

A descriptive summary of herd-to-herd variation of disease incidence and related management factors on 18 New York State dairy farms

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Introduction

The incidence of common dairy cattle diseases varies widely across U.S. herds. While some variability can be attributed to general herd management differences, recent research has also shown that other contributing factors exist such as variation in case recording and case definitions used for the same diseases (Wenz and Geibel, 2012) (Espadamala et al., 2018). The objectives of this project were to: 1) describe the current incidence of 4 diseases commonly treated with antimicrobials on dairy farms, and 2) identify if similar variations in case definitions and recording exist among New York dairy farms as have been identified in other regions.

Materials and methods

A convenience sample of 18 herds was selected by farm consultants from 3 regions of New York state. Selected herds used DairyComp 305 (Valley Ag Software, Tulare, CA) for disease and treatment recording, had a herd size of greater than 300 lactating cows, and had a non-organic milk marketing status. Data collection involved a farm visit and analysis of DairyComp 305 records. Farm visits were conducted by regional extension agents and included the completion of a questionnaire by the herd owner about herd management and herd protocols among other topics. Farm records were analyzed with a focus on mastitis and uterine disease in lactating cows and neonatal calf pneumonia (NCP) and neonatal calf diarrhea (NCD) in pre-weaned calves.

Results

The average herd size of the 18 enrolled farms during 2022 was 1,381 adult animals. The average monthly incidence of mastitis was 2.2% and ranged from 0.3% to 5.5%. The average monthly incidence of retained placenta (RP) was 7.6% and ranged from 1.8% to 50.7%. The average monthly incidence of metritis (MET) was 5.1% and ranged from 0.4% to 18.1%. The average monthly incidence of NCP on farms reporting an incidence greater than 0 was 14.1% and ranged from 0.1% to 28.2%. One farm reported a 0% monthly incidence of NCP for all months of 2022. The average monthly incidence of NCD on farms reporting an incidence greater than 0 was 12.5% and ranged from 0.1% to 39.8%. Six

farms reported a 0% monthly incidence of NCD for all months of 2022. Event names used for the same disease were compared across farms for NCD and NCP. Four different event names were used to record NCD across enrolled farms. Seven different event names were used to record NCP across enrolled farms.

Herd treatment protocols and questionnaire results were used to summarize each farm's case definition for MET and NCP. All 18 farms used abnormal vaginal discharge (VD) as a criterion for MET diagnosis. Metritis was further clarified on 13/18 farms by the presence of abnormal VD having a fetid odor. Rectal temperature was not measured, or the presence of a fever was not included on 2/18 farms as a criterion for MET diagnosis. The most common clinical signs used in a case definition of NCP were respiratory rate or effort and the presence of a fever, both used by 13 of 18 farms. Presence of a cough was used on 12/18 farms in the case definition of NCP and 10/18 farms used nasal discharge as a criterion for NCP. Less common clinical signs used were anorexia or depression (7/18), ear droop or head tilt (5/18), and ocular discharge.

Significance

A wide variation existed between farms in how disease was defined and recorded. Survey responses and the surprisingly low disease incidence on some farms suggested that not all diseases were recorded in computer records, especially in youngstock. These inconsistencies made it difficult to calculate accurate disease incidences and even more difficult to compare incidences between farms. There is an opportunity for veterinarians to work more closely with producers to develop clear case definitions and standardized recording systems for both adult and youngstock diseases.

