VETERINARY MEDICINE
EXTENSION

Biosecurity Knowledge and Implementation Among Oklahoma Beef Cattle Producers

Rosslyn Biggs, DVM
Director of Continuing Education/Beef Cattle Extension Specialist

Picture courtesy: Katie Blunk, DVM

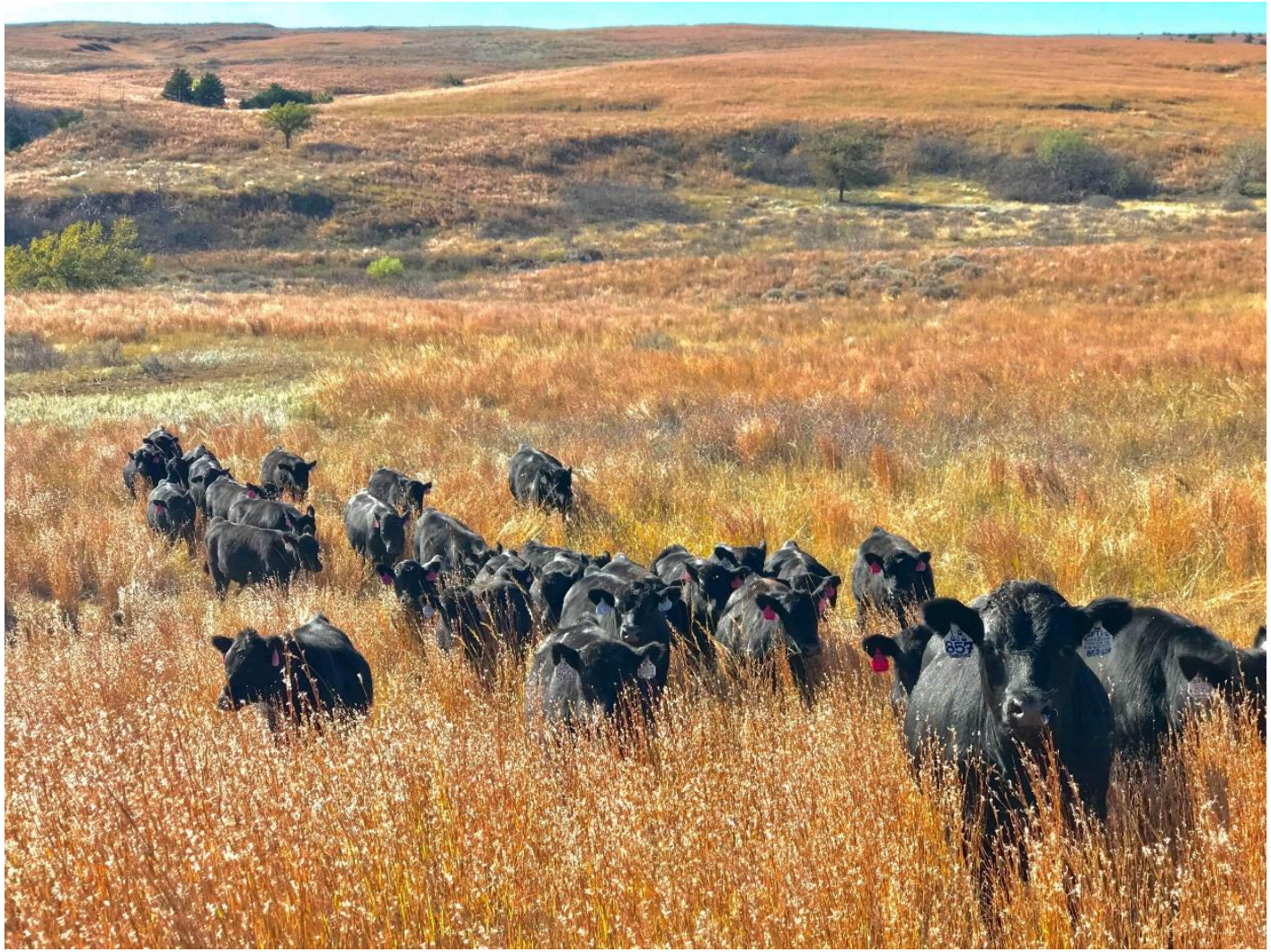
Outline

- Survey Design
- Results
- Resources

VETERINARY MEDICINE

The Need

- Herd health
  - Endemic disease
  - Foreign animal disease
  - Antibiotics and vaccines
- Food safety
- Marketability
- Business continuity
- Future considerations



Picture courtesy: Katie Blunk, DVM

OSU | VETERINARY MEDICINE

What is Biosecurity?

