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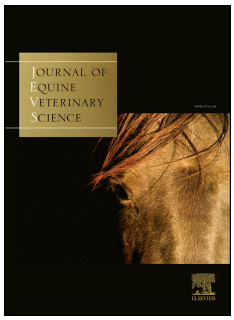

Markers for predicting overweight or obesity of broodmares

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Markers for predicting overweight or obesity of broodmares

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Abstract

Obesity has become of great concern to all equine community from both veterinary and welfare points of view. For estimating obesity markers of brood mares, 17 mares with body conditions were subjected to blood sampling and ultrasound examination to measure rump fat for six consecutive weeks. Body length (L), girth (G) and height (H) were measured to estimate body weight (BW), body fat %, body fat mass (BFM) and body mass index (BMI). Mares were classified into three groups according to body condition score (BCS) and rump fat thickness (RF). Overweight mares (O) had BCS > 7 and RF >7mm, moderate (M) had BCS and RF >3 to ≤7, and emaciated (E) had BCS and RF ≤3mm. Glucose, triglycerides, nitric oxide, insulin, insulin like growth factor-I (IGF-1), leptin, ovarian hormones, thyroid hormones were measured. Results revealed that BCS, G, L, L*G*H, BW, RF, fat %, BFM correlated significantly (P <0.0001) with body condition. T_4 concentrations of E mares were significantly high (P =0.04) but T_3 concentrations tended (P =0.07) to be low. Insulin (P =0.06), and IGF-1 (P =0.07) concentrations tended to be high in O mares. M mares had the highest leptin concentrations (P=0.007), but E mares had the