Government of Botswana

European Union

Private Sector Development Programme, Botswana

A Government of Botswana initiative supported by the European Union, the Centre for the Development of Enterprise and Botswana Confederation of Commerce, Industry and Manpower

Public Private Dialogue on Beef Value Chain Development
From Assets to Investments

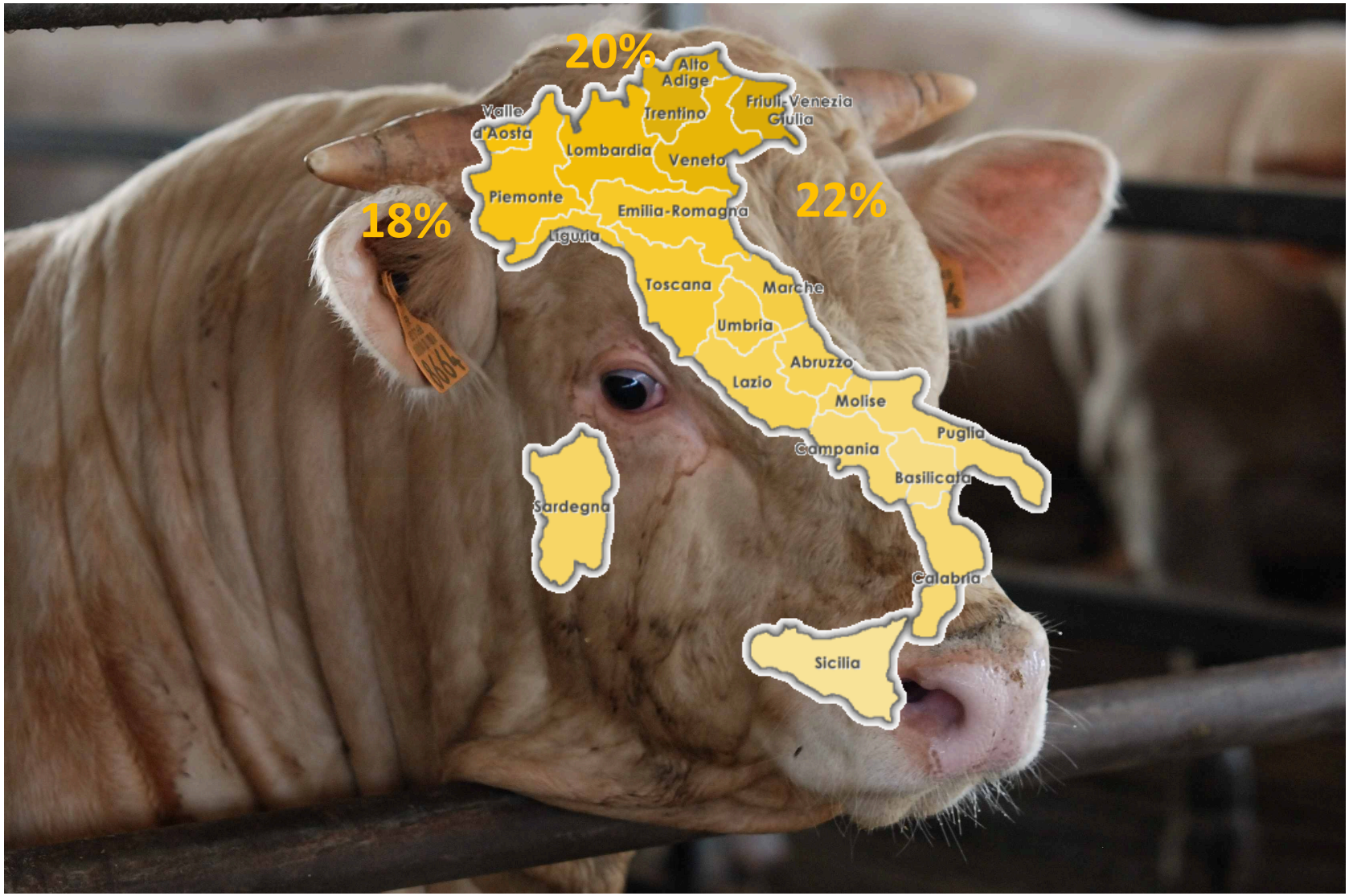
Italian cattle's sanitary facts

Dr Alessandro Sadocco, Unicarve