Biosecurity refers to everything that is done to keep diseases and the pathogens that carry them (including viruses, bacteria, funguses, parasites and other microorganisms) away from livestock, property, and people. (As defined in this study)

Determining the State of Biosecurity knowledge and Implementation among Beef Cattle Producers

- 2022 Survey of Oklahoma Cow-Calf Producers
  - Sent to 2,600 of 47,000 Oklahoma operations
- USDA National Ag Statistics Service
- 981 Completed Responses
- Drs. Hagerman, Currie-Raper, Whitworth, and Biggs
- Subset of Results Cleared
- USDA NAP-PRP Funded

OSU | VETERINARY MEDICINE

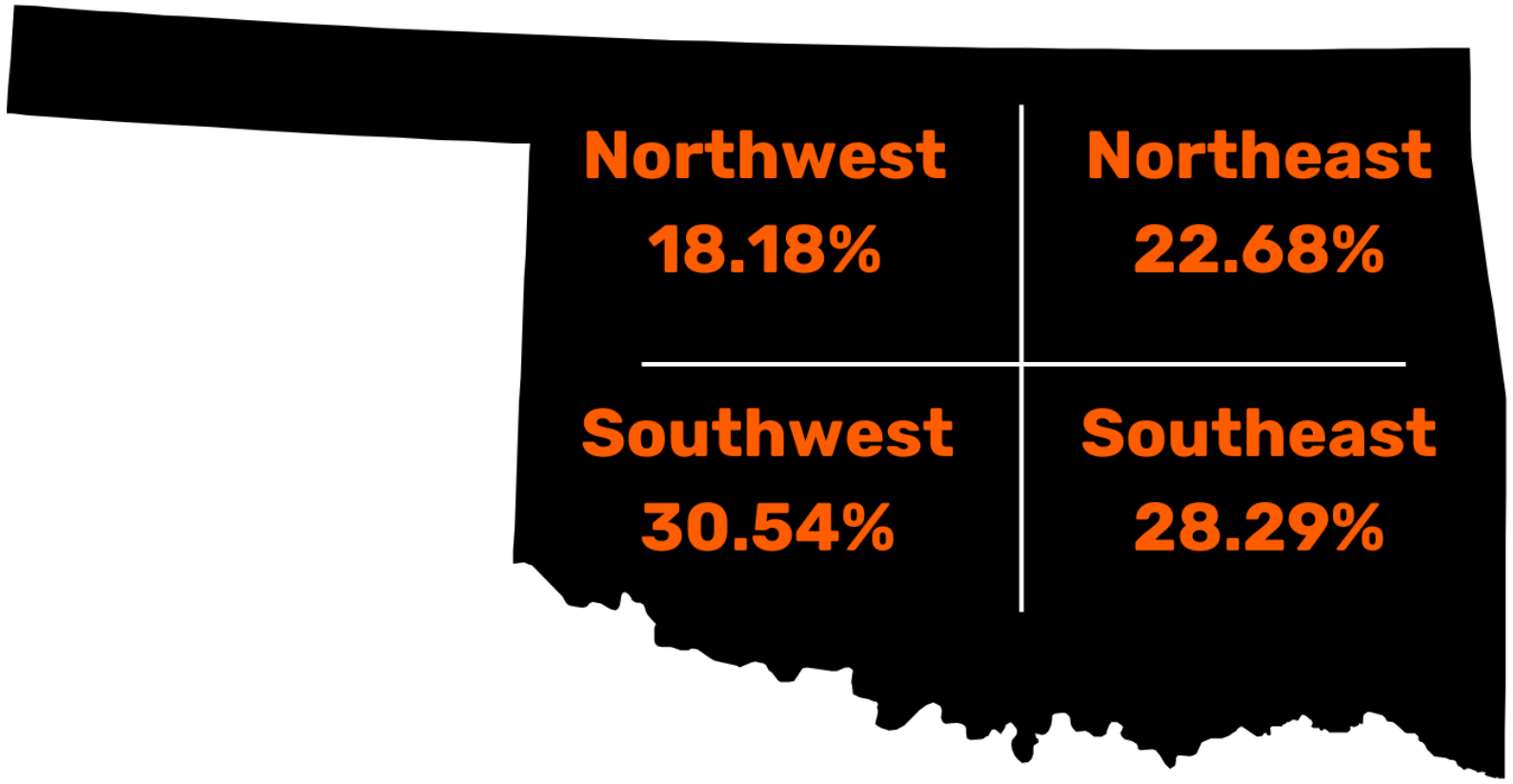
Research Motivation

Determine

1. Base level of biosecurity knowledge
2. Base set of biosecurity practices that are viewed as valuable,
3. Biosecurity plan elements that were most commonly adopted
4. Explain other elements were not adopted

Pair that information with a cost analysis of biosecurity plan elements.

