

Wednesday, July 15, 2009

## POSTER PRESENTATIONS

### Animal Health

**W1 The economic impact of five dairy cattle clinical diseases as measured by the correlation between Lactational incidence risk and the income over feed cost in Wisconsin dairy herds.** M. C. Ruiz\* and V. E. Cabrera, *University of Wisconsin, Madison.*

The objective of the study is to show the reduction in profit associated with herd level disease. The association between the lactational incidence risk (LIR) of five production diseases and the income over feed cost (IOFC) is being established in 30 Wisconsin dairy herds. The studied diseases are: (1) milk fever, (2) retained placenta, (3) displaced abomasum, (4) clinical ketosis, and (5) ovarian cyst. The incidences of these diseases is monthly calculated using standardized definitions to report cases. The IOFC is calculated for each herd according to DHI production records, milk check prices and feed costs reported by the producers. The IOFC is regressed against the LIR of the diseases to obtain the economical losses associated to each of the studied diseases. Preliminary results are showing that the LIR of the diseases found in this study are inside the LIR ranges previously reported in the literature, with exception of displaced abomasum, which seems to be higher than previously reported. Results are suggesting that the 2 most economically important diseases impacting the IOFC are clinical ketosis and displaced abomasum. Inferences from our regression models are indicating that 1% of LIR increase is associated with \$0.15/cow/day and \$0.08/cow/day of IOFC losses for clinical ketosis and displaced abomasum, respectively.

**Key Words:** disease economic impact, production disease, profitability measurement

**W2 Cows response to glucose tolerance test (GTT) and periparturient diseases: Preliminary study.** G. Matteo\*, C. Chiara, C. Mauro, and M. Massimo, *Department of Veterinary Clinical Sciences. University of Padua, Legnaro, Padova (PD), Italy.*

Most of the metabolic diseases occur within the first 2 weeks of lactation and most periparturient abnormalities have some metabolic element as a component of the sufficient cause of clinical disease. In pregnancy and lactation the glucose requirements are considerably high than and many studies on ewes demonstrated that as pregnancy advances, circulating maternal insulin concentrations decline and the insulin response to glucose is reduced. Insulinemia decreases during the last third of gestation and early lactation: this have been postulated to be the result of a decreased response of the pancreas to insulinotropic agents. Additionally, the sensitivity of peripheral tissues to insulin is reduced. The objective of this study was to evaluate cows response to glucose load in order to identify potential differences in insulin sensitivity/glucose resistance by circulating concentrations of glucose. Eighteen dairy cows in late dry period (10±5 days from predicted calving) have been submitted to glucose load that consisted in i.v. injection of 0.5g/kg bw (using 50% glucose solution). Glycaemia was measured before the glucose infusion (T0) and at 10 minutes (T10), T20, T40, T80 after the infusion. The basal glycaemia of cows (T0) was 59.60±5.39mg/dl; the mean glycaemia at T10 was 155.40±21.83 at T20 was 128.80±20.05 and decreased progressively until T80. A difference was observed at T80

when some cows reached again the initial glycaemia but others did not. According to this difference we divided cows into two classes: 1 (normal cows) with ratio T80/T0≤1.05, 2 (glucose resistant cows) with T80/T0≥1.05. This classification is justified by the statistically significant difference present between T80 in group 1 and group 2 (P≤0.001). We think that these results are important to start a research about glucose metabolism of dairy cows in the transition period and to understand their susceptibility to periparturient diseases related to their ability to metabolize glucose in peripheral tissues. We could suppose that cows with different response to glucose load will probably present different clinical situation after parturition.

**Key Words:** dairy cows, pregnancy, glucose metabolism

**W3 Effect of modified yeast extract and HSCAS containing mycotoxin adsorbent on blood metabolites of dairy cows challenged with aflatoxin B1.** M. R. Akkaya<sup>1</sup>, M. A. Bal<sup>1</sup>, F. Inanc Tolun<sup>1</sup>, F. Bilge<sup>1</sup>, Y. Atli<sup>1</sup>, and V. Akay\*<sup>2</sup>, <sup>1</sup>*Kahramanmaraş Sutcu Imam University, Turkey,* <sup>2</sup>*Global Nutritech Ltd., Kocaeli, Turkey.*

Mycotoxins are secondary metabolites of fungus and cause economical losses in livestock production. An experiment was conducted to test the efficacy of modified yeast extract and HSCAS containing mycotoxin adsorbent (MP; MYCOPURGE®) on blood metabolites of dairy cows fed an aflatoxin B1 (AFB1) containing diet. Eighteen lactating Holstein cows were used in a 3×2 factorial arrangement of randomized block design. Cows were assigned to one of the six treatments of a 14 d period. Treatments (T) were: 1) control (no MP and no AFB1); 2) no MP + 0.6 mg AFB1; 3) 10 g/d/cow MP + no AFB1; 4) 10 g/d/cow MP + 0.6 mg AFB1; 5) 20 g/d/cow MP + no AFB1; and 6) 20 g/d/cow MP + 0.6 mg AFB1. Blood samples were taken from d 1 through d 8 and again on d 14 before feeding. Blood urea nitrogen concentration was lower (P<0.05) for T6 (12.3 mg/dL) than T2 (14.3 mg/dL). Creatinine concentration was higher in MP supplemented cows fed with AFB1 than cows fed no AFB1 (MP\*AFB1 interaction; P<0.01). Although total cholesterol level was reduced by AFB1 feeding (193.6 vs. 240.9 mg/dL for T2 and T1; P<0.01), MP supplementation effect was not observed across treatments. The total triglyceride level was lower for cows that received T4 (16.5 mg/dL) and T6 (17.7 mg/dL) compared to T1 (25.6 mg/dL; MP\*AFB1 interaction; P<0.01). Although serum alanine aminotransferase level was reduced by AFB1 challenge (57.5 vs. 77.4 U/L for T2 and T1), MP supplementation increased the level of this enzyme in both T4 (65.1 U/L) and T6 (70.5 U/L; P<0.01). However, alkaline phosphatase level was reduced by MP supplementation in both T4 (34.9 U/L) and T6 (30.9 U/L) compared to the AFB1 challenged cows in T2 (70.5 U/L; P<0.01). Although serum albumin concentration was reduced by AFB1 feeding (1.49 vs. 1.63 g/dL for T2 and T1; P<0.01), MP supplemented cows resulted in a higher serum albumin regardless of AFB1 challenge, averaging 1.67 g/dL (MP effect; P<0.01). Results indicate that impaired blood profiles in AFB1 challenged cows may be controlled by supplementing modified yeast extract and HSCAS containing mycotoxin adsorbent.

**Key Words:** modified yeast extract, aflatoxin, dairy cows