

Influence of a Maternal Dietary Yeast Supplement on Immunoglobulin Concentrations in Foals from Birth to Four Months of Age

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Previous studies in multiple species have shown that maternal diet can affect immunoglobulin concentrations in their resulting offspring. To our knowledge, the effect of maternal dietary yeast supplementation on immunoglobulin levels in foals has not been studied. In this study eight Quarter Horse mares (14.5 ± 7.5 yr) were randomly assigned to one of two groups: Yeast or Control. All mares received a control diet of 0.5% BW of a 16% CP pelleted concentrate with water and mixed grass hay ad libitum. Mares in the yeast treatment group also received 1g/45.4 kg of BW/d of a live culture of *Saccharomyces cerevisiae* from 300 d of gestation to 90 d post-foaling. All mares were vaccinated at d 300 of gestation against Eastern and Western equine encephalomyelitis, equine rhinopneumonitis (EHV-1 and EHV-4), equine influenza (type A2), tetanus and West Nile virus. Blood samples were collected from the foals via jugular venipuncture immediately after parturition (d 0), at 12 and 24 hr and 30, 60, 90, and 120 d post-foaling. Sera samples were analyzed for total IgG including IgGa, IgGb, and IgG(T), as well as IgA, IgM, and IgE concentrations using commercial ELISA kits. Data were analyzed using PROC MIXED of SAS and a p-value of ≤ 0.05 was considered statistically significant. Supplementing the maternal diet with live yeast did not influence foal IgGa, IgGb, IgA, IgM, or IgE concentrations. However, IgG(T) concentrations were significantly higher ($P = 0.0063$) on d 60 post-foaling in foals born from mares fed the yeast supplement compared to controls. Overall, maternal dietary yeast supplementation during late gestation and early lactation did not influence immunoglobulin concentrations in their foals.