

Pre-calving Health



Tim Geraghty

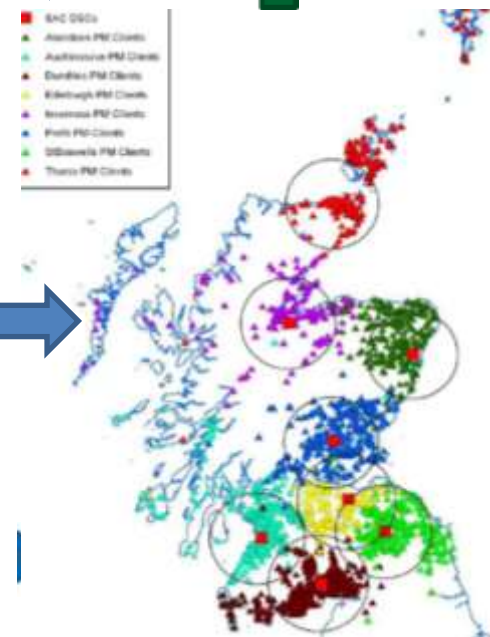
Effective surveillance

Stockperson recognition

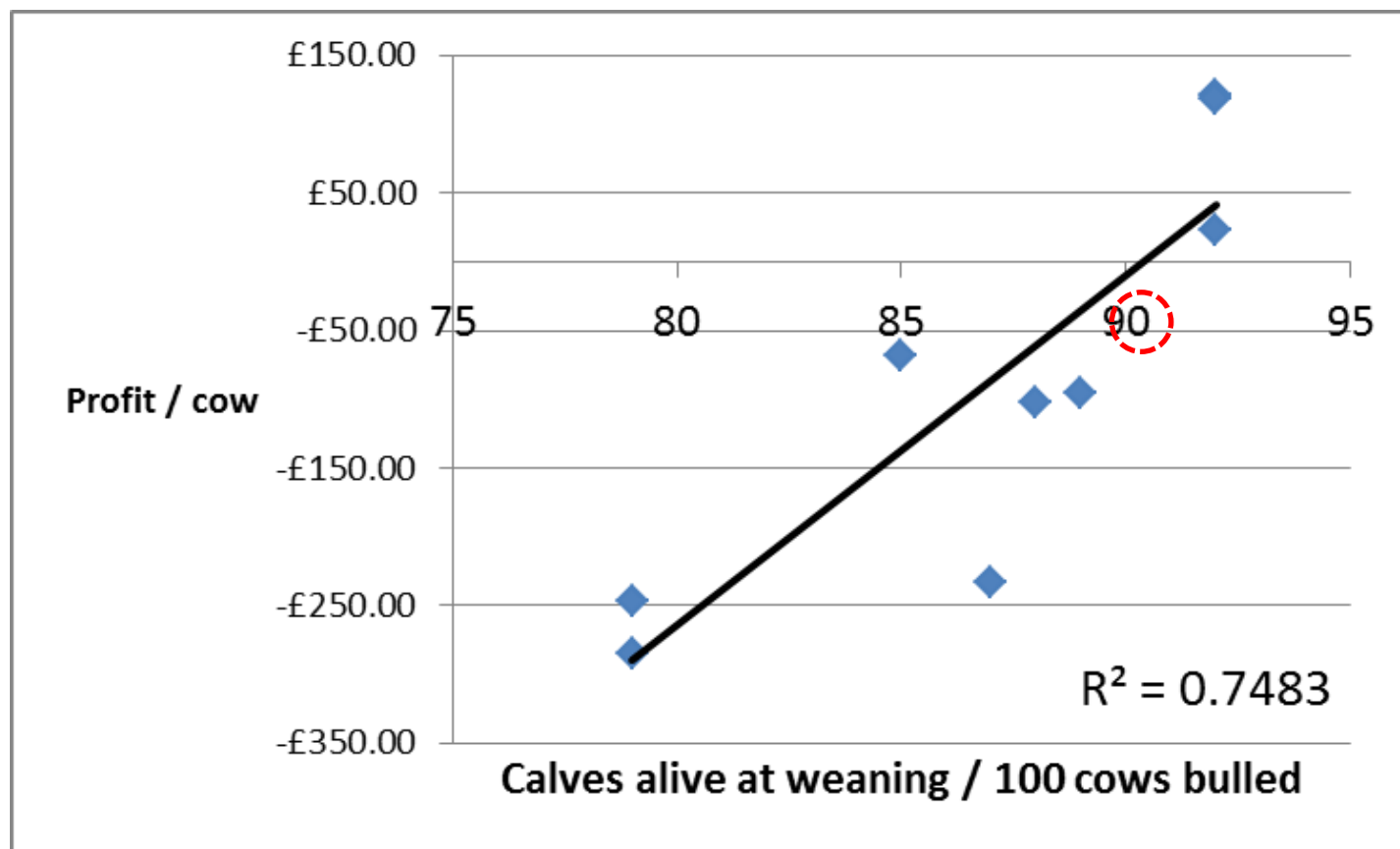
Veterinary examination

SAC Vet Services

Diagnostic
Report

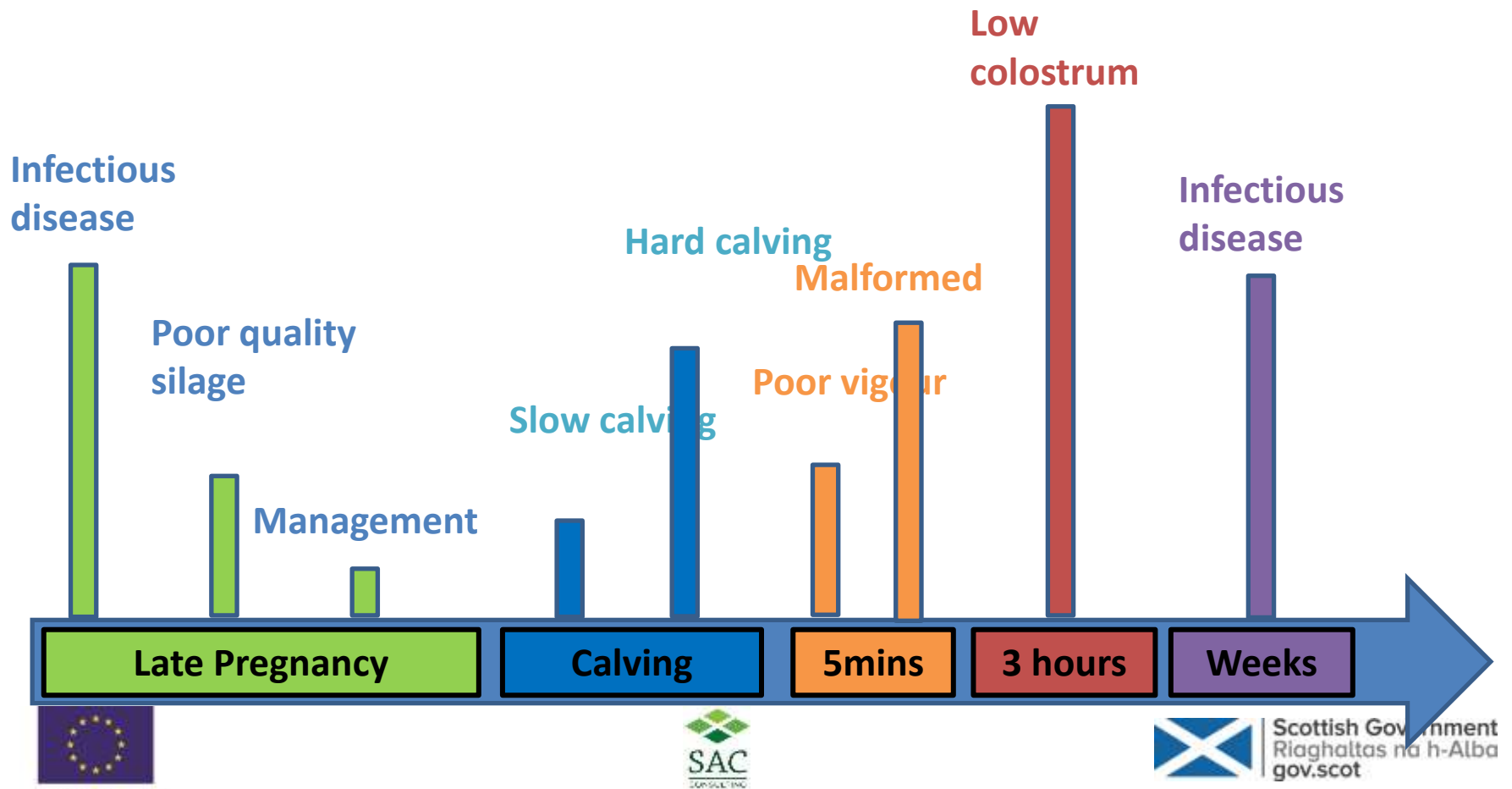


Calves born and surviving



Data from 'Cattle and sheep enterprise profitability in Scotland', QMS, 2014

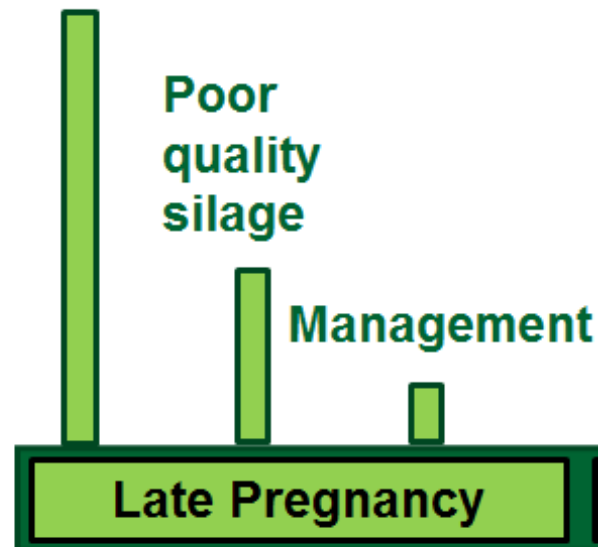
The calves obstacle course



Obstacles in late pregnancy



**Infectious
disease**



Abortion investigations?



**Two hour round trip
to the lab**

**Another 20-30
minutes at the lab**

