

## Importance of Bovine Leukosis (Bovine Leukemia Virus)

- Antibody presence is considered evidence of infection
- Infection is **usually** inapparent and persistent

### Fatal Adult Lymphosarcoma

Most common tumor of cattle

Tumors in:

- Lymph nodes
- Spleen
- Uterus
- Spinal chord
- Intestines
- Heart
- Abomasum
- Kidney
- Tissue behind the eye

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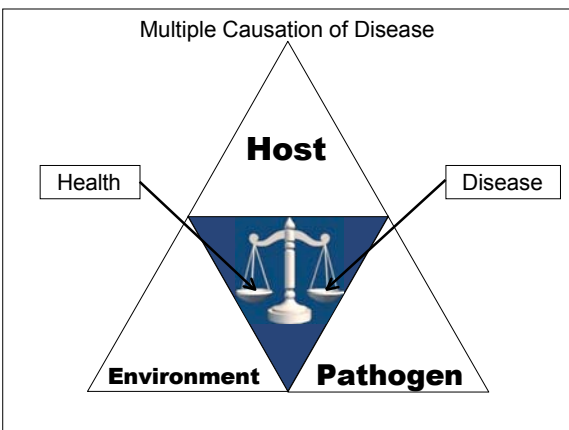
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### *Economic losses due to:*

- Death of cattle
- Carcass condemnation
- Premature culling and replacement



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### **Control of BLV?**



**Understand that transmission is possible through blood contamination via:**

- Insects
- Blood transfusions
- **Common needles** or surgical instruments
- Contaminated palpation sleeves

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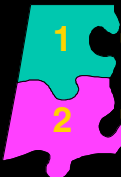
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### **Control of BLV?**



**Understand that transmission is possible through blood contamination**

**Understand that transmission from dam to offspring can happen**

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## Control of BLV?

- 1 Understand that transmission is possible through blood contamination
- 2 Understand that transmission from dam to offspring can happen
- 3 Segregate seropositive (infected) animals from seronegative (uninfected) animals with at least 1 fence (10 feet preferred).

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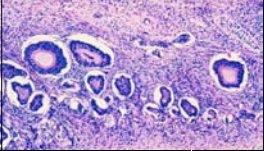
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## Importance of Bovine Viral Diarrhea

Consequences of *utero*BVDV infections



Infertility

Day 0 of gestation      150 days      birth

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## Importance of BVDV

Consequences of *utero*BVDV infections



BVDV isolated from 18 fetuses, 14/18 aborted in the last 3 months. (Dan Grooms, 2004)

