Lung Tissue Diagnostics

Which bacteria and viruses are present in lung lesions at slaughter?

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Bacterial Culture

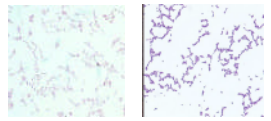
What is it?

Culture allows us to find and grow live bacteria

APP

S.suis

The bacteria are identified using different types of tests



If the bacteria IS found the sample is considered to be POSITIVE

If the bacteria IS NOT found the sample is considered to be NEGATIVE

Benefits

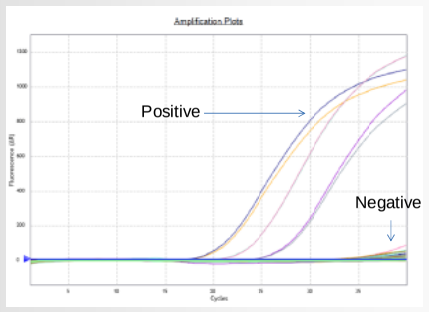
- It only identifies live bacteria which are healthy
- We can store the bacteria long-term for future testing

Limitations

- It cannot be used to detect viruses like SIV and PRRS as they need a living host cell to grow and survive
- It may be hard to identify a bacteria if lots of other microbes are present
- Some bacteria are hard to grow
- It can be time-consuming

PCR

What is it?



PCR allows us to find bacterial and viral genetic material e.g. DNA

If the DNA/RNA of the bacteria/virus is found the sample is considered POSITIVE for that bacteria/virus

If the DNA/RNA of the bacteria/virus is NOT found the sample is considered NEGATIVE for that bacteria/virus

Benefits

- It allows us to determine the presence of viruses and bacteria which may be hard to grow
- We can test multiple samples at the same time

Limitations

- Dead bacteria and viruses can give a positive result and so old infections which are no longer active may be found

Lung Tissue Diagnostics

What did we do?

- At slaughter, lung samples were collected from 50 farms
- Different types of lesions were sampled
- Lungs with no visible lesions were also sampled for comparison
- Each lung sample was tested by bacterial culture and PCR
- In total 7 different bacteria and viruses were investigated across both methods

What did we find?

Herd prevalence of pathogens

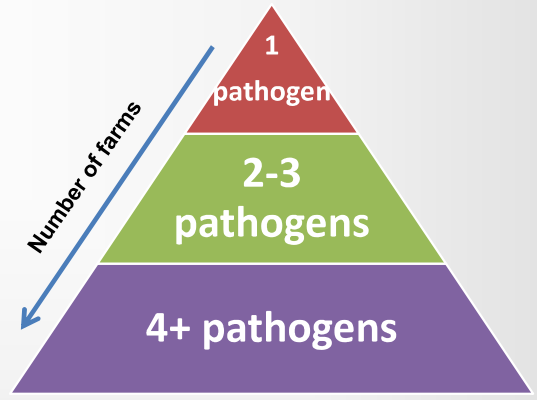
- *M.hyopneumoniae* was the most common bacteria found in lung lesions at slaughter, with PRRS the most commonly found virus

- Despite the high percentage of farms having antibody responses to SIV and APP, low numbers of these pathogens are present in the lung lesions at slaughter

Multiple pathogens are responsible for respiratory disease in pigs

- Most farms (>86%) had more than one pathogen present at slaughter

- Lungs which had visible lesions at slaughter had more pathogens present compared to lungs which had no visible lesions.



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