Regional Producer Representation

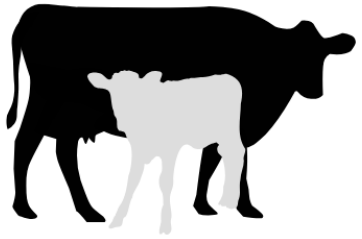


Total Cows Managed

Category	Percent
1 - 25	26.82
25-49	21.08
50-99	23.44
100-249	22.42
250-499	5.02
500 +	1.23

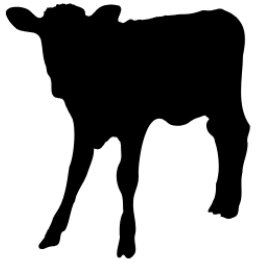
Calf Marketing

Sold at Weaning



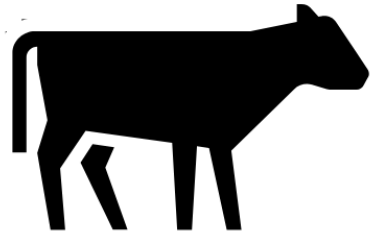
52%

After 30 days of weaning



22%

Maintained through Stocker Phase



12%

Research Results

How familiar are you with this definition of biosecurity?

I have never heard of it 31%

13% I understand biosecurity and have implemented principles of biosecurity on my farm/ranch.

Species Exposure Other Than Cows

Animal Types	Mean-Planned part of Operation	Mean - Not part of Operation but Found	Mean - Fenceline Contact
Other Beef Cattle	15%	11%	10%
Other Owned Cattle	47%	14%	10%
Farmed Bison, Deer or Elk	0.4%	13%	4%
Sheep or Goats	6.6%	12%	6%
Domestic Swine	1.2%	12%	3%
Poultry	12%	12%	5%
Horses, Donkeys or Mules	32%	13%	10%
Feral Swine		4%	12%
Wild Deer, Elk or Antelope		50%	17%

Research Results

How familiar are you with the Secure Beef Supply?

I have never heard of it 15%

SBS SECURE BEEF SUPPLY

Breeding Management

Are cows and heifers exposed to bulls on your operation?

96% YES

Do bulls reside on your operation full time?

90% YES

Are bulls owned by your operation?