Veterinarian

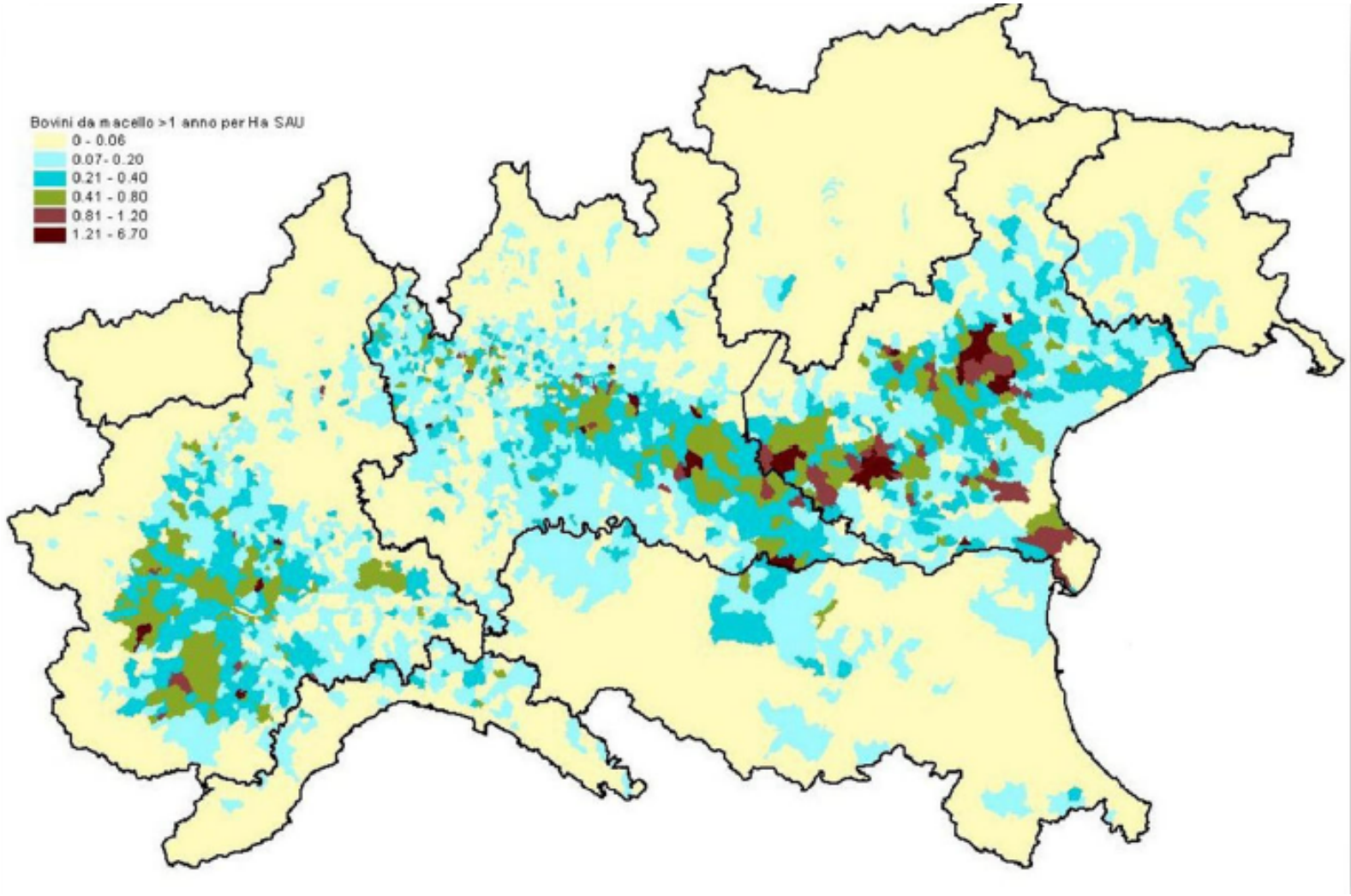
Gaborone, Botswana
November 17 – 19th

Example of Italian farms

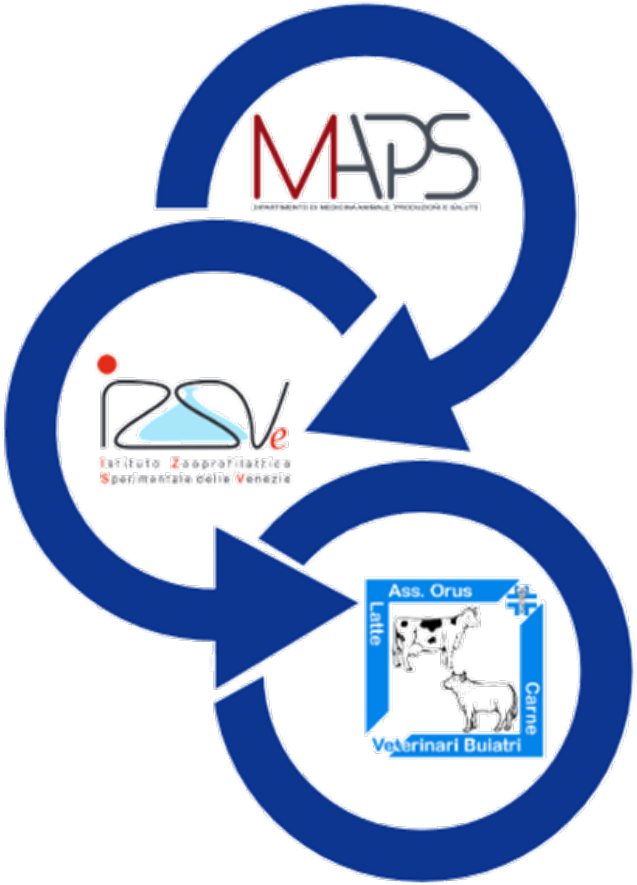
Italian farm distribution



Distribution of beef cattle older than one year in Northern Italy

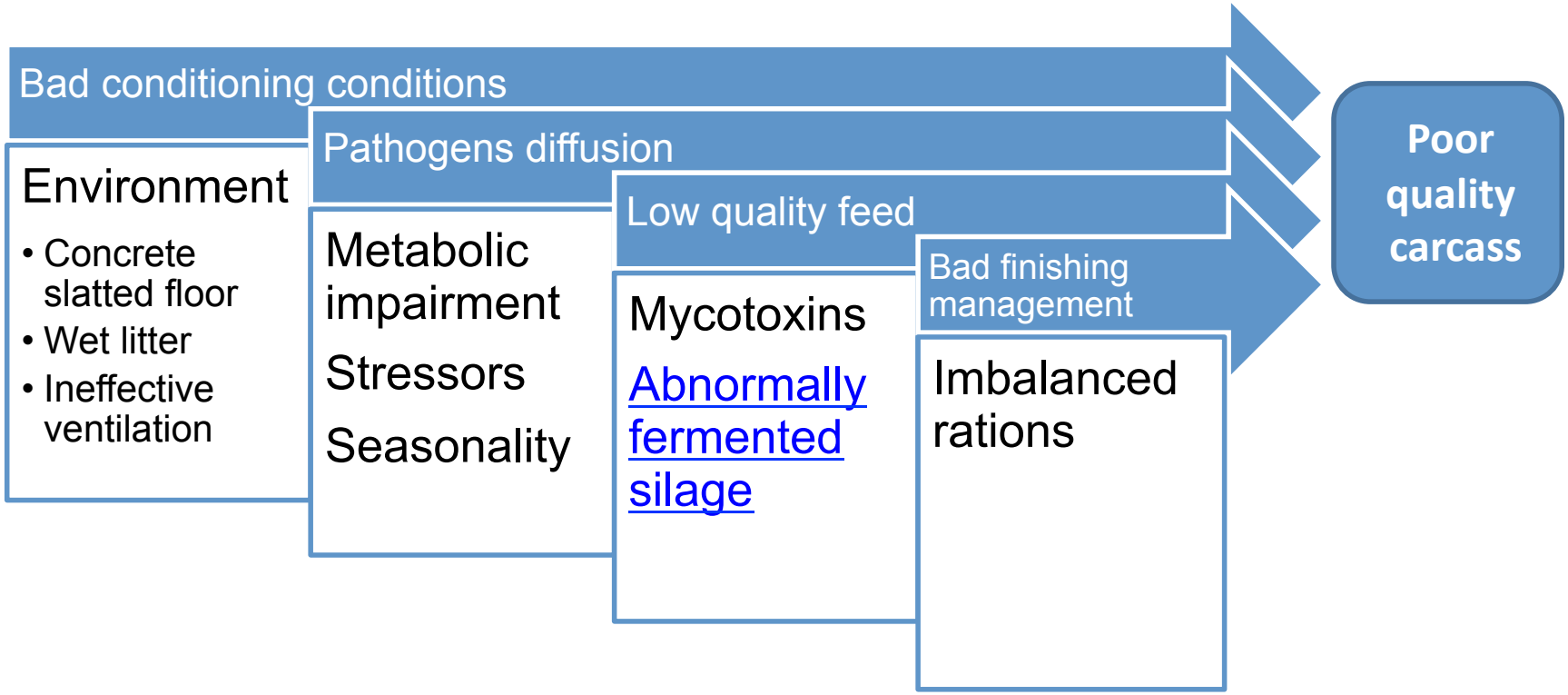


Veterinary Association



- In 2012 started an effective dialogue between field veterinary and research and laboratory technicians.
- **Benefits**:
  - **Farmer:** up to date service
  - **Vet:** support in case of major problems
  - **Research:** focused on really important issues

Critical phases in intensive beef cattle rearing



	Optimal level	Attention threshold
Mortality rate	**0,2 %**	3 %
Morbidity rate	**15 %**	80 %
Presences in infirmary box	**0 %**	3 %

Source - UNICARVE 2013

Frequency of sanitary problems

Causes	Frequency
Infective diseases	
- **Respiratory diseases**	**High**
- Gastro-enteric disease	Scarcely ever
- Nervous disease	Rare
Functional diseases	
- Bloat	Sometimes
- Impaction	Scarcely ever
Metabolic diseases	Sometimes
Intoxication and poisoning	Rare
Traumatic causes	Rare

We can create a defense strategy…

…only if we know the etiology of our farm disease

Vaccination Program for Calves

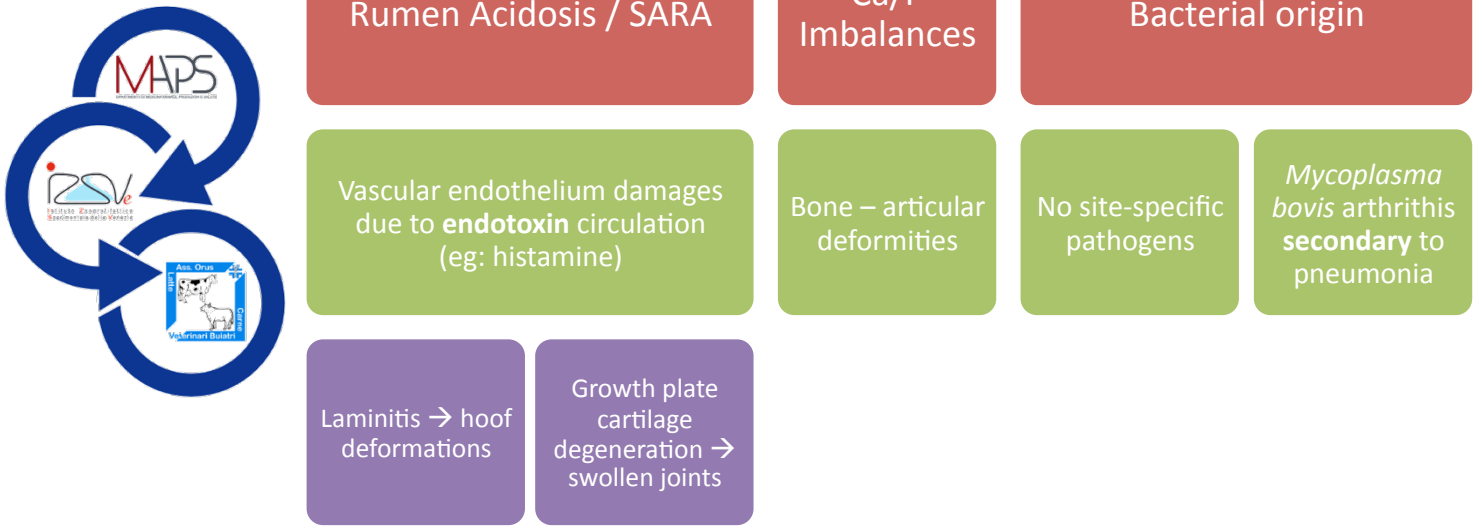
Before thinking that you can resolve all your troubles with vaccination consider:

- ✓ **Nutrition**
- ✓ **Care**
- ✓ **Sanitation**
- ✓ **Housing**

- 1st day of housing
  - Identification and treatment of sick animals (NSAIDs)
- 2nd day
  - Antibiotic in sick animals
- 3rd day
  - Vaccination for **IBR – BVD – Pi3 – BRSV** (+ Pasteurella)
  - + endectocide
- 24th day
  - **Booster Vaccination**
- Every 6 months
  - **Clostridial mixed** vaccine

Lameness

There is an ongoing project to understand which of these is the first causal agent of lameness

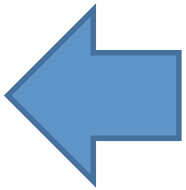


Thank You

Back Up Slides

Typical Levels of Silage Fermentation End-Products

	Corn Silage	Legume Haylage >65% moisture	Legume Haylage <55% moisture	Grass Haylage
pH	3.7 – 4.2	4.3 – 4.5	4.7 – 5.0	4.3 – 4.7
Lactic acid %	4 – 7	7 – 8	2 – 4	6 – 10
Acetic acid %	1 – 3	2 – 3	0.5 – 2	1 – 3
Priopionic acid %	< 0.1	< 0.5	< 0.1	< 0.1
Butyric acid %	0	< 0.5	0	0.5 – 1
Ethanol %	1 – 3	0.5 – 1	0.5	0.5 – 1
Ammonia-N (% of CP)	5 – 7	10 – 15	< 12	8 – 12



Source - *Dr Limin Kung*, University of Delaware

Pathogenesis of intestinal clostridiosis

Acidosis/SARA due to **excessive dietary starch**

Too cold feeding and watering

Excessive dietary protein

Reduced intestinal motility + ruminal mucosa lesions

Increase of intestinal pH

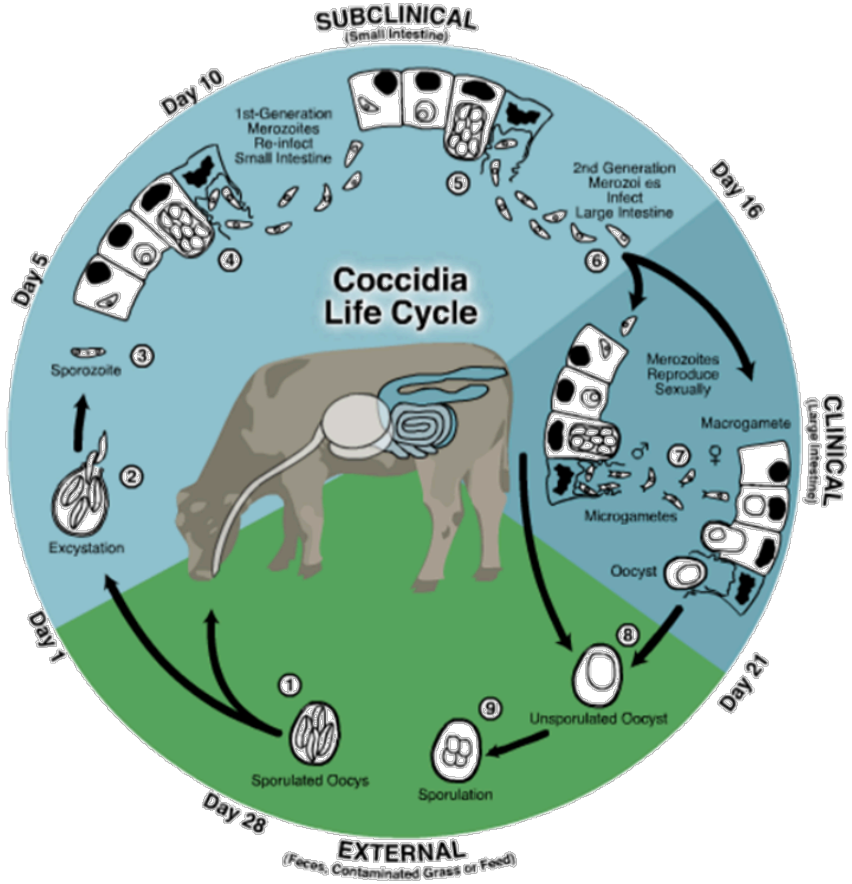
Predisposition to intestinal clostridiosis

Clostridia spores contamination level and corn silag

Quality level
Excellent
Good
Decent
Moderate
Poor

Source – Dr. Michele Muraro, DVM, P

Eimeria bovis life cycle



Source – *Merial.com*

Incubation period
17 – 21 days
Clinical manifestation
7 – 21 days
Environment oocysts resistance
1 – 2 year

Mainly pulmonary diseases

INFECTIVE DISEASES

Viral causes of diseases: PI_3 – Parainfluenza-3

- Responsible of low grade infection of the upper respiratory mucosa: it's the causal agent of the «**shipping fever**».
- It can be transmitted by nasal and ocular discharge.
- Fatalities are rare, and usually involve secondary bacterial infection.
- The most important role of PI3 in bovine respiratory disease (BRD) is to predispose cattle to concurrent infections with **IBR virus** or **bacterial** respiratory pathogens.

«Openers virus»

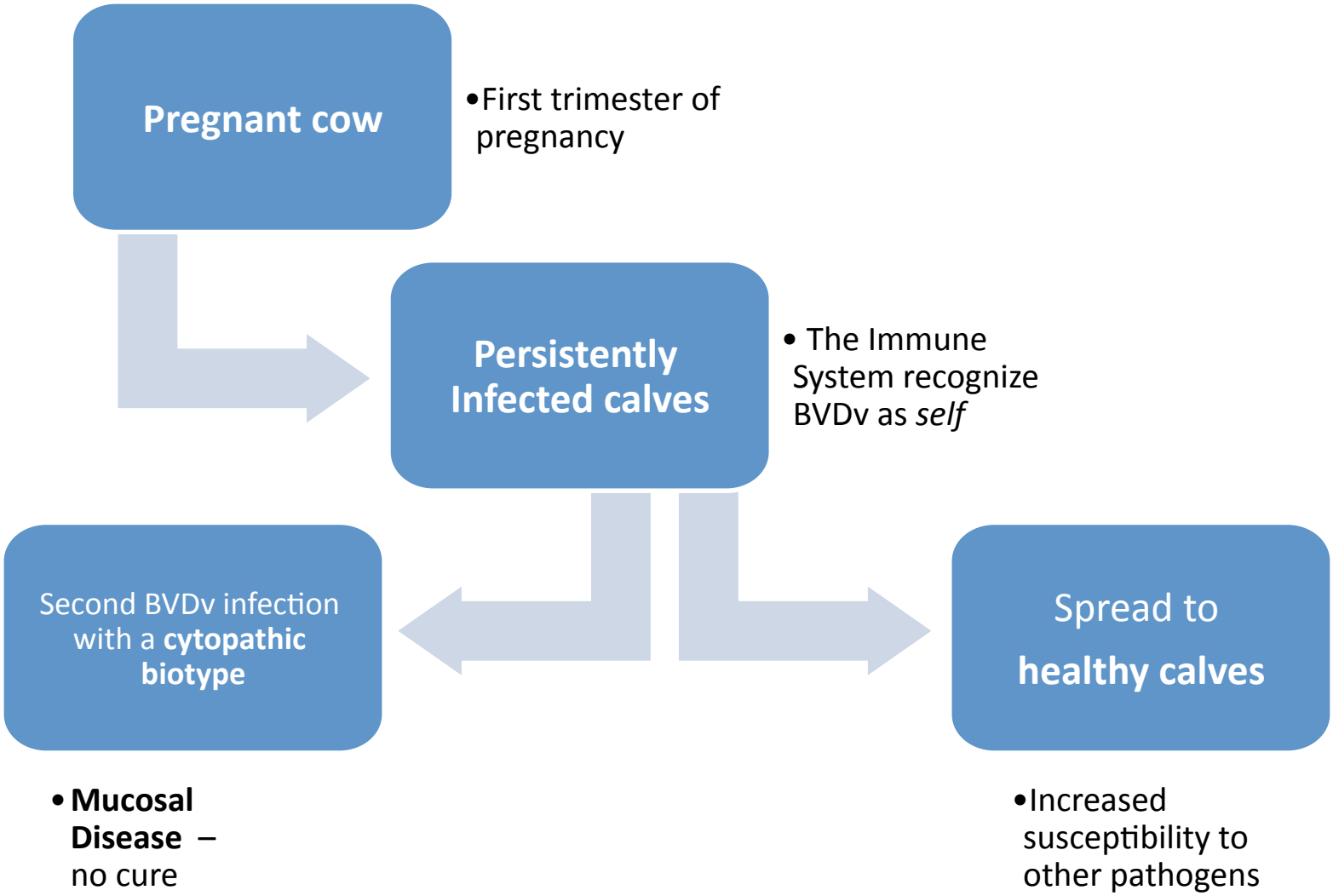
Viral causes of diseases:

BVD/MD – Bovine Viral Diarrhea /Mucosal Disease

- It causes various clinical outcomes, from **sub-clinical** to **acute** cases including abortion, infertility, ***immunosuppression***, and most dramatically, Mucosal Disease.
- Symptomatic treatment of mucosal disease is **useless**.
- Pestiviruses have the ability to establish **persistent infection** in calves during gestation, which often goes unnoticed.

«Immunosuppression»

Persistent infected calves



Viral causes of diseases:

IBR/IPV – Infectious Bovine Rhinotracheitis / Infectoius Pustular Vulvovaginitis

- Bovine Herpes Virus-1 (BoHV1) belongs to the Herpes family. The virus becomes **'latent'** in 100% of cases – the virus retreats to the nervous system and lies dormant, but if the animal is stressed the virus can **'recrudesce'**, becoming active and infectious again.
- Use NSAIDs instead of corticosteroids.
- Many European countries have already obtained a free status and in others, eradication programs are running

«Latency and immunosuppression»

Viral causes of diseases:
BRSV – Bovine Respiratory Syncytial Virus

- BRSV was named for its characteristic cytopathic effect, the formation in infected tissue of syncytial cells, giant multinuclear cells formed by the fusion of several cells. Secondary bacterial infections, frequently involving **Mannheimia (Pasteurella) haemolytica**
- Treatment is limited to antibacterial therapy for secondary bacterial infections.

«Openers virus»

Bacterial causes of diseases: Pasteurellosis

- *Mannheimia haemolytica* and *Pasteurella multocida*
- The peak incidence of disease is within **3 weeks** of arrival in the feedlot usually with a history of **stressful events**.
- Symptoms often start out vague but can develop into more severe depression and anorexia, fever, labored breathing, and rapid weight loss. Cough not always present and nasal discharge starts out as mostly mucous and develops into a mostly purulent (pus) discharge. The *Mannheimia* strains often produce a cytotoxin, known as **leukotoxin**, which kills leukocytes of ruminants.

«Early stage treatment is the key»

Bacterial causes of diseases: *Histophilus somni*

- **Opportunistic** pathogen that complicates viral infection and increases the severity of infection with other bacterial agents.
- Involvement of the central nervous system results in a syndrome known as **thromboembolic meningoencepahlitis** (TEME). The respiratory syndrome is often preceded by primary infection with viral pathogens, with respiratory signs sometimes followed by TEME.
- Minimizing **overcrowding** and **stress** is the best way to avoid the problem

«Minimize overcrowding and stress»

Mainly enteric and articular diseases

HUSBANDRY DISEASES

Enterotoxaemia: *Clostridium perfringens*

- Casued by proliferation of Clostridia in the intestine.
- These bacteria produces a lot of toxins that damages blood vessels and the nervous system → **sudden death**
- The disease tends to occur in **rapidly growing** animals in good conditions and on **high plane of nutrition** (high carbohydrates and protein diet).
- A **disruption in digestion** is necessary for the disease to occur: a change in feed is usually involved.

Pathogenesis →

Solution: Check feed quality! →

If high plan of nutrition be careful in diet variations and use vaccination; if possible use normal plan of nutrition.

Parasitic diarrhea: Coccidiosis

- Coccidiosis is commonly a disease of young cattle (1–2 mo to 1 yr)
- **Stress** is an important factor: in range cattle probably result from severe weather stress and crowding; cattle confined to feedlots are susceptible to coccidiosis throughout the year.
- Resuslts:
  - Reduced **ADG**
  - Worsening of the indices of **feed conversion**
  - Increase of direct and indirect **production costs**

Parasitic cycle → 

Solution: reduce stress factors and feed fecal contamination.
If necessary use coccidiostats (decoquinate)

Thank You