Abortion

Infertility

Day 0 of gestation      150 days      birth

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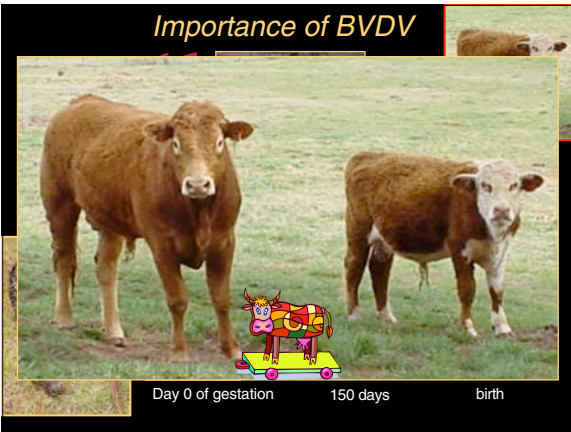
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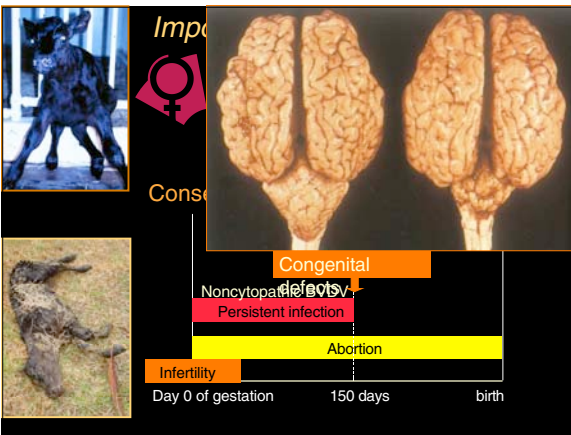
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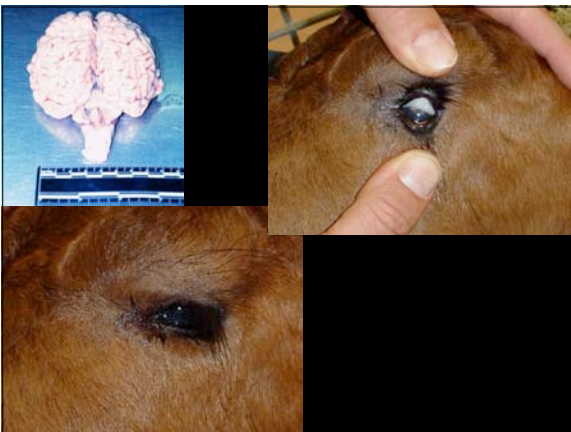
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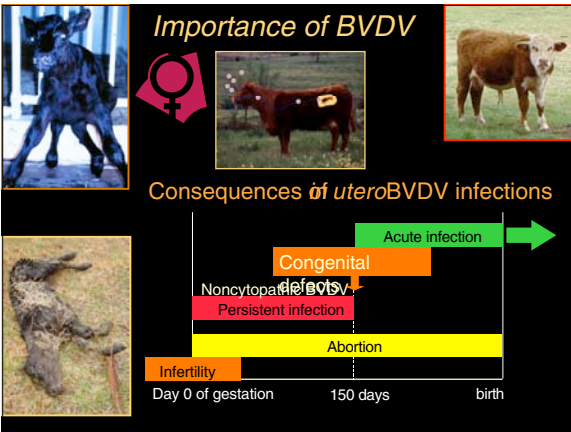
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### Importance of BVDV

- Depression
- Anorexia
- Diarrhea
- Ulcers of the nose, mouth, and muzzle
- Hemorrhagic disease
- Anemia

Total annual losses per calving:

- \$20 with low-virulence strains
- \$57 with high-virulence strains

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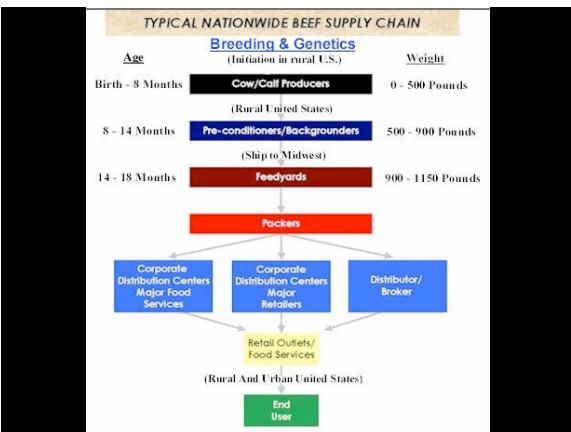
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BVDV

**1** Surveillance to detect  
➤ How???



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**Surveillance**

➤ **High Risk**

- **Ear notch on all calves**
- **Test all cows without calves**
  - (VI on serum)
- **Test bulls and heifers**
  - (VI on serum)

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**Surveillance**

➤ **Low risk (choose your plan)**

- #1. Monitor production & health**
- #2. Serology of herd sub-set**
- #3. PCR on pooled serum** (entire calf crop)
- #4. Ear notch test** (entire calf crop)

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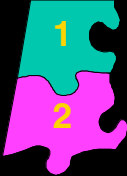
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## A Complete Focus on BVDV



