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Changes in Mare Milk Composition in Response to Concentrate Feeding

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Milk is a complex and adaptive substance that sustains neonatal foals. Mare milk is highly variable and influenced by factors such as diet and stage of lactation. Understanding the influence of maternal diet on mare milk composition is important in the management of broodmares for the optimization of foal developmental outcomes. This study aims to evaluate the short-term effects of a concentrate meal high in nonstructural carbohydrates on the macronutrient composition of mare milk.

Six Thoroughbred mares (5 to 7 days postpartum) will be used for this study. The mares will be fed two concentrate meals per day with ad libitum forage. A pre-feeding milk sample will be collected from each mare then milk will be collected hourly for 12 hours after concentrate feeding. Milk samples will be analyzed using Fourier Transform Infrared Spectroscopy to measure the macronutrient composition (protein, fat, total carbohydrates, and total solids). Blood samples will be collected from the mares via jugular venipuncture and analyzed for glucose using a glucometer. The data will be analyzed using an ANOVA with repeated measures to evaluate the changes in nutrient concentration over time.

The results of this study will be presented at a scientific conference and a manuscript will be prepared for publication in a peer-reviewed journal.