

2009**JAM**

JOINT ANNUAL MEETING

**ADSA® · CSAS · ASAS Montreal, Quebec, Canada July 12-16****Viewing Abstract # 32255****Abstract Preferences****-1st Section Preference:**

Animal Health

-2nd Section Preference:**-Presentation Format:**

poster

-Are you a member of ADSA-ASAS? yes**Member ID# 73376****-Is this an invited abstract?****Abstract & Author Information****Decision-making for early postpartum subclinical mastitis**

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A decision tree model was developed to study the economic outcomes of testing and treating early postpartum cows for subclinical mastitis. The model evaluates sequential decisions that determine economic outcomes based on a 305-d lactation. Logistic regression models were used to predict positive and negative results of 2 diagnostic tests: quarter somatic cell count (SCC) or California Mastitis Test (CMT). The tests were used to detect intramammary infection (IMI) for different DIM (2 to 8), parity statuses (heifer or cow), and a defined SCC threshold. Producer decisions for each cow included (1) test or no test, (2) if test is pursued, what type of test (CMT or SCC), and (3) a final decision: cull, segregate, administer antibiotics, or take no action. Each intermediate or final node of the model was associated with an economic outcome that the decision tree used to find the economically optimal pathway. The cost of subclinical mastitis was assessed as the aggregation of five factors: (1) milk loss, (2) milk premium loss, (3) premature culling, (4) clinical flare-ups, and (5) transmission to herd mates. These costs were a function of the lactation curve, milk price, defined SCC threshold, livestock prices, and a defined prevalence of contagious mastitis pathogens. Preliminary results indicate, in general, the selection of CMT and no action for negative cows. Seems that the administration of antibiotics could be a feasible option for positive cows, especially when a cow is in first parity (increased rate of cure), milk from a treated cow is used for heifer feeding, and the prevalence of contagious pathogens is high. The cost of mastitis under an optimal policy would vary between \$142 to \$225 per cow per 305-d lactation, and depend strongly on mastitis prevalence, SCC threshold, milk price, milk production level of cow, and parity.

KEYWORDS

decision tree

mastitis cost
mastitis economic impact

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