**~ £60 / calf foetus
~ £35 / lamb set**

**Trickle of results for
1- 2 weeks**

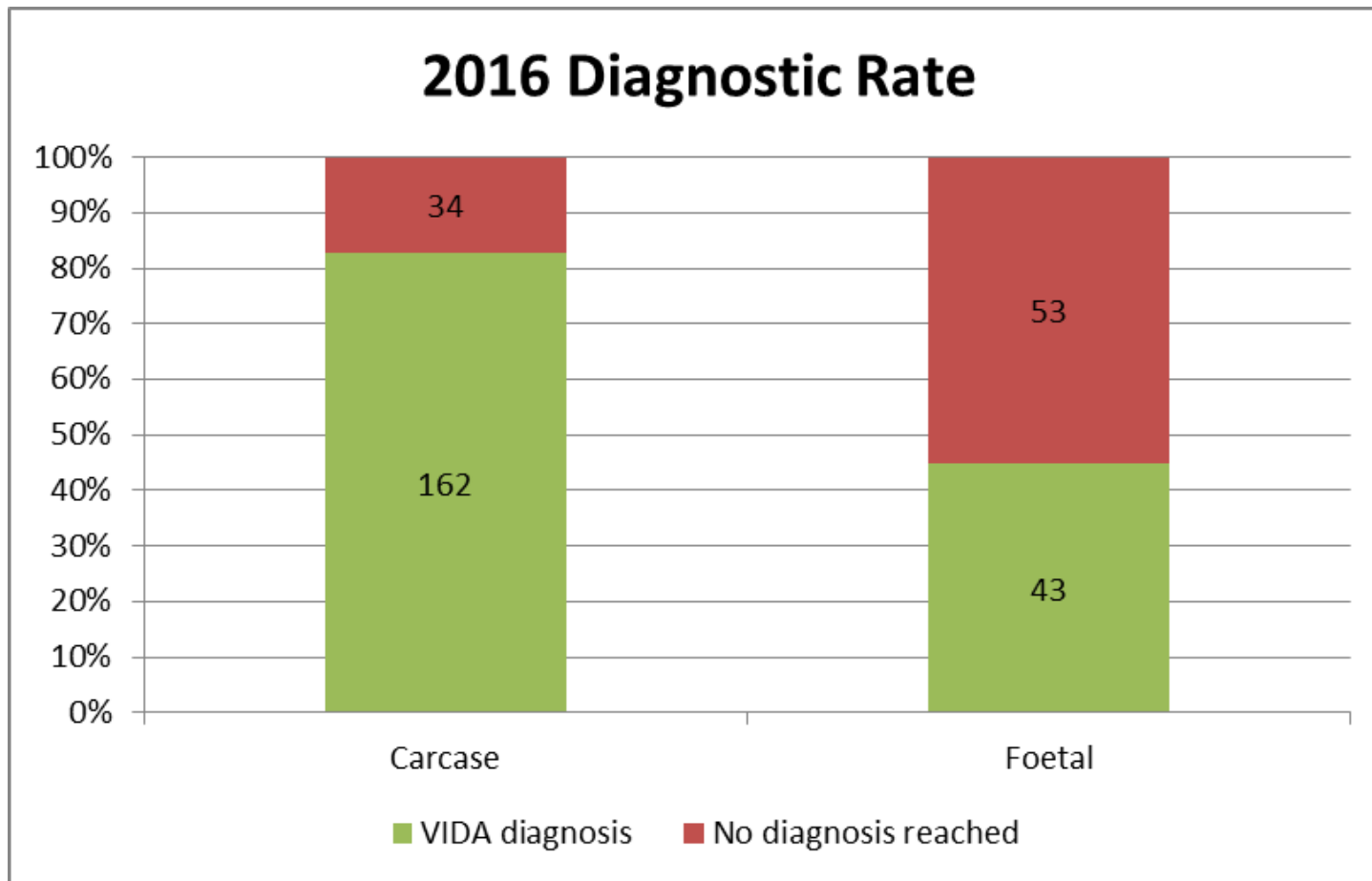
**A final report
produced**

Final report:



DIAGNOSIS NOT REACHED

SAC Vet Services



What has been tested for?

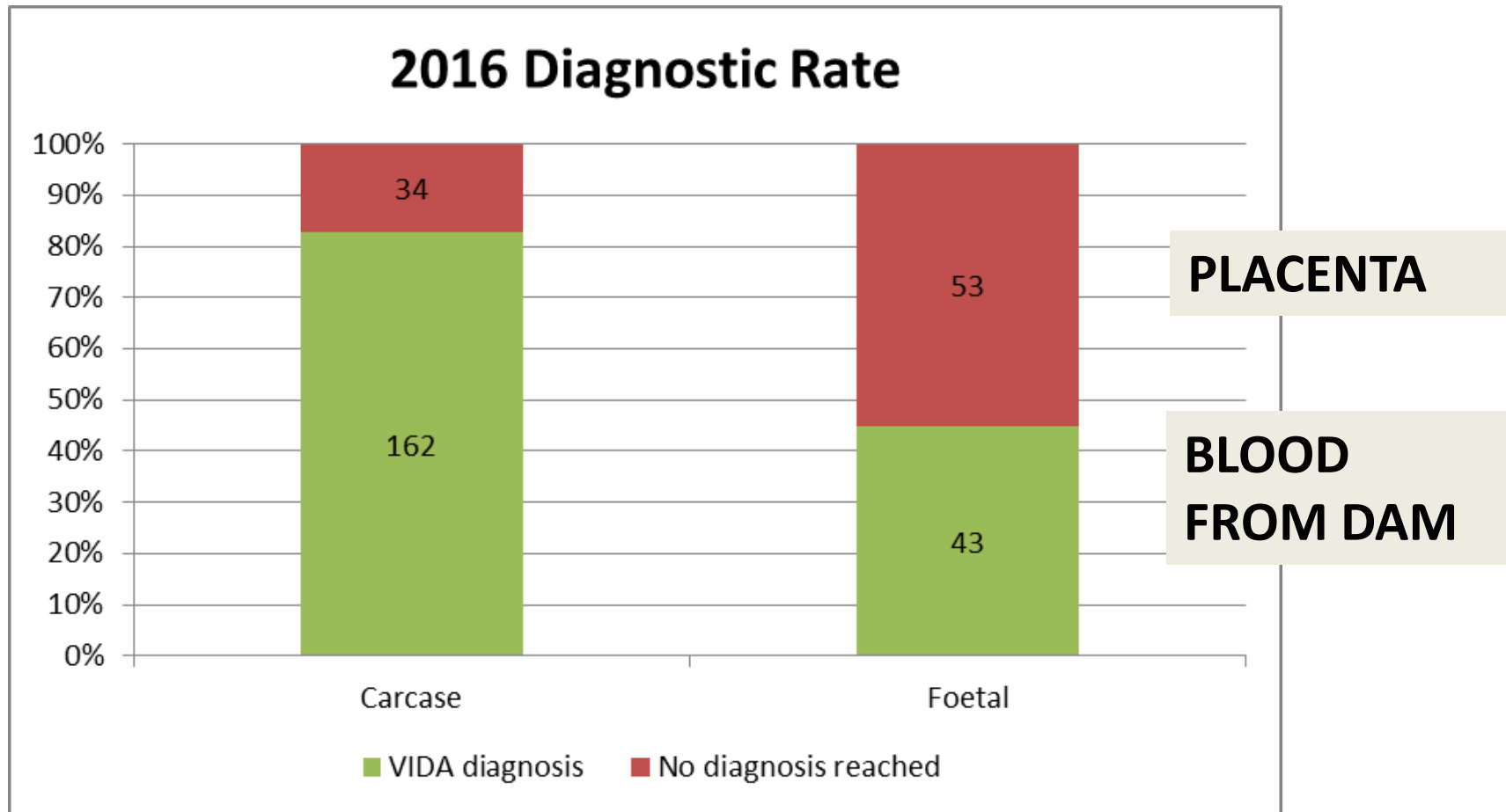
- BVD / BD
- IBR (cattle)
- Salmonellosis
- Leptospirosis (cattle)
- Campylobacter
- Neosporosis / toxoplasmosis
- Brucellosis
- EAE (in sheep)
- Listeria
- B. licheniformis
- Fungal abortion
- Congenital malformations
- Birth associated trauma
- +/- emerging diseases (e.g. including schmallenberg)
- Other bacterial causes
- Iodine deficiency (stillbirths only)

