



216 Research paper

**A novel method to identify herds with an increased probability of disease introduction due to animal trade**

by Frössling, J., Nusinovici, S., Nöremark, M., Widgren, S., and A.  
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In **Significant Impact Groups:**

Biosecurity \External biosecurityAnimals

Species targeted: Dairy;

Age: Adult;

**Summary:**

This paper presents a new method to assess herd disease risk in animal movement networks. It is an improvement to current network measures that takes direction, temporal order, and also movement size and probability of disease into account. In the study, the method was used to calculate a probability of disease ratio (PDR) of herds in simulated data sets, and of real herds based on animal movement data from dairy herds included in a bulk milk survey for *Coxiella burnetii*. The results show that the PDR is able to capture the different circumstances related to disease prevalence and animal trade contact patterns. The method shows a potential to be useful for risk-based surveillance, in the classification of herds in control programmes or to represent influential contacts in risk factor studies.

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**Where to find the original material:**

<https://www.sciencedirect.com/science/article/pii/S0167587714002487?via%3Dihub>;

<https://doi.org/10.1016/j.prevetmed.2014.07.013>

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