**1 Surveillance to detect**

**2 Vaccination to keep in check**

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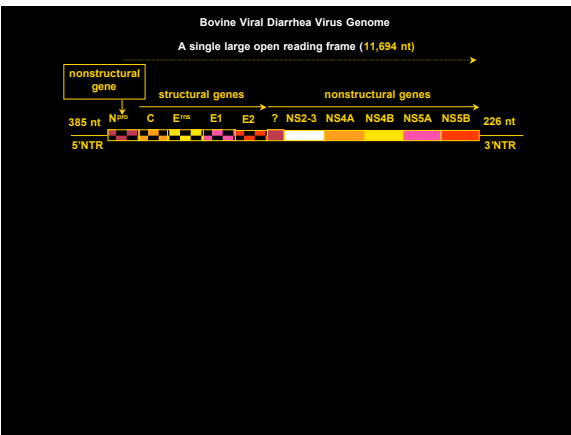
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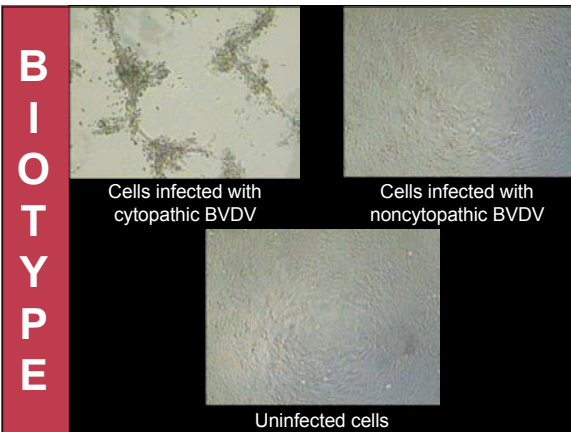
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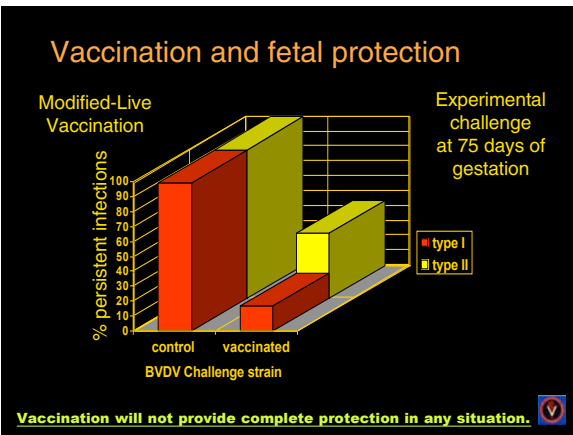
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**Table 2:** vaccines available for bovine viral diarrhoea virus.

Manufacturer	Vaccine	Modified Live	Cost	Type I BVDV	Type II BVDV	Additional	Approved for	Dosage	2 Doses	Route	Meat	
			per dose	Subtype	Strain	Biotype	Strain	Claims	Pregnant Cows	Initial	M	Withdrawal
Bovinger (Agribio)	Elite 5	Killed	\$1.19	1a	cp	Singer	cp 296	?	5 mL	?	?	21 day
AgriLabs	Master Guard	Killed	\$1.45	1a	cp	c24V	cp 125C	?	5 mL	?	?	21 day
Meril	RespiShield	Killed	?	1a	cp	Singer	cp	?	5 mL	?	?	21 day
Fort Dodge	Triangle 4+type	Killed	\$1.25	1a	cp	Singer	cp 5912	?	2 mL	?	?	21 day
Pfizer	CattleMaster 4	Killed	\$1.92	1a	cp	S960		?	2 mL	?	?	21 day
				1	ncp	6309						
Pfizer	CattleMaster Gold FP	Killed	\$2.01	1a	cp	S960	cp 77 F.P. I & II	?	2 mL	?	?	21 day
				1	ncp	6309						
Novartis	ViraShield 6	Killed	\$1.30	1a	ncp	KY22	ncp TN 131	?	5 mL	?	?	60 day
				1	ncp							
Bovinger (Agribio)	Express5	MLV	\$0.93	1a	cp	Singer	cp 296	?	2 mL	?	?	21 day
Pfizer	Bovv-Shield	MLV	\$1.16	1a	cp	NADL	cp P2 F.P. I & II	Provisional	2 mL	For BRSV	?	21 day
Pfizer	Protektor Gold FP 1b/MLV	MLV	\$1.31	1a	cp	NADL	cp P2 F.P. I & II	Provisional	2 mL	?	?	21 day
Fort Dodge	Pyramid 5 w/ Merial	MLV	\$1.00	1a	cp	Singer	cp 5912 F.P. I & II	Provisional	2 mL	?	?	21 day
Meril	Reliant 4	MLV	?	1a	cp	NADL	cp	?	2 mL	Recommend	?	21 day
AgriLabs	Titanium5	MLV	\$1.02	1a	cp	c24V	cp 296	?	2 mL	For BRSV	?	21 day
Schering-Plough	Defence 4	MLV	\$1.00	1b	ncp	WRL	cp	?	2 mL	?	?	21 day
Novartis	Arsenal 4.1	MLV	\$0.94	1a	ncp			?	2 mL	?	?	21 day
Intervet	Vista	MLV	\$0.99	1a	cp	Singer	cp 125A F.P. I & II	?	2 mL	?	?	21 day
Bovinger (Agribio)	Breed-BackP	MLV	\$1.46	1a	cp	Singer	cp 296 F.P. I & II	?	5 mL	?	?	21 day