Final report



No evidence of an infectious cause

SAC Vet Services



Aberdeen DSC: Cattle, sheep and pig submissions 2016

SAC Vet. Services



Is this valuable?

- Understanding of herd / flock health
- Confidence that control programmes are working
- ‘Passive’ monitoring for conditions not actively controlled
- Review at annual health planning

Vet kits available



Bovine Abortion Sampling Guidelines

1. Placenta – This tissue is really important if you can get it please! Place a piece of placenta (as clean as possible) in the labelled universal provided. Please include both cotyledon and membrane.

Gram and MZN stains, plus wet preparations to detect fungi are carried out on the placenta as part of the basic package in addition to culture.
2. In a still born calf dissecting out the thyroid and storing half in formalin and half fresh is useful if iodine deficiency is suspected. The fresh tissue can be analysed for iodine content. Fixed tissue can be examined histologically for evidence of iodine deficiency. Fresh liver can be analysed for Selenium content. There is an additional charge for thyroid iodine, liver selenium and histopathology of the thyroid.



2. Foetal fluid- using the pipette fill both red top tubes labelled foetal fluid with as much fluid as possible. Fluid from the thorax/pericardium/abdomen or unclotted blood is suitable. Foetal fluid is tested for BVD (antibody and antigen), **BLAQUEMONT** and **LEADLEY** antibodies as part of the basic package. Foetal fluid can also be tested for **Schmallenberg** antibodies at an additional charge.



3. Foetal stomach contents (FSC) for bacteriology- using the vacutainer needle and remaining red top tube aspirate fluid from the stomach. This should be done so that the sample doesn't contain any contaminant bacteria from the environment.



6. Where tissues are required for histopathology they should be stored in 10 x the volume of formalin after collection. 2cm tissue cubes are required. Histopathology is not included in the basic package and will be charged separately.

- Liver - can be useful in identifying IBR infection
- Lung - histological changes are often evident in cases of bacterial abortion
- Heart - useful in the diagnosis of **Neospora**
- Brain - whole- useful in the diagnosis of **Neospora**
- Thyroid - hyperplasia can indicate iodine deficiency
- Placenta - a **glacoplasia** can be indicative of an infectious cause of abortion

* Please remove sharps from the pack before posting*

Ensure all containers are labelled and tightly sealed, with adequate absorbent material. Packs must comply with packaging instruction P650

<http://www.itvg.co.uk/regulations.pdf>

4. IBR, BVD and **Schmallenberg** virus can be detected from tissue by PCR. This is not included in the basic package and will be charged separately. A 1x1cm square of each tissue in virus transport medium is required. This can be frozen until bacteriology results are available and tested retrospectively.

SBV - brain
BVD - spleen
IBR - liver



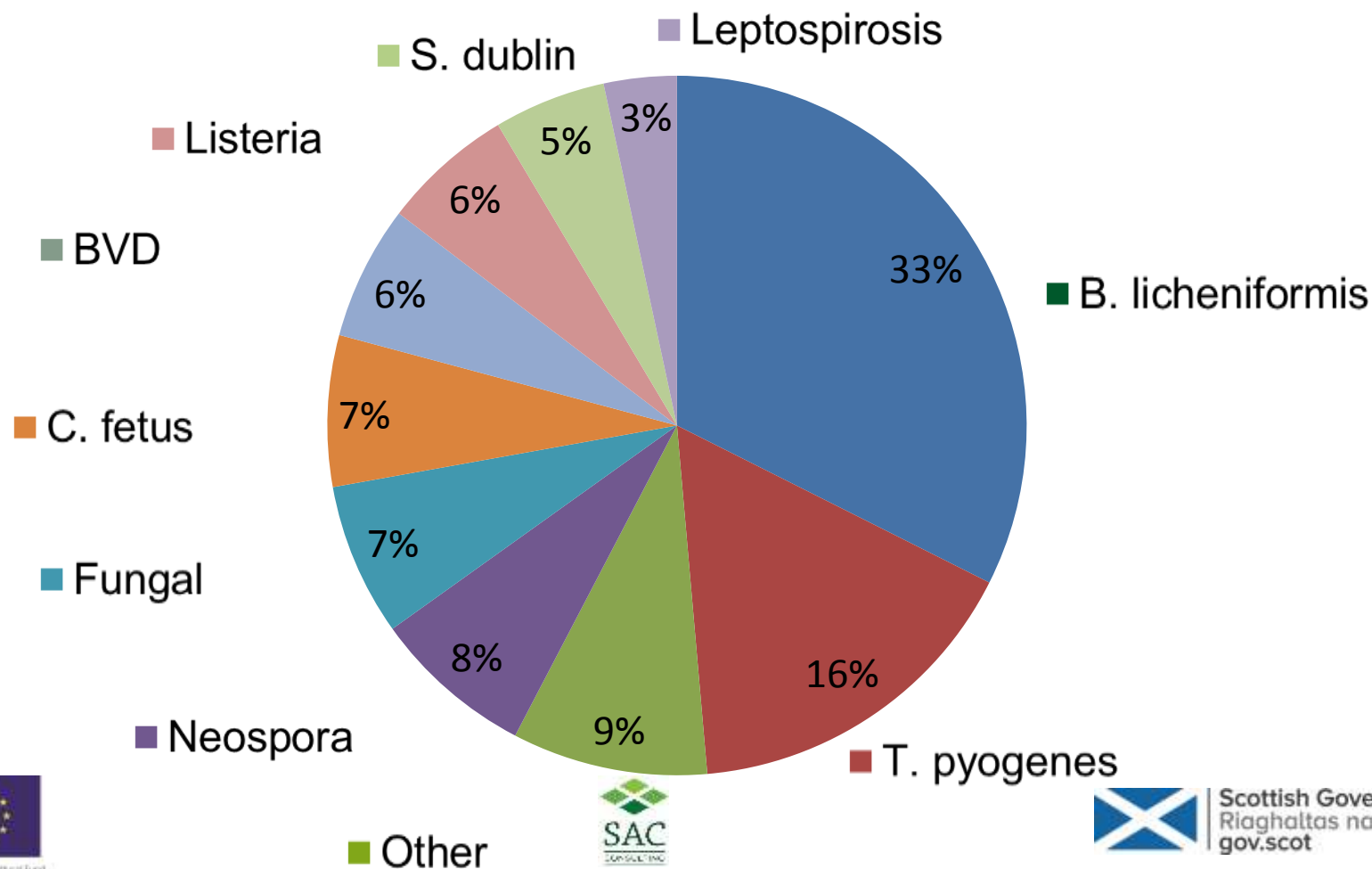
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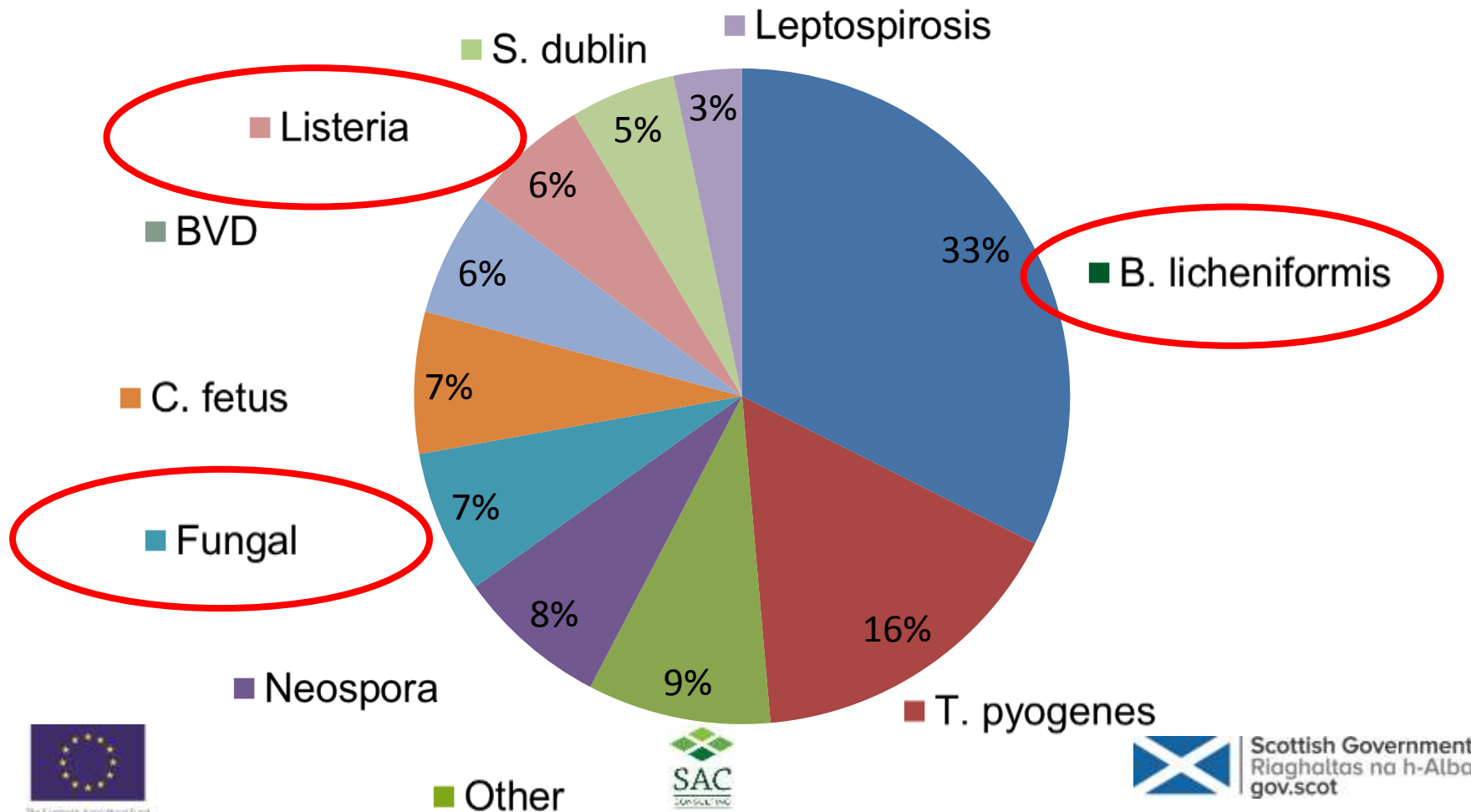
What do we find?