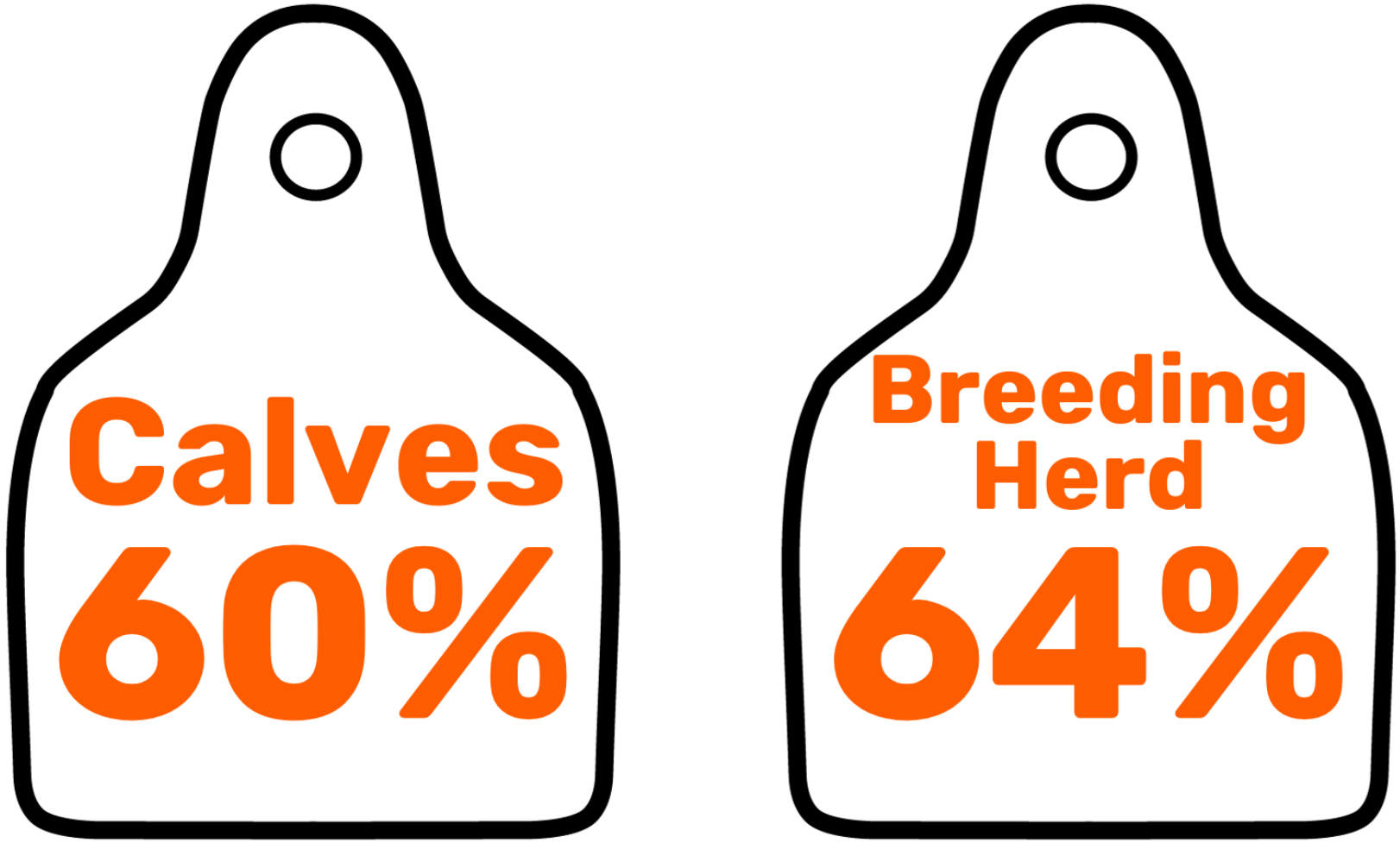
91% YES

3% - Leased
2% - Shared
1% - Both Leased and Shared

Bulls are used for breeding in other herds?

