

Interpretation of the Johne's Pattern Analysis Report

This report is based on a machine learning algorithm and utilises artificial intelligence to assess the patterns of Johne's Disease and identify high risk animals in your herd. This approach is evidence based and has been published in the peer reviewed literature.

Cows are classified as being likely to be in one of 4 clusters (C1 to C4). Clusters 1 and 2 have been shown to be at low risk of transmitting Johne's Disease whereas Clusters 3 and 4 are considered high-risk.

This new approach also allows us to predict the probability that an individual cow will go on to be high-risk in the future enabling more informed breeding and calving management decisions.

This report should not replace regular herd health visits with your vet or consultant.

For a more in-depth assessment and help with interpretation please seek advice from a suitably qualified advisor.

Where am I headed with Johne's Control?

This graph uses test results in 1st lactation heifers to predict the likely trajectory of Johne's Disease in your herd.

You should be aiming for at least 90% of 1st lactation animals being in low-risk clusters (1&2).

A low cluster score (<15) indicates a low probability of a significant proportion of the current crop of 1st lactation heifers progressing to a diseased state

How risky / at risk are your current management strategies?

This table summarises past, current and predicted future performance.

- What proportion of the herd was, is or is predicted to be in a high-risk cluster (3 or 4)?
- What proportion of dairy calvings were, are or are predicted to be in high-risk cows (cluster 3 or 4 at calving)?
- What proportion of your dairy inseminations were high-risk? - ie What proportion of your dairy inseminations were to cluster 3 or 4 cows?

What is the perceived risk of transmission in the next 4 months?

The risk of maternal and environmental transmission in the next 4 months is predicted as VERY HIGH, HIGH, MODERATE or LOW based on the proportion and density of calvings in cows predicted to be high risk (Cluster 3 or 4)

Are Hidden High-Risk Cows a threat to your herd?

Cluster 3 & 4 cows are more likely to spread / pass Johne's. Whilst Cluster 4 cows are easily identified using current schemes, Cluster 3 cows are often defined as 'low risk' by current classification schemes.

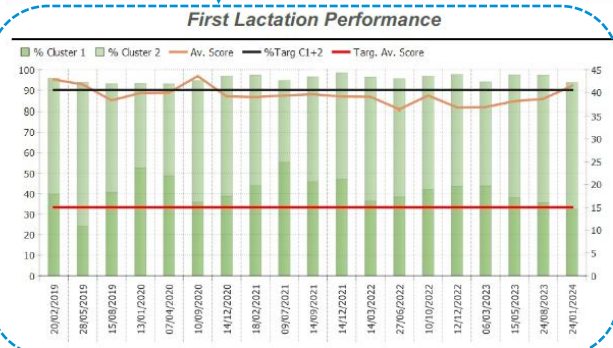
This chart indicates what proportion of your Cluster 3 cows fall into each J-State as well as telling you how many **Hidden High-Risk Cows** you currently have in your herd - ie reported as J0 or J1 but actually classified as being in Cluster 3.

Johne's Pattern Analysis Report

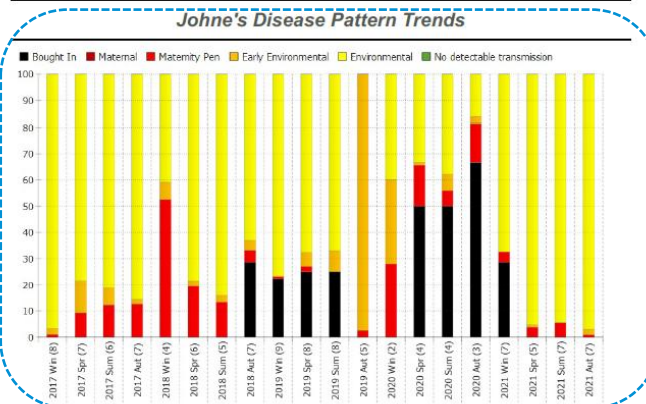
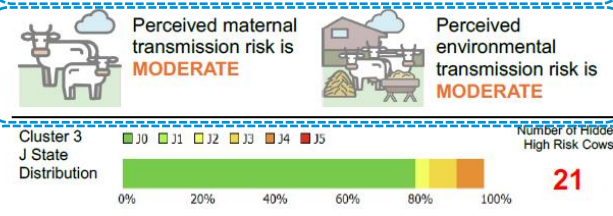


Business Name: Dairy Farming Ltd
Farm: Home Farm
Report Date: 24 Jan 2024
Viewing historic data

Johne's control is a **SIGNIFICANT** issue. The disease situation appears to be **STABLE**



	Past Year	This Test / Quarter	Next Quarter
% of Tests C3 or C4 (n)	6.0 (153)	4.9 (19)	3.6 (14)
High Risk Dairy Calvings % (n)	4.2 (7)	0.0 (0)	9.9 (8)
High Risk Dairy Inseminations % (n)	6.4 (38)	7.4 (21)	-



Overall data quality is **GOOD**
Recent testing data is **EXCELLENT**
Historic testing data is **GOOD**
Titres could not be fully adjusted on some cows which may influence the precision of some individual cow predictions.
Sufficient dairy sires could be identified to facilitate analysis

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For more information please click here or use the QR code
TotalVet 3.7.7 (Beta)
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Is Johne's Disease currently an issue in your herd?

- The current Johne's Disease situation is defined as MAJOR, SIGNIFICANT or MINOR based on a combination of the proportion of 1st lactation heifers in low-risk clusters (1&2) and the proportion of the herd in high-risk clusters (3&4).
- The disease situation is assessed as IMPROVING, STABLE or DETERIORATING based on recent cluster scores in first lactation heifers.

Identifying the most probable route of infection

- By looking at the cluster scores of 1st lactation animals we can determine the most probable route of infection
- The report assesses calves born in each season in each of the most recent 5 years when performance can be assessed (this is influenced by age at 1st calving).
- Routes of infection are defined as
 - ❖ **Bought In** - Purchased
 - ❖ **Maternal Transmission** - Mother to daughter, directly or via dam's colostrum (Vertical Transmission).
 - ❖ **Maternity Pen** - Transmission in the first few days of life (eg the calving yard/shared colostrum) - determined by the disease state of other calving cows (Horizontal Transmission).
 - ❖ **Early Environmental** - Transmission associated with management in the first few weeks of life - determined by the disease state of other calving cows (Horizontal Transmission)
 - ❖ **Environmental** - Transmission likely to be associated with more general hygiene and environmental management and not directly influenced by the Johne's status of cows calving around the same time.
 - ❖ **No Detectable Transmission** - Periods when there was no detectable transmission.

How good is the data quality?

How long has testing been going on for?
What proportion of the herd is tested?
Is there sufficient information to allow titres to be adjusted optimally?
Are service sires reported adequately?
Data is assessed as being EXCELLENT, GOOD, ADEQUATE or LIMITING.