Bovine abortions in the last 10 years



What do we find?

Bovine abortions in the last 10 years



Poor quality silage

- What can I do?
 - Focus on quality silage production
 - Avoid high risk silage in pregnant stock



Poor quality silage

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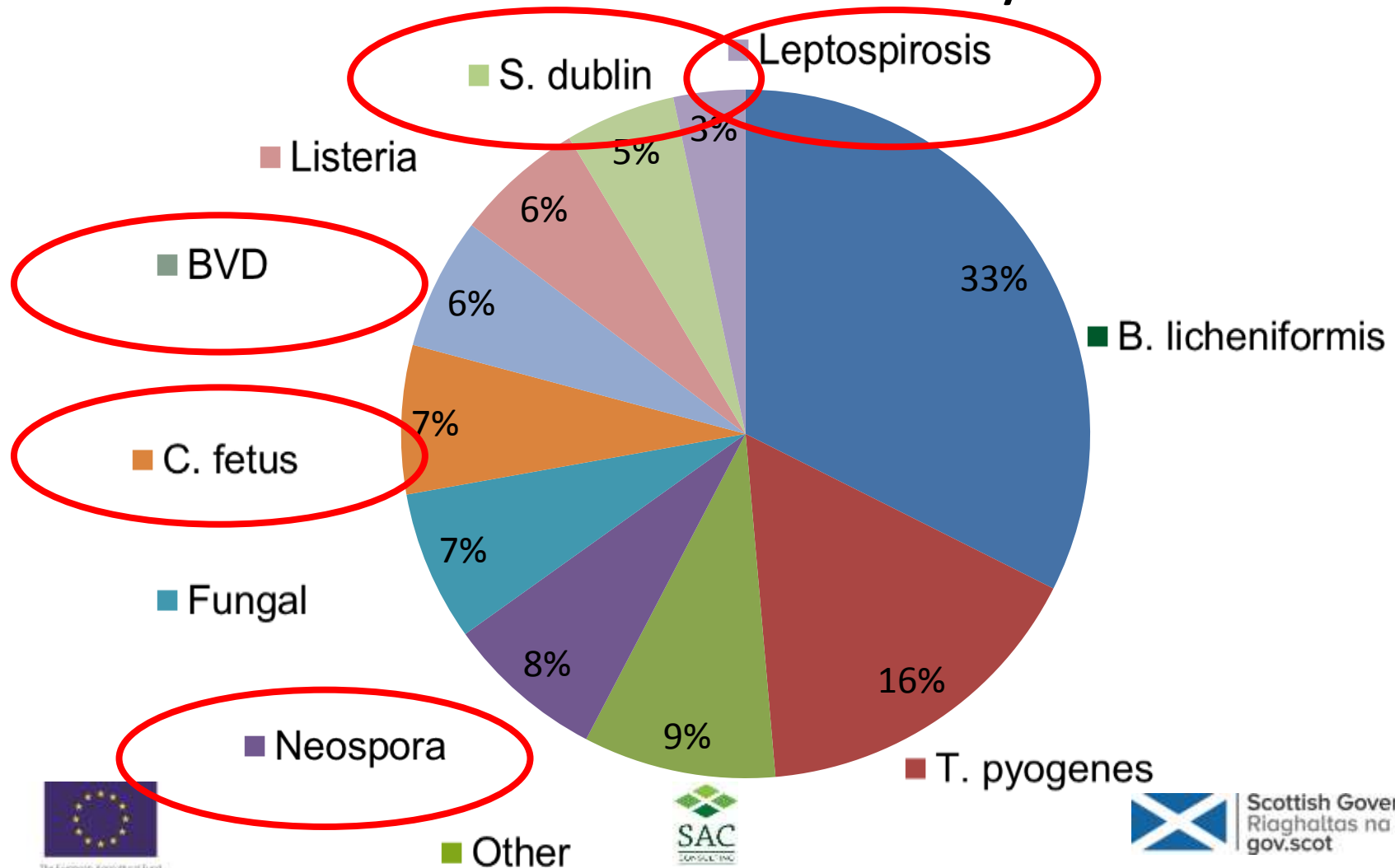


‘Do your best to avoid the worst of it’



What do we find?

Bovine abortions in the last 10 years



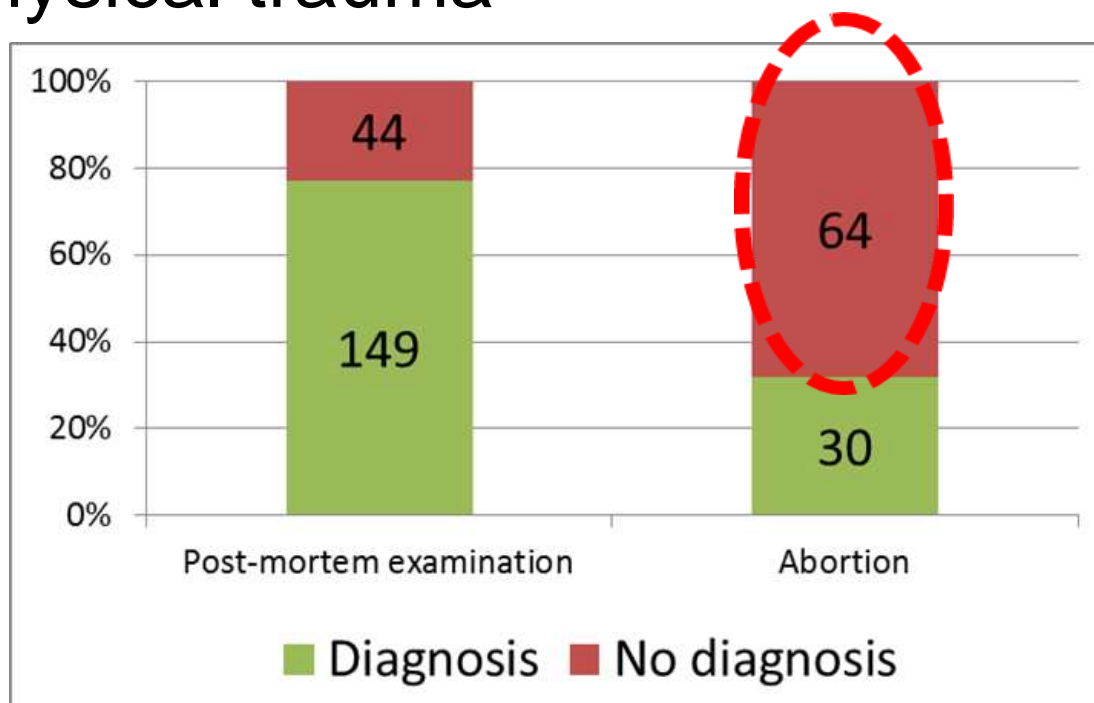
Infectious disease

- What can I do?
 - Health planning - do I have the disease?
 - Yes - Control it
 - No - Stop it coming in
 - Investigate abortions
 - 30-40% chance of diagnosis
 - ‘Rule-out’ infectious diseases

