

# Serological survey of 161 suckler beef herds across the island of Ireland

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## Introduction

The objectives of this study was to determine the herd and within herd prevalences of BVD, IBR, leptospirosis and neosporosis in a large scale study of commercial beef herds on the island of Ireland, and examine herd level factors associated with exposure to these pathogens in these herds.

## Materials & Methods

In all, 161 beef herds from across the island of Ireland participated in this study. Sera from approximately 4000 spring calving cows were screened using commercially available ELISA kits for BVD, IBR, leptosporosis and neosporosis. Data were collected on Microsoft Excel spreadsheets (Microsoft Corporation, Redmond, WA, USA). Statistical analysis was carried out using Stata (Statacorp, Texas, USA). A linear regression analysis was carried out with the herd prevalence of each pathogen as the outcome of interest.

## Results

Table 1. Demographic herd level data

	Mean	Median
Herd Size	145	114
No of breeding cows	53.8	46
Total Mortality rate	3.7	3.2
30 d calf mortality rate	3.7	2.7
Calves per cow per year	0.9	1
Purchase rate	18.6%	13.9%

## Discussion

This study has confirmed like several previous studies that as herds increase in size there is increased exposure to disease pathogens. Farmers with larger herds need to be aware that they need to increase their efforts to avoid the introduction of disease pathogens to their herds, to establish the health status of their herds and determine what mitigation measures are required to address those diseases. This study has also shown that there are interactions between pathogens. This suggests that there is a common factor common to the exposure among these herds, which is likely to be biosecurity.

Table 2: Summary of pathogen herd level prevalences, animal level prevalences, and % herds vaccinating

Pathogen	Herd prevalence	Mean animal level prevalence	% herds Vaccine
Bovine Herpes virus	90%	39.8%	18%
BVD	100%	77.7%	32%
Leptosporosis	91%	65.7%	47%
Neosporosis	67%	5.7%	NA

Table 3: Summary of linear regression models, describing variables remaining in the linear regression models

Pathogen	Factors in final model
Bovine Herpes virus	Neospora within herd seroprevalence, Disclosure of BVD virus positive calves in the herd, Herd Size, overall mortality and mortality up to 30 days
BVD	Neospora within herd seroprevalence, overall mortality and calves per cow per year
Leptosporosis	Herd vaccinating for BVD, 2014 mart purchases, herd size
Neosporosis	Bovine Herpes virus within herd seroprevalence, Disclosure of BVD virus positive calves in the herd

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