Provisional- Use is approved in pregnant cows if cows have been vaccinated with this same product prebreeding. These vaccines are also provisionally approved in pregnant cows.

**Vaccination will not provide complete protection in any situation.**



### BVDV vaccination protocol

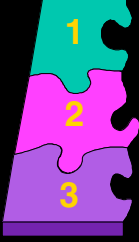
Heifers at 4 to 6 months  
administer MLV  
revaccinate with MLV 30 days later

Revaccinate heifers and cows prior to breeding

**Vaccination will not provide complete protection in any situation.**



**A Complete Focus  
on BVDV**



**1 Surveillance to detect**

**2 Vaccination to keep in check**

**3 Biosecurity to protect**

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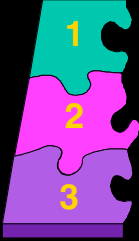
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**Biosecurity:**  
**Controlling the movement of**



**1 People**

**2 Objects (fomites)**

**3 Animals**



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**How to do biosecurity**

**1. Identify and remove persistently infected animals from your herd.**



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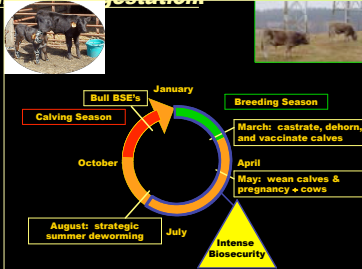
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## How to do biosecurity

2. **Don't introduce cattle into your herd that lack previous testing for BVDV, especially during the breeding season or the first 5 months of gestation.**



3. **Prevent your cattle from contacting cattle outside your herd (e.g. shows, exhibitions, fence-line contact), especially during the breeding season or the first 5 months of gestation.**

- If contact occurs with your non-pregnant animals, quarantine for 21 days before reintroduction to your herd.**
- If contact occurs with your pregnant animals (prior to 5 months of gestation), isolate until the calf is born and test the calf for BVDV before reintroduction.**



## How to do biosecurity

4. **Don't allow people wearing boots and coveralls contaminated by other herds to contact your cattle.**



## How to do biosecurity

5. **Don't allow dirty or contaminated instruments from other herds to contact your cattle (e.g. nose tongs, vaccine vials, balling guns, dehorers, castrating knives, tagging pliers)**



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## How to do biosecurity



6. **Implement appropriate fly control.**
7. **Limit contact with wildlife (especially deer).**



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## Don't forget biosecurity for semen & embryos

- **Semen CSS certified**
- **Embryos from BVD free donor or washed according to International Embryo Transfer Society (IETS) Protocol**

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## Signs of Anaplasmosis

Usually no clinical signs in calves!

- Acute aggression
- Weakness and ataxia
- Fever
- Off feed
- Constipation with dark brown feces
- Abortion

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## Control of Anaplasmosis

**1** Understand that transmission is possible through blood contamination via:

- Insects- ticks and horse flies
- Blood transfusions
- Common needles or surgical instruments
- Contaminated palpation sleeves

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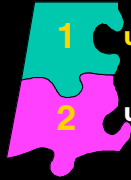
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## ***Control of Anaplasmosis***



**1 Understand that transmission is possible through blood contamination**

**2 Understand that some cattle can be persistent, asymptomatic carriers but infect insects**

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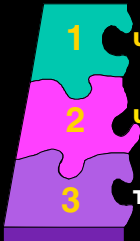
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## ***Control of Anaplasmosis***



**1 Understand that transmission is possible through blood contamination**

**2 Understand that some cattle can be persistent, asymptomatic carriers but infect insects**

**3 To obtain complete clearance, treat with long acting tetracycline every 3 days for 4 successive treatments & confirm clearance**

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