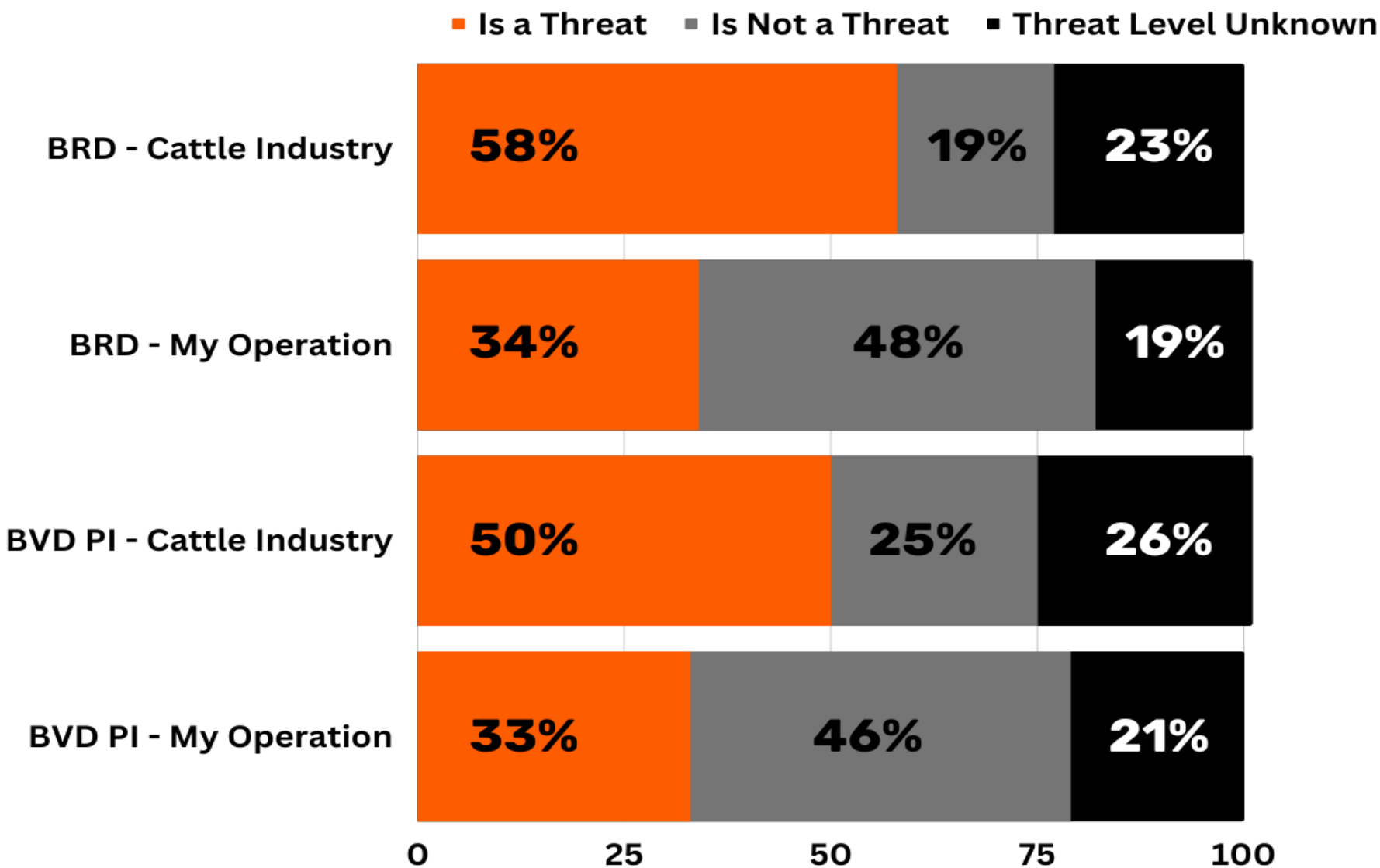
5% YES

Individual Identification

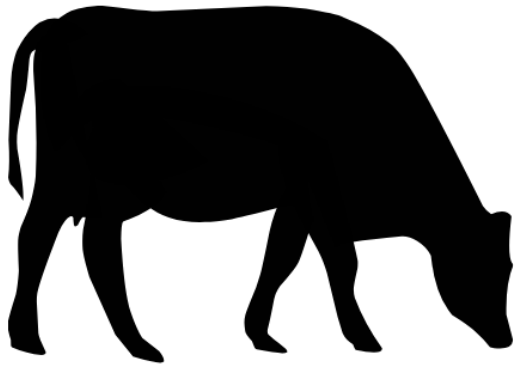


Keep Medical Records in Breeding Herd

Producer Disease Threat Perception BRD and PI BVD

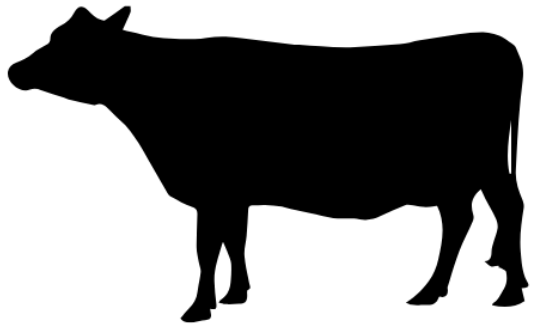


BVD PI Testing on Operation



COWS - 16%

BULLS - 21%



NON-BREEDING STOCK - 6.5%

Facilities

Access to a chute?

90%

If access, owned?

90%

Access to a scales?

14%

If access, owned?

79%

Access to a palpation cage?

29%

If access, owned?

91%

Access to preconditioning pens?

9%

If access, owned?

89%

Biosecurity plans

- Broke down into 22 practices
- On average, producers adopted 4/22
- Most common practices were cost-effective and easy
  - Requiring all persons entering the premises to have clean attire and footwear
  - Proper disposal of carcasses to prevent disease transmission or access by wildlife
  - Maintaining cleaning and disinfecting products for vehicles and equipment
  - Restricting access to hay and feed by wildlife and outside personnel

Why a particular biosecurity practice hasn't been adopted

20% of producers did not adopt practices because *they weren't familiar with them*.

17% of producers did *not feel they had enough cattle* to bother with that practice.

7% of producers felt they had *been okay so far* not adopting a practice.

7% of producers know what the practice is *they just don't use it*.

OSU | VETERINARY MEDICINE

Costs of biosecurity adoption

- **Starting with the 4 most common biosecurity practices: $2,104 per year**
  - Clean shoes and clothes for visitors
    - Could be $0 if you trust your visitors to come in clean clothes and shoes, or a boot wash station $189 per year
  - Carcass disposal can vary greatly by area and herd size.
    - Lined on-site burial $500 per year
    - Rendering $200 to $500 per year
  - Keeping cleaning supplies on hand for equipment
    - Cleaning at processing and movement $180 up to $1,000 for more frequent processing or shipments.
  - Fencing to prevent wildlife and people from feed storage
    - $4,000 to $7000 for fencing off hay storage, but fencing is an investment that last multiple years.
    - If a fence lasts 10 years, $400 to $700 per year.

