Sand Concentration in Fecal Matter of Horses from Different Housing Backgrounds

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The living conditions of horses in Arizona can lead to a higher intake of sand due to feeding, housing, and management practices. Psyllium is a regularly prescribed sand removal treatment for horses that live in sandy areas. The purpose of this study was to determine if a common on-farm sand sedimentation test could discriminate between horses from different housing backgrounds. We hypothesize that horses originally from sandy areas will have more sand present in fecal samples, especially 2 days post psyllium treatments, compared to horses from grassy pastures. Fecal samples were obtained from 30 horses (following a month long quarantine on sandy dry lots) at Tanque Verde Ranch (TVR). Before arriving at TVR, one set of 20 horses came from sandy environments (AZ and NM), while another set of 10 horses came from Northern CA where they were turned out in grassy fields. First fecal samples were collected at day zero, and then psyllium supplementation was initiated. Horses were supplemented for 7 days. Additional fecal samples were collected at Day 2 post supplementation and one time between Days 17 and 21. Fecal samples were subjected to a typical field test to check for sand. Each sample (150g) was measured into a gallon sized bag, 5 cups of water were added, the contents were mixed so that it was well broken up, and the bag was suspended diagonally to allow sand to settle. After 30 minutes, the height of accumulated sand in the bottom corner of the bag was measured in cm. Data were analyzed using a Repeated Measures analysis and the statistical software package SPSS. Means were compared based on housing background and days since initiation of supplementation regime. Horses housed on sand had significantly higher sand levels at Day 2 (Mean 0.92cm, SE ±0.12, P<0.002) and Days 17-21 (Mean 0.62cm, SE ±0.07, P<0.003) than horses housed on grassy pastures. Even though the horses from grassy environments were housed on sandy dry lots for 30 days while at TVR before collections began, they still had significantly less sand present in their manure following psyllium supplementation compared to horses originating from sandy environments. This study demonstrates that this common on-farm sand sedimentation test can discriminate between horses from different housing backgrounds.

Key Words: Horse, sand, manure, housing, sedimentation, psyllium