

Bitesize Biosecurity



SRUC



Bitesize Biosecurity: developing livestock farmer-friendly biosecurity materials and tools, including the use of Artificial Intelligence (AI)



SRUC Multi-disciplinary team includes:

Andrew Duncan, Sandy Carmichael, Suhaib Ahmed

Maria Costa, Ian Hutchinson, Sam Beechener

Lynsey Melville (Moredun), Lorna Pate

Jackie O'Brien (Filming, narration)

Also, Tim Geraghty (Johnes's DST) .. and others

Kate Lamont

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Previous research (low uptake):

- Farmers – dismissive of measures
- Understanding of the word “biosecurity” varies

... farmers may be more receptive when communication is framed positively.

BETTER COST Action output:

- direct interaction and/or collaboration
- audio-visual media
- materials which can be personalised

TWO OBJECTIVES



1. To break down complex biosecurity guidance

- “bite-sized”
- relatable
- user-friendly format

2. To promote biosecurity **discussions and decisions** to improve animal health and support farm management.

- Discussion support tool
- Photos & Videos
- Animation
- Artificial Intelligence

And more: web-application called “Bitesize Biosecurity”.



Johnes Discussion Support Tool



About this app

This tool will give you an approximate cost burden if there is Johnes's Disease in your herd and the savings you could make if you take action to reduce risk of the disease entering or spreading through your herd.

The total cost over 10 years is calculated based on the burden of disease depending on information you enter. This includes the herd size, animal value and how many animals are bought in. By considering the risks/costs associated with these, the overall impact will be estimated. The cost can be broken down in more detail if you choose.

Alongside the cost, you can choose some actions to reduce the risk of spreading Johnes's Disease to generate some estimated potential savings. This can help you consider which actions you want to take and the potential benefit to your farm business.

PLEASE NOTE: As with online calculators for pensions, this tool is designed to help you consider your options in relation to reducing risk of Johnes's Disease coming in to your herd or passing between animals in your herd. It is designed to give estimates of costs and savings, based on assumptions, and the numbers you enter and is NOT designed to accurately predict future income. The work is based on the research of Tim Geraghty.

Developed by Andrew Duncan, Suhaib Ahmed and Kate Lamont



Johnes

Inputs

Herd Info

Number of Cows: 100

Which of the following best describes your herd?
I haven't tested my herd recently but occasionally see clinical cases (one every few years)

Recent Purchasing (last 5 yr)

Animals purchased (per yr): 10

From how many herds (per yr): 4

Stock value

Calf Value (£ per kg): 25

Cow Value (£ per head): 1,500

Calving

Indoor or Outdoor Calving: Indoor

Max. group size first month after calving: 10

Results

Business Impact of Johnes Disease

Annual costs without mitigation
By year 1: £22275
By year 5: £31500
By year 10: £31500

Supplementary Info

Add some additional explanatory/official/other info.

Herd Info (0/2) | Recent Purchasing (0/2) | Stock Value (0/2) | Calving (0/2) | Actions to reduce risks (0/8)



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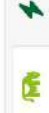
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Herd Info (0/2) | Recent Purchasing (0/2) | Stock Value (0/2) | Calving (0/2)

Developed by Andrew Duncan, Suhail Ahmed and Kate Lauder



Johnes



Inputs

Herd Info

Number of Cows:

Which of the following best describes your herd?
 I haven't tested my herd recently but occasionally see clinical cases (one every few years)



Supplementary Info



Johnes



Mitigation

Choose mitigating measures to see their business impact.

Reduce number animals purchased (per yr)

Reduce number herds purchased from (per yr)

Purchase cattle are from R1 herds only

Ensure purchased cattle are blood and dung negative before entry to herd

Identify high risk cows (>24m) by a blood or dung test at least once per year

Exclude test positive from calving area of the main herd

Sell/isolate heifer calves from high risk cows

Reduce number animals purchased (per yr):

Reduce number herds purchased from (per yr):

Purchase cattle are from R1 herds only: Yes No

Ensure purchased cattle are blood and dung negative before entry to herd: Yes No

Identify high risk cows (>24m) by a blood or dung test at least once per year: Yes No

Exclude test positive from calving area of the main herd: Yes No

Sell/isolate heifer calves from high risk cows: Yes No

Results

Business Impact of Johnes Disease



Supplementary Info

Add some additional explanatory/disclaimer info.

Pig unit biosecurity -
photos



Pig unit biosecurity – PRRS



Lots of short videos;
different styles

*(Resources will soon be available on
www.bitesizebiosecurity.com
and a Bitesize Biosecurity app)*



Pig unit biosecurity – PRRS



Animation

Record voice overs in different languages

- using pig unit workers



The Biosecurity Advice Landscape



From many sources.



Often using specialist language.



Sometimes difficult to find.

Sometimes out of date.

Harnessing AI with care



COWS guide to managing liver flukes in bought-in cattle

Johne's Disease in Cattle

Roundworm, Sheep scab, Fluke, Effective quarantine and treatments

biosecurity by livestock diseases

Collation and organisation by experts.

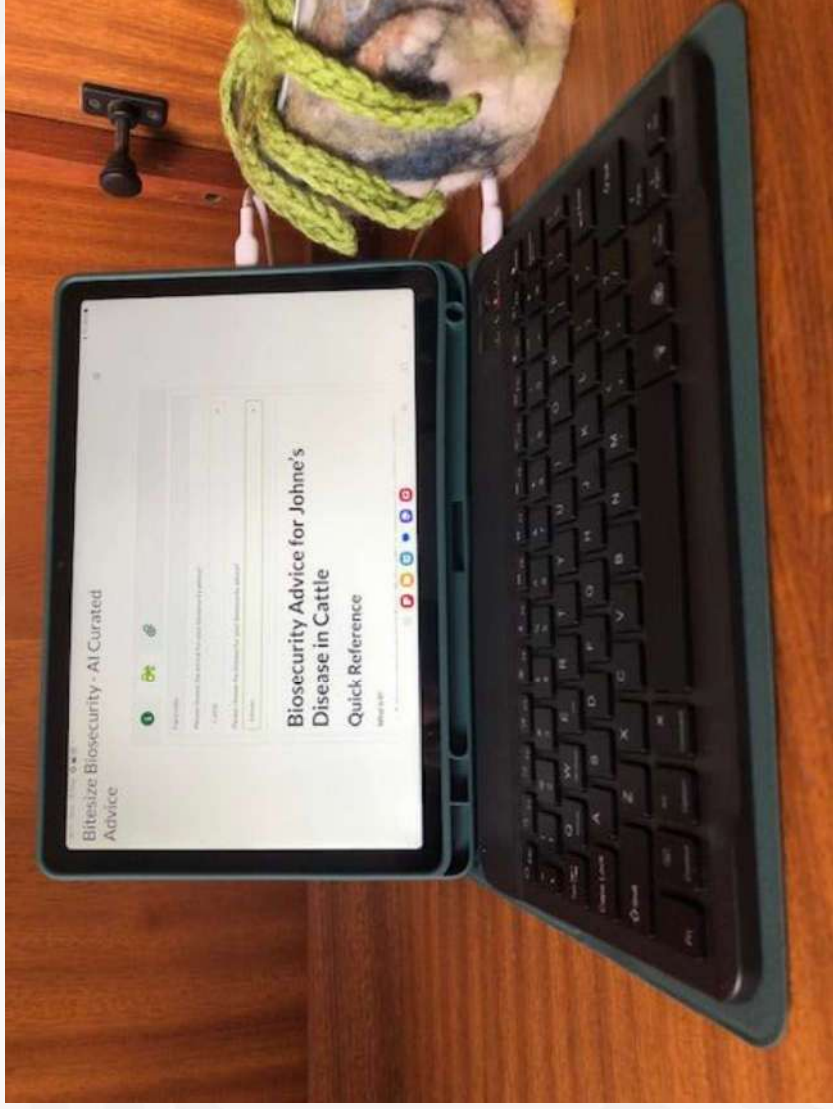


AI reads and summarises key information.



Bitesize Biosecurity Website and App

INPUT FROM FARMERS



Obtaining more feedback:

- In-person demonstration
- Observation (use on farm)
- Link
- Also vets & advisors
- Tweak / improve / suggestions for new material

Innovation? “I’ve seen this before”?

SRUC Bitesize Biosecurity

Risk Maps

Diseases

Surveys

AI Assistant

Webinars

Resources

Bitesize Biosecurity

Arise Infection Control

Arise Infection Control

Surveys

Arise

Bitesize Biosecurity



Bitesize Biosecurity

Hi, I'm Rachel

Home
About Us
Contact Us
Help

Bitesize Biosecurity

Developed for use by professionals

For and about disease in humans, plants and animals

Prevention and control

What you need to know about it

Innovation? “I’ve seen this before”?

SRUC Bitesize Biosecurity



Risk Maps



Diseases



Surveys



AI Assistant



Webinars



Resources

Bitesize Biosecurity



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Join our Facebook community



Follow us on Instagram

Bitesize Biosecurity



Map



Bitesize Biosecurity



Hi, I'm David.

Bitesize Biosecurity



Examples for veterinary professionals

How can I help you with your biosecurity? Watch our video on how to help you with your biosecurity. Watch our video on how to help you with your biosecurity. Watch our video on how to help you with your biosecurity.

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Watch our video on how to help you with your biosecurity. Watch our video on how to help you with your biosecurity. Watch our video on how to help you with your biosecurity.



Plan, Prepare and Protect: People

How can I help you with your biosecurity? Watch our video on how to help you with your biosecurity. Watch our video on how to help you with your biosecurity.

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All about biosecurity
All in one place
Reliable / current
Local

FREE!

Next steps

- Produce more material
- Expand the AI offer
(more localised, real-time alerts, seasonal / weather)
- Gamification
- Android first, then Apple

*(Resources will soon be available
on www.bitesizebiosecurity.com
and a Bitesize Biosecurity app)*

CONCLUSIONS



Healthy animals, Happy farmers!