Costs of biosecurity adoption

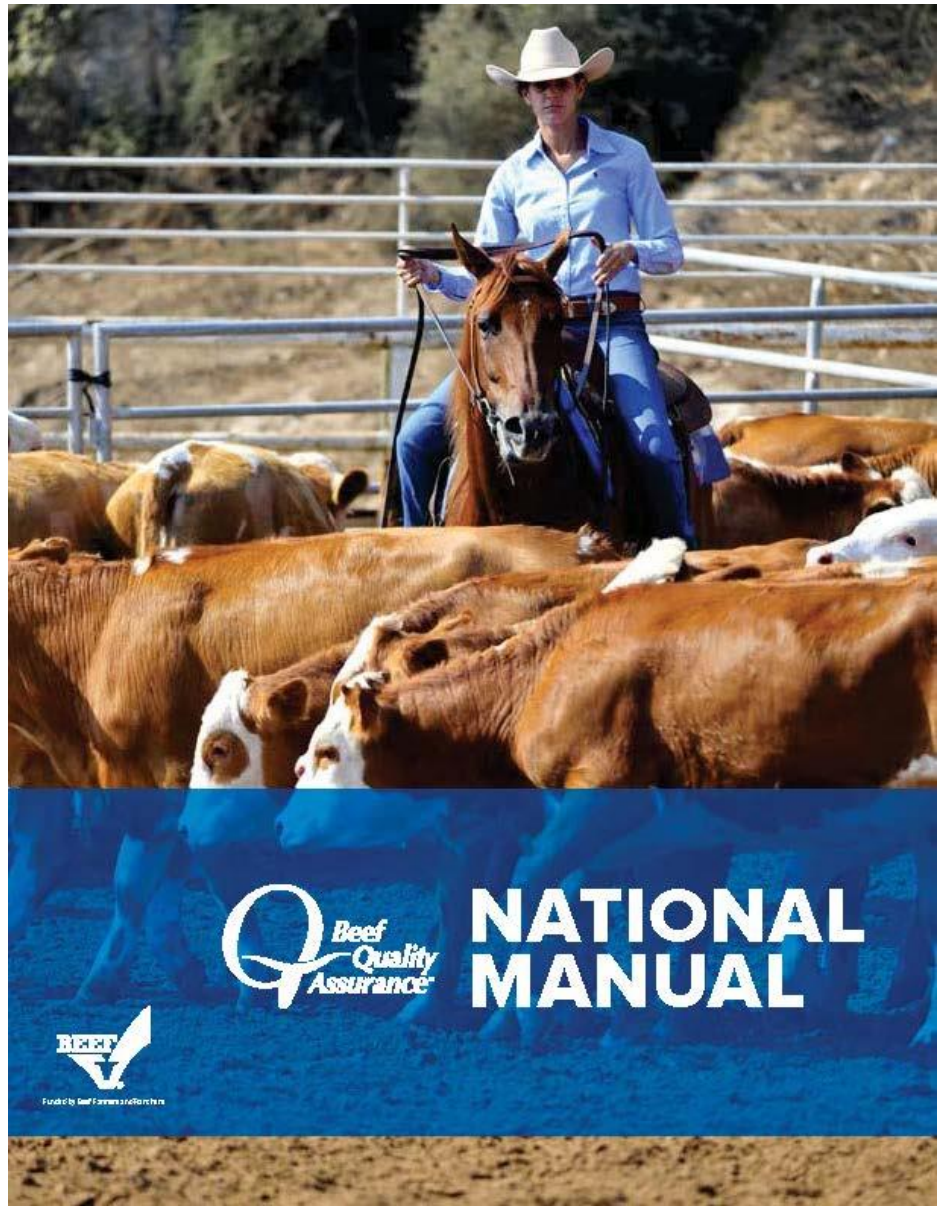
- Full Biosecurity Plan Adoption: $5,474/yr
- For a 100 head cow herd…
  - Base 4 practices $2,104 per year
  - 1/3 of the full plan implementation cost may already be covered
  - Some practices have more limited direct cost
    - Requiring health records
    - Certifications of all semen and embryos

Biosecurity Research-More to Come!

Beef Quality Assurance Resources

www.bqa.org

- Carcass Quality and Composition
- Cattle Care
- Herd Health
- **Biosecurity**
- Nutrition
- Record Keeping
- Transportation
- Environmental Stewardship
- Worker Safety
- Emergency Action Planning



OSU VETERINARY MEDICINE

The primary goal of this Advanced Education Module on Biosecurity is to support employees at cattle operations with biosecurity principles and practical biosecurity applications. Cattle operation owners and managers will also build a biosecurity plan that can be implemented. The intended outcome of this course includes improvements in biosecurity and production practices among cattle

BEEF
Funded by the Beef Checkoff

OSU | VETERINARY MEDICINE

- Free Training
- Fillable PDF
- Edit as needed
- Practical approach

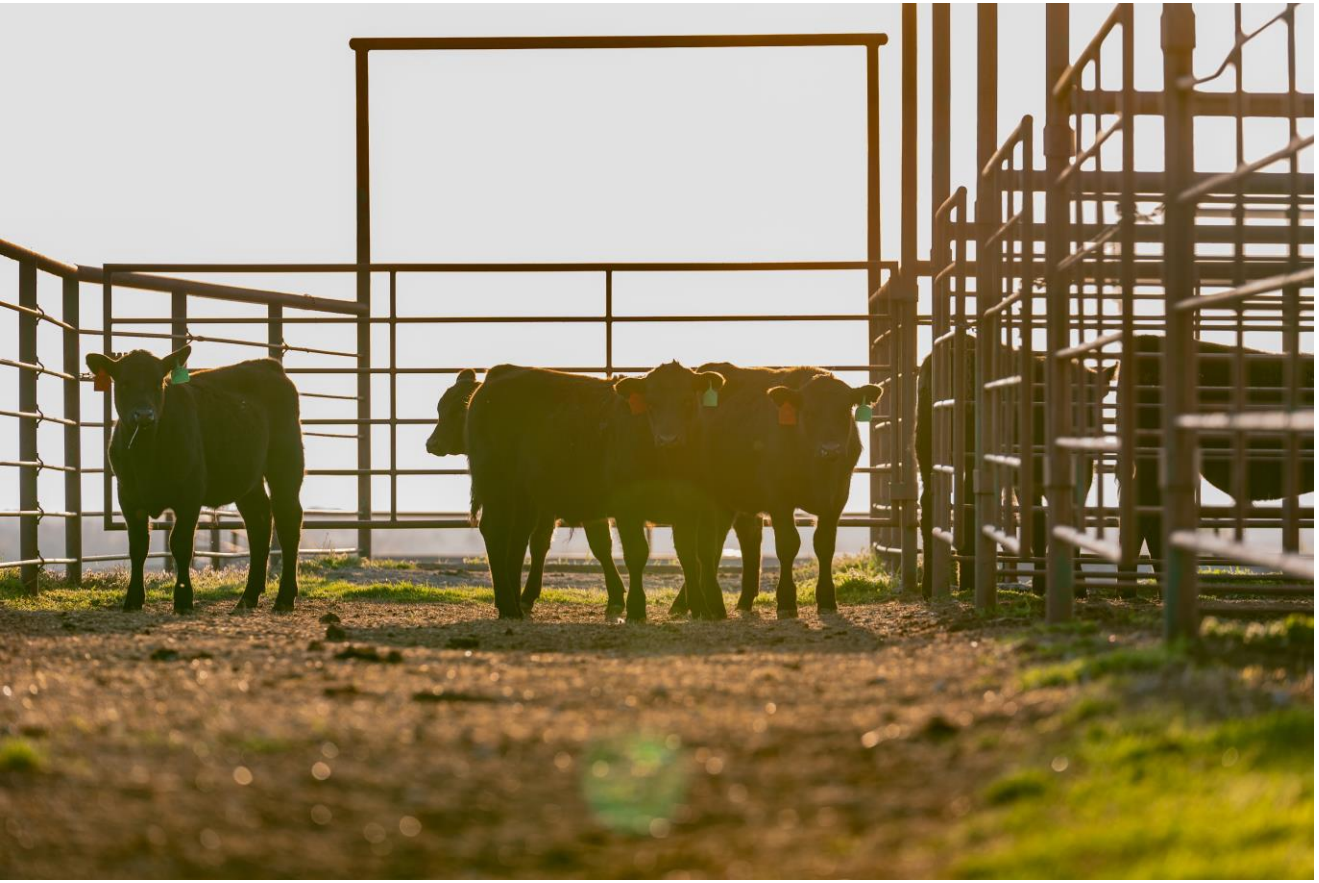
OSU | VETERINARY MEDICINE

Other Resources

- OSU Beef Cattle Manual
- Secure Beef Supply
  - www.securebeef.org

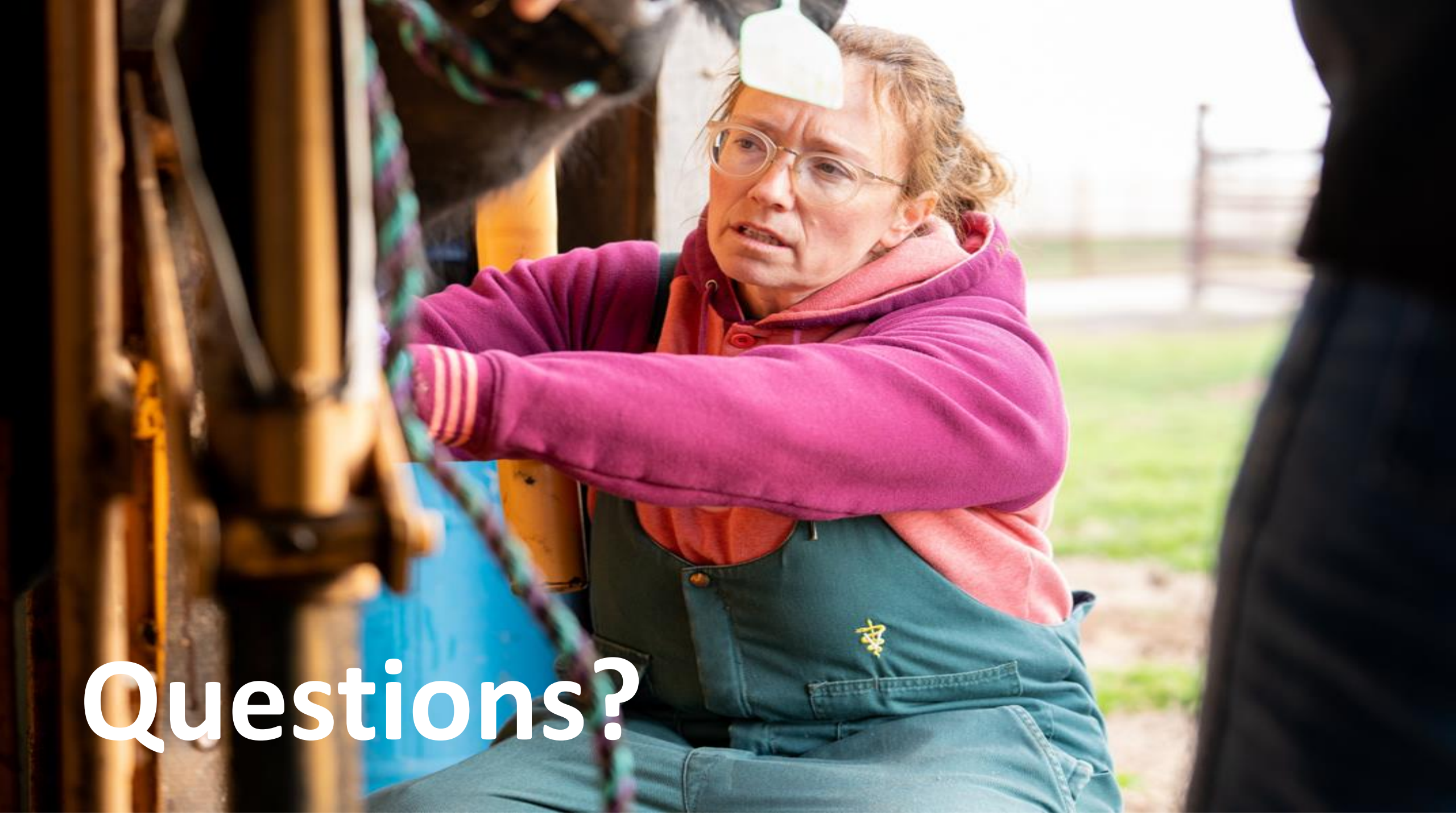
VETERINARY MEDICINE

Thanks!!



- USDA APHIS Veterinary Services
- Research Collaborators
- CVM CE Team
- CVM Communications
- DASNR Communications
- Dr. Katie Blunk, Images

OSU | VETERINARY MEDICINE


Questions?

Rosslyn Biggs, DVM

Assistant Clinical Professor

Director of Continuing Education

Beef Cattle Extension Specialist

O | 405.744.8587
C | 405.201.9127
E | rosslyn.biggs@okstate.edu

vetmed.okstate.edu

OSU | VETERINARY MEDICINE