

left front foot and used to measure growth. At the end of the study, hoof clippings and plasma were sampled. Feed was sampled every 8 weeks, composited, and used to determine total intake of biotin, copper, zinc, and ALA. Mares on LP consumed greater levels of biotin, zinc, and copper ($P < 0.001$) but not ALA ($P > 0.7$), and had greater ($P = 0.032$) average hoof growth than CN mares (1.7 ± 0.07 vs 1.4 ± 0.05 cm per 8 week period). Hoof clippings from LP and CN mares contained similar ($P > 0.5$) quantities of ALA, zinc, and copper. Plasma biotin concentration was greater ($P < 0.001$) in LP than CN mares, while other metabolites were not different ($P > 0.05$). Although primarily designed for horses with poor hoof quality, consuming the tested supplement for 6 months increased hoof growth rates in horses with normal hoof quality, which may in part be due to increased biotin intake.

Key Words: alpha-linolenic acid, biotin, hoof

PSXVI-14 The Basotho Pony. A Breed Improvement Program in the highlands of Lesotho. J.

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This paper outlines key elements of the breed improvement program carried out in the 1980's. The Basotho Pony of Lesotho, Southern Africa, made famous by the Anglo Boer war between 1899–1902 saw 30,000 Basotho Ponies used as remounts for the British army. It provides an essential means of transport and beast of burden and it was estimated that at the time of King Moshoeshoe I in the 1800's the entire population was mounted. With the best stock leaving the country, the breed rapidly deteriorated, population diversity and genetic stock went into decline and numbers dwindled. By the 1950's the breed was facing severe decline. It has been the subject of a number of breed improvements programs over the past century, firstly by the British and most recently in the 1980's by the Irish Government as part of its Bilateral Program of support to Lesotho by the Irish Aid program and which continues to this day under the Ministry of Agriculture and Livestock of Lesotho. In 1978 Ireland and Lesotho established the Basotho Pony Project (breed improvement program,) it developed, 1) the 5,000-acre National Stud Farm in Thaba-Tseka, 2) marketing & trekking center in Molimo Nthuse and 3) several "mare camps" i.e. satellite breeding centers at community level in strategic locations around the country and 4) Extension services. The program proved successful in the development of a core nucleus breeding herd, a selective breeding program, coupled with strict culling of inferior breeding stock, introduction of line breeding, cross breeding and

back crossing, providing improved and selected breeding stock for satellite breeding herds at community level around the country and the entry of the Basotho Pony into the Southern Africa regional endurance racing circuit, proving its worth in the endurance competition and sports field.

Key Words: Basotho Pony, endurance, nucleus breeding herd, selection, line breeding, culling, satellite