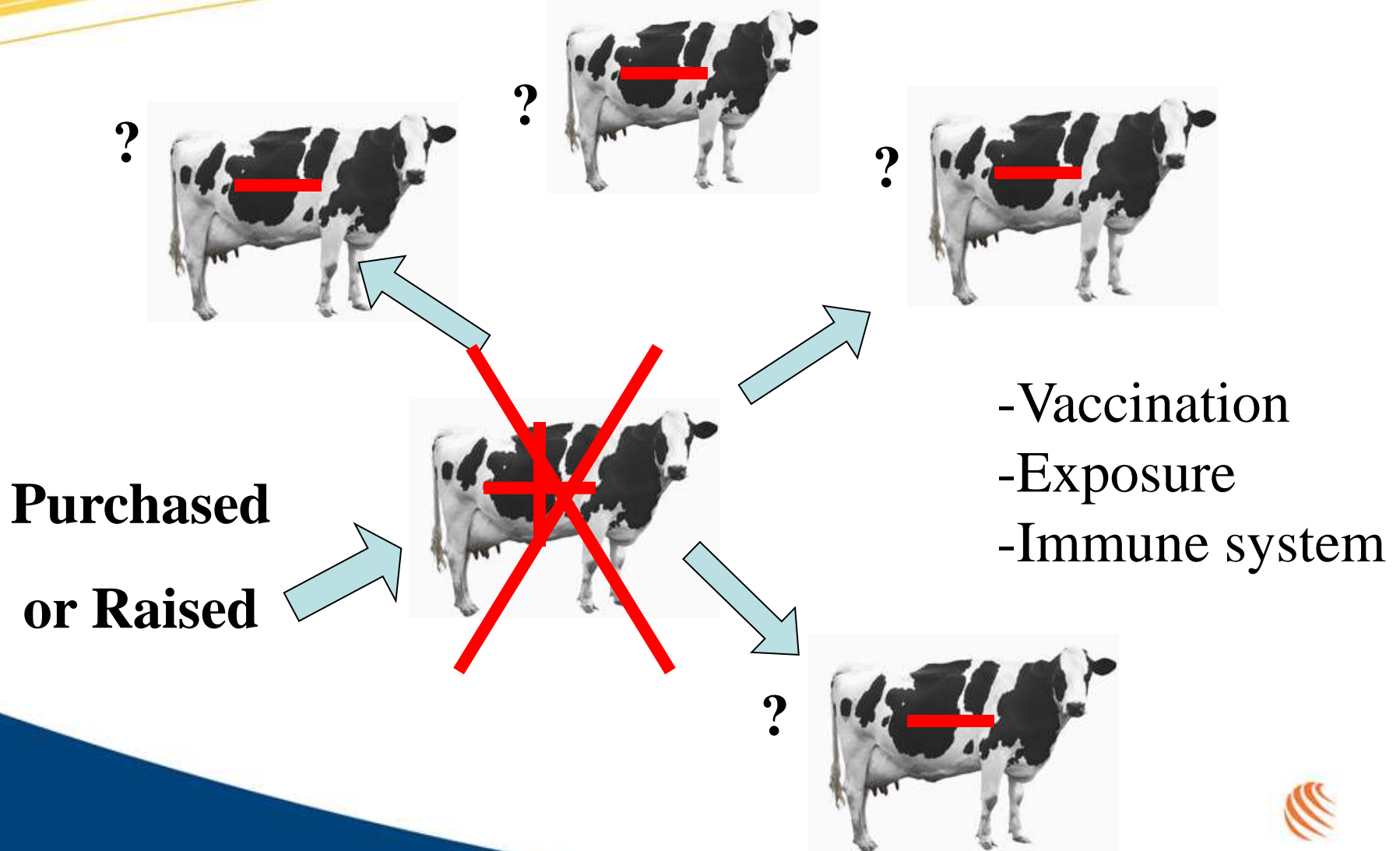
100%



~95% come from PI  
negative Dams



# PI Creation during breeding



# Why Test at the dairy?

KEEP PIs FROM CAUSING \$\$ LOSS

- Dairy

- Reproductive/sickness losses
- Stop any chance of decreased milk production

## HOW

- Work with BVD PI negative facility
- Ask if your heifer ranch tests all animals
- Only buy BVD PI negative animals
- Test calves if raising

# How To Start...What To Test

## *At the Dairy*

### *Make Sure The Milking Herd is Free of PIs*

1. Bulk/String Milk Tank Sample
  - Detects BVD virus in bulk/string milk
  - Test individual cows if positive
  - If negative do surveillance quarterly
2. Test newborn calves
  - PI negative calf = PI negative dam

# Summary Info Bulk Tank Sampling Program

Total Cows 19104

Average herd 205

# herds

(3 no count) 96

|         |                  |                   | Dec-10         | Apr-11       |                |              |
|---------|------------------|-------------------|----------------|--------------|----------------|--------------|
| By Size | <u># Dairies</u> | <u>% of total</u> | <u>POS BVD</u> | <u>Herds</u> | <u>POS BVD</u> | <u>Herds</u> |
| >500    | 8                | 8.6               | 12.5%          | 1            | 12.5%          | 1            |
| 100-499 | 54               | 58.1              | 0.0%           | 0            | 1.9%           | 1            |
| <100    | 31               | 33.3              | 0.0%           | 0            | 0.0%           | 0            |

# Heifer Info

|       | Do you purchase cows/heifers? |       | Do you raise your own heifers? |       |
|-------|-------------------------------|-------|--------------------------------|-------|
| Yes   | 38                            | 39.6% | 82                             | 85.4% |
| No    | 55                            | 57.3% | 14                             | 14.6% |
| Blank | 3                             | 3.1%  |                                |       |

# Calf Raising

Do you have health problem with hutch calves?

|       |    |       |
|-------|----|-------|
| Yes   | 24 | 25.0% |
| No    | 45 | 46.9% |
| Blank | 1  | 1.0%  |
| Occ.  | 10 | 10.4% |
| Mod.  | 5  | 5.2%  |
| NA    | 11 | 11.5% |

# Cow Health

|          | Do you have a high incidence of mastitis? | Do you have problems with respiratory or post freshening disease? | Do you have trouble getting/keeping cows bred? |
|----------|---|---|--|
| Yes      | 7 7.3%                                    | 9 9.4%  | 16 16.7%                                       |
| No       | 73 76.0%                                  | 67 69.8%  | 64 66.7%                                       |
| Blank    | 4 4.2%                                    | 2 2.1%  | 1 1.0%   |
| Occ.     | 2 2.1%                                    | 8 8.3%  | 6 6.3%   |
| Moderate | 10 10.4%                                  | 10 10.4%  | 9 9.4%   |



# BVD Testing Info

|       | Have you had a diagnosis of BVD PI or disease on your dairy? |       | Have you previously or currently test for BVD? |       |
|-------|--|-------|--|-------|
| Yes   | 14   | 14.6% | 32   | 33.3% |
| No    | 81   | 84.4% | 61   | 63.5% |
| Blank | 1  | 1.0%  | 3  | 3.1%  |

# BVD Vaccination

| Do you vaccinate for BVD? |    |       |
|---------------------------|----|-------|
| None                      | 11 | 11.5% |
| MLV                       | 39 | 40.6% |
| Killed                    | 24 | 25.0% |
| Both                      | 18 | 18.8% |
| Blank                     | 3  | 3.1%  |

# Why would I look?

- Positive identification of a PI at the heifer raiser
- Less than benchmark reproductive parameters
- Herd expansion with unknown animals

# Case Study #1

- Closed herd **PI Heifer**
- Heifers
- These  
using M  
off. All  
to breed
- Protocol



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# Summary

## Don't Be Afraid of Change...It is happening

- “Farmers in a Changing World”
- If you don't know... ask someone who does or can head you in the right direction





# Questions?



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