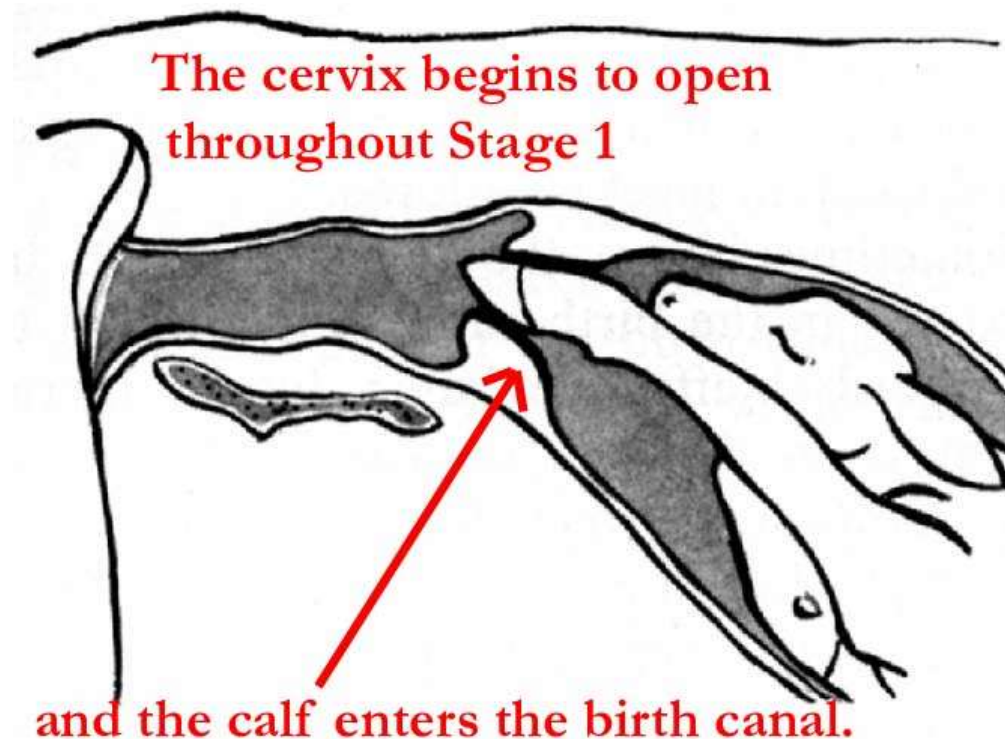
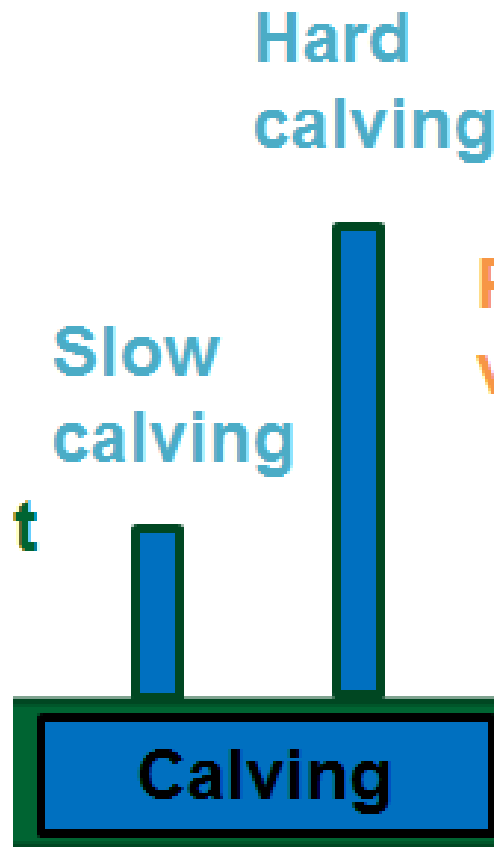


Management

- Stress increases the risk of abortion
 - Cortisol production
 - Physical trauma



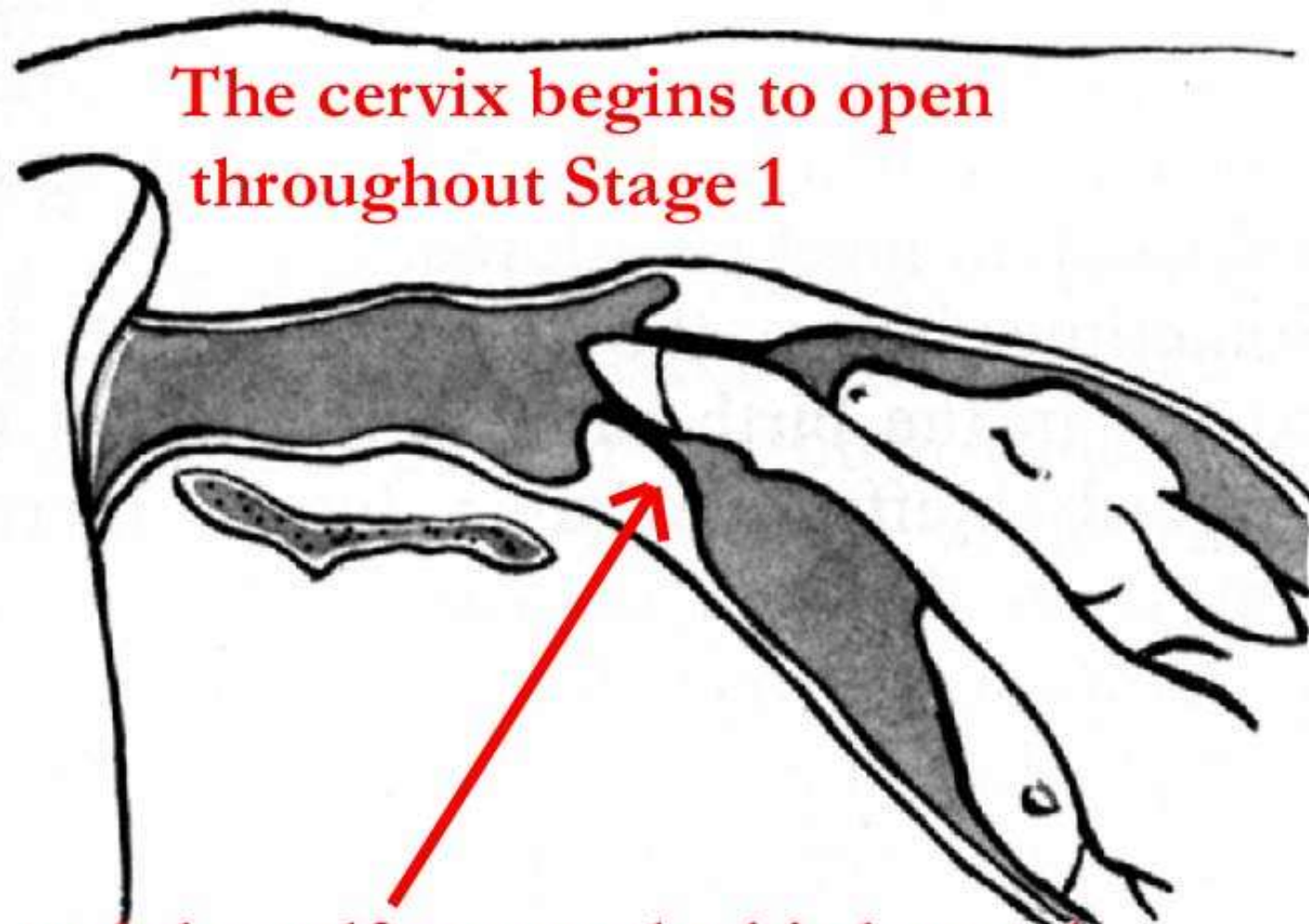
Stillbirths



Stillbirths

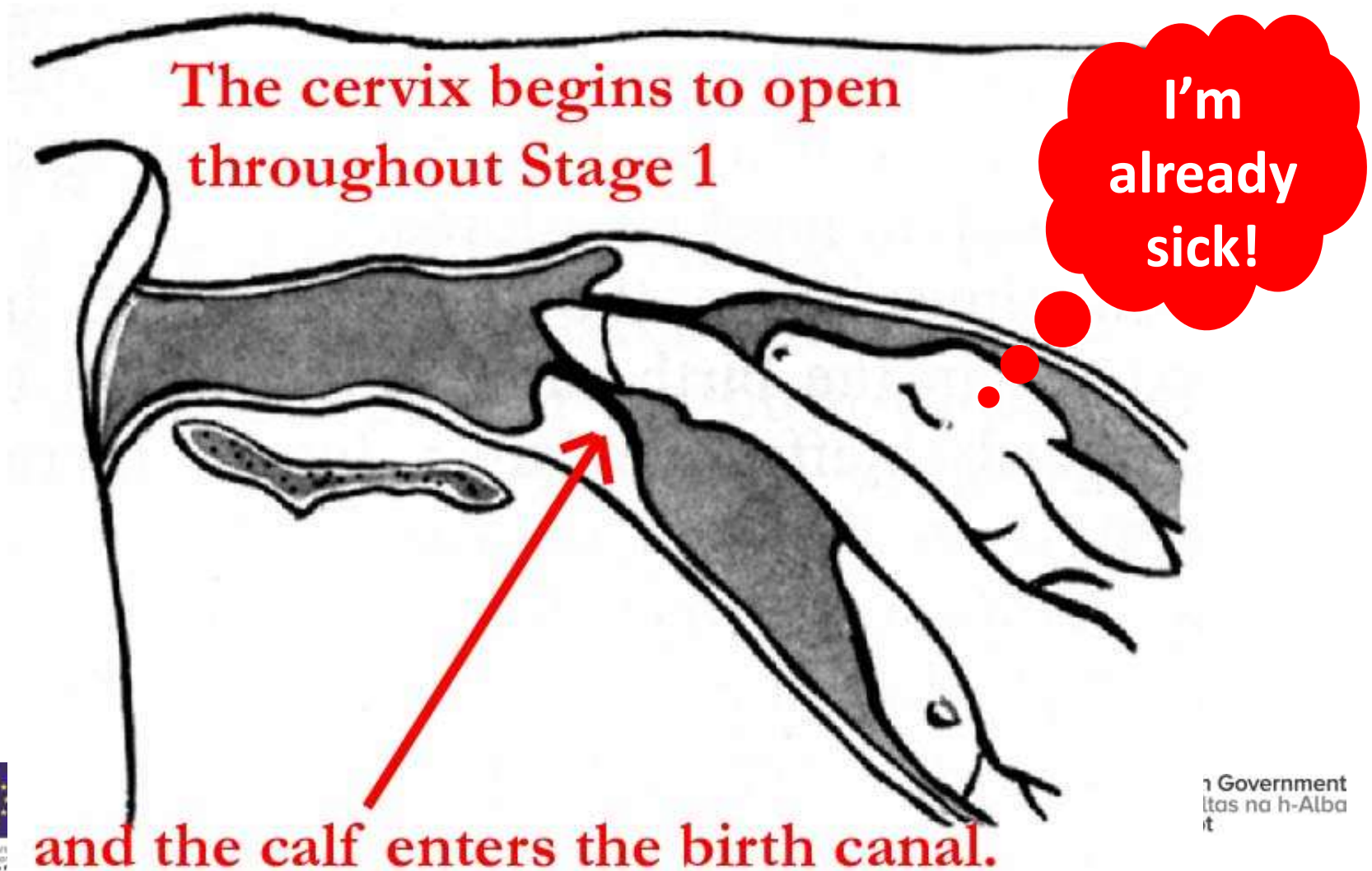


FARM
ADVISORY
SERVICE

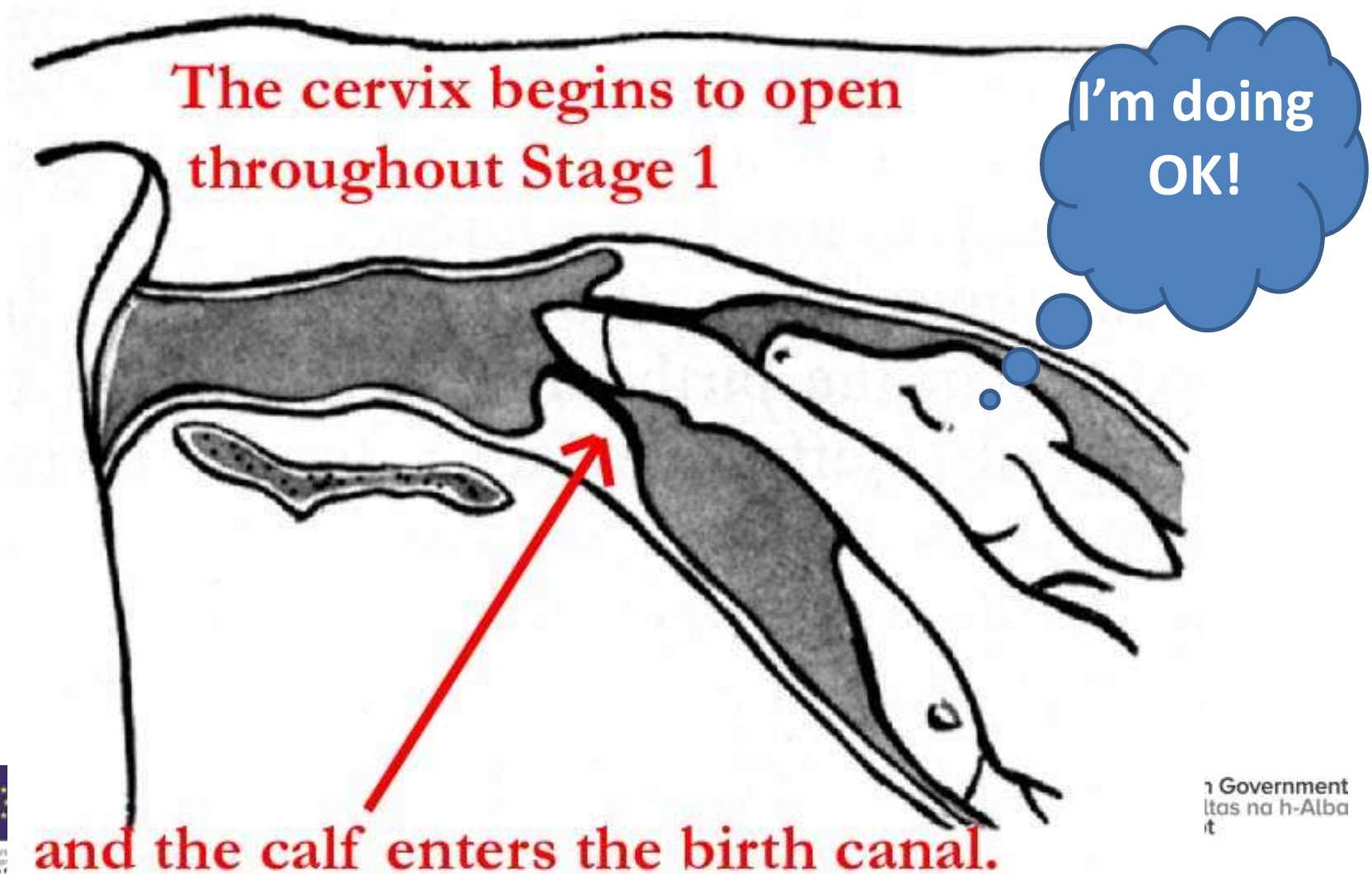


and the calf enters the birth canal.

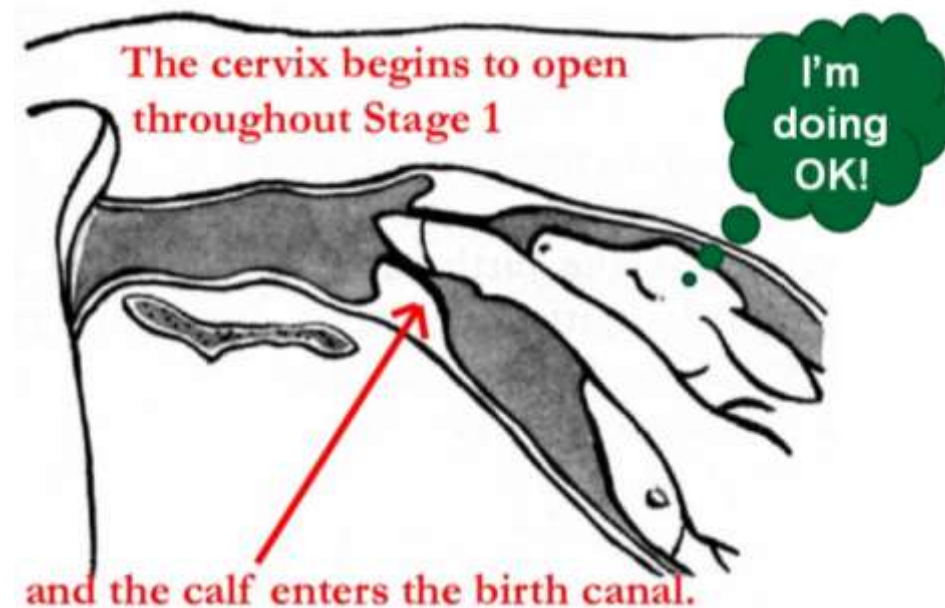
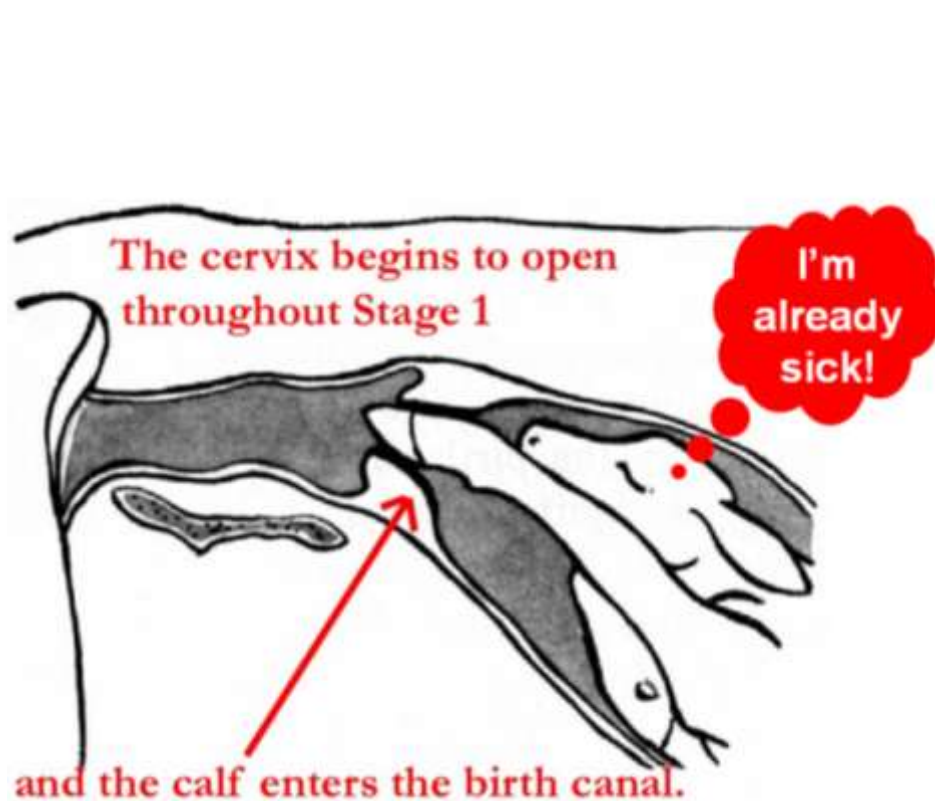
Stillbirths



Stillbirths



Stillbirths



What causes these?



Similar to an abortion

Slow calving

- Nutrition in late pregnancy
 - Energy density – fat cows
 - Calcium / magnesium deficiency
- Movement during early calving



Slow calving

- What can I do?
 - Monitor BCS
 - Check the 'dry cow' ration with a nutritionist
 - Avoid movement / handling during early labour
 - Investigate suspected problems
 - Blood test for energy status
 - Blood test for calcium status



Hard calving

- Foetal oversize
- Pelvic undersize
- Fat cows
- Malpresentation

**40% of beef stillbirths
caused by hard
calvings**

J. Mee, Teagasc



Hard calving

- What can I do?
 - BCS cows
 - Handling facilities
 - Veterinary intervention
 - Genetic selection – dam and bull
 - Breeding decisions – heifers



The Golden Hours



The Golden Hours



**No humoral
immunity**

The Golden Hours



**No humoral
immunity**

**Direct opening to the
blood**

The Golden Hours

**Environmental
challenge**



**No humoral
immunity**

**Direct opening to the
blood**

The Golden Hours

Low energy, cold

**Environmental
challenge**



**No humoral
immunity**

**Direct opening to the
blood**

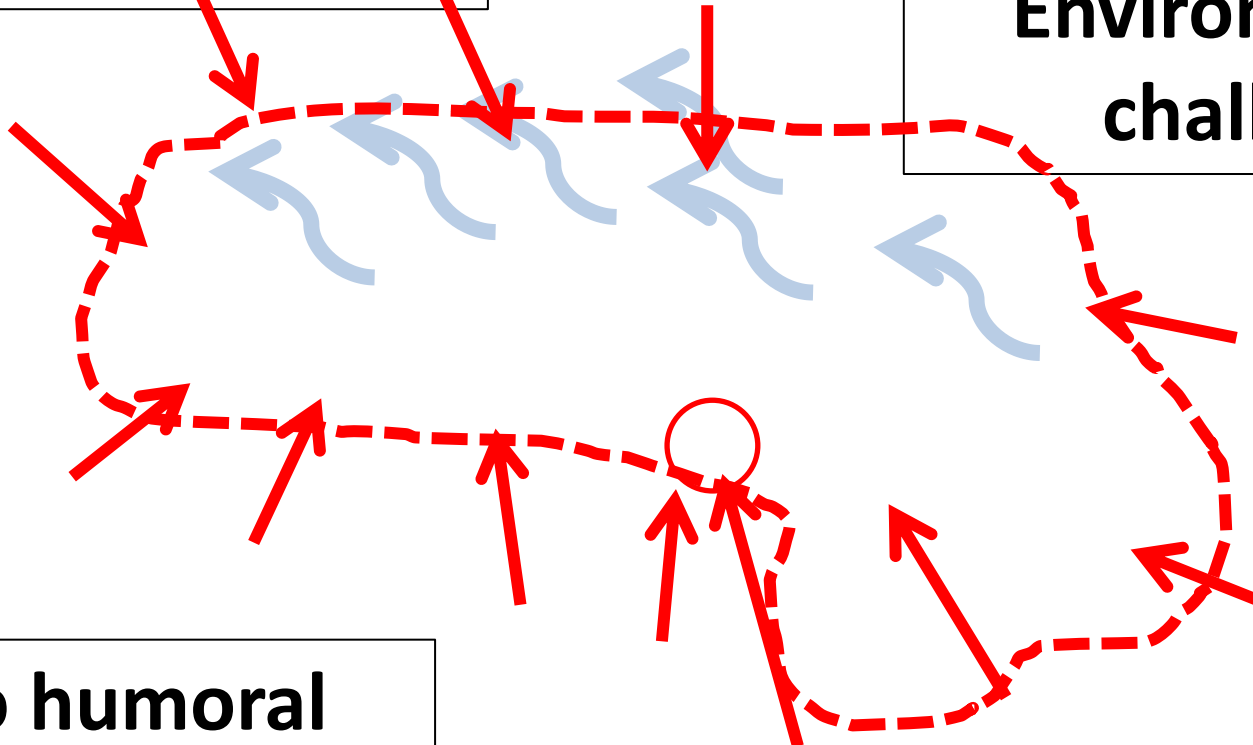
The Golden Hours

Low energy, cold

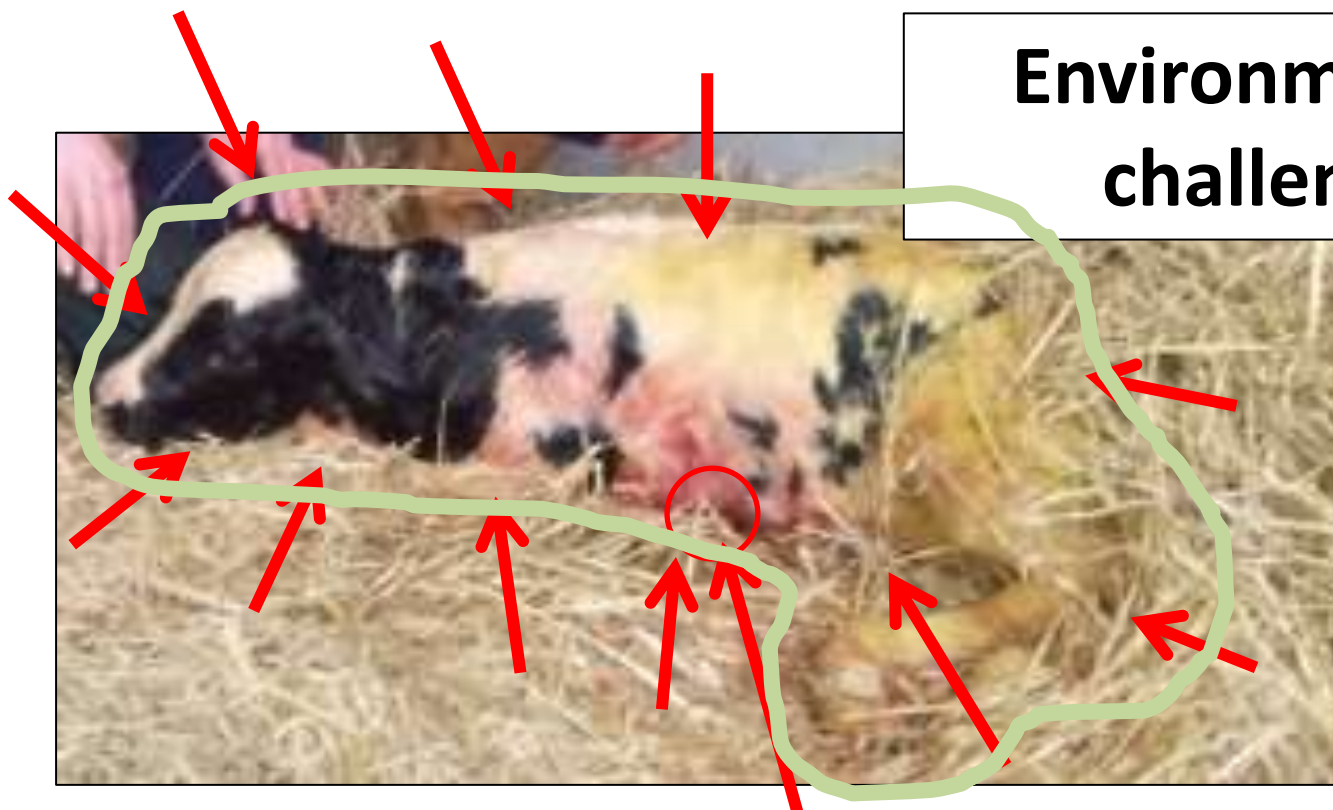
**Environmental
challenge**

**No humoral
immunity**

**Direct opening to the
blood**



Adequate colostrum



**Environmental
challenge**

**Direct opening to the
blood**

Golden hours

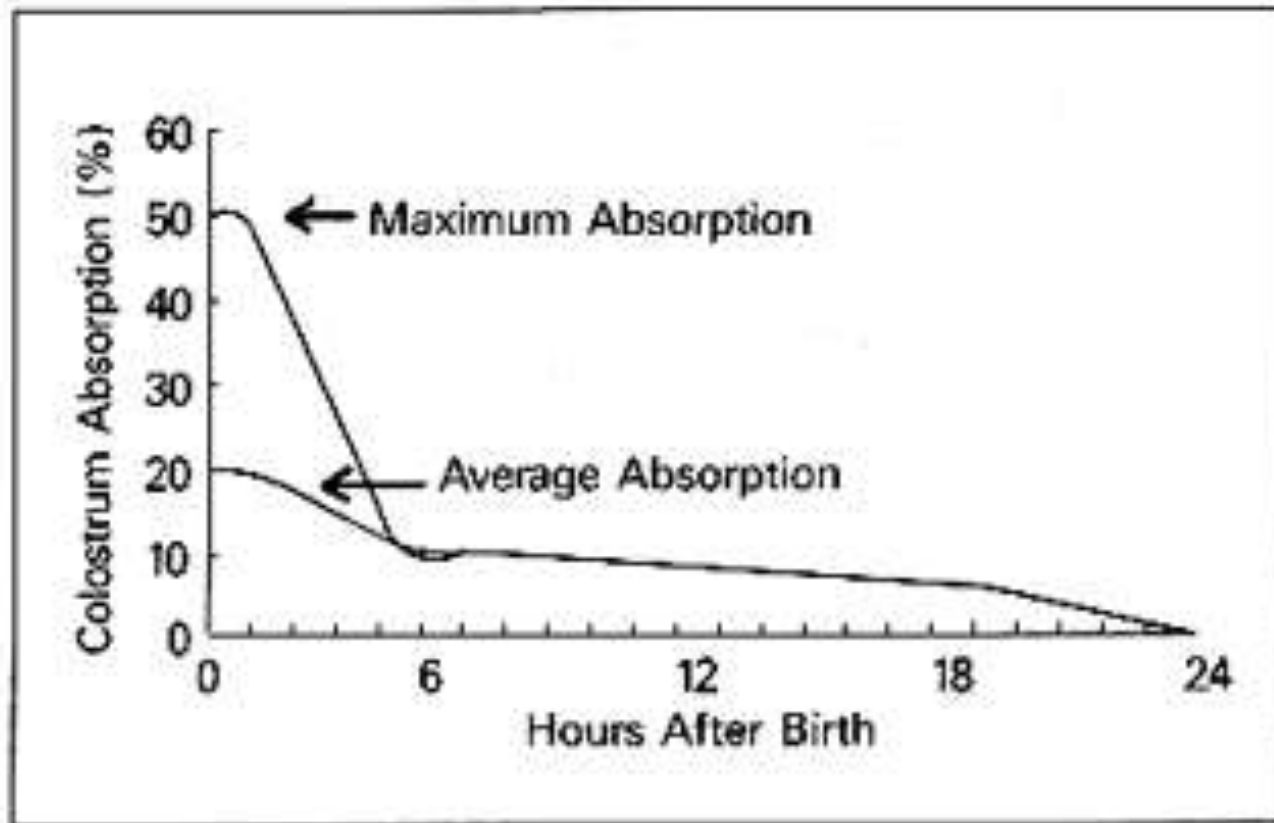
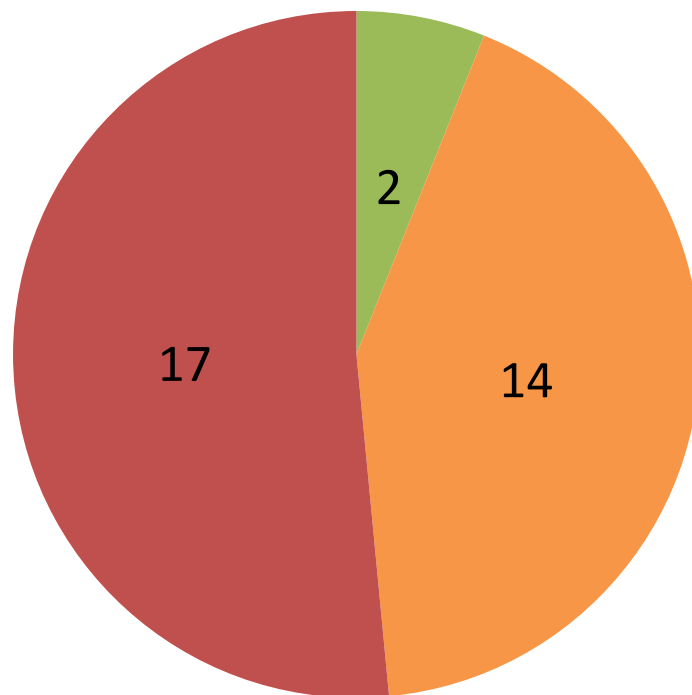


Figure 1. Efficiency of immunoglobulin absorption with time after birth.

Calf deaths in first week

Colostrum levels in calves dying in first week



■ Colostrum OK ■ Partial failure ■ Complete failure

2013-2015 Submissions to Aberdeen and Inverness DSC

Infectious disease

E. Coli
Rotavirus
Coronavirus
Cryptosporidium
Coccidiosis
Salmonella
RSV
PI3
IBR
P. multocida
M. haemolytica
H. somni



E. Coli
Rotavirus
Coronavirus
Cryptosporidium
Coccidiosis
Salmonella
RSV
PI3
IBR
M. bovis
P. multocida
M. haemolytica
H. somni

Monitor colostrum uptake

- Blood sample early on to assess colostrum uptake
- Test for ZST or total protein



Summary messages: Cattle



1. Think about investigating abortions
2. Do your best to avoid feeding the worst silage
3. Investigate stillbirths and slow calvings
4. Monitor colostrum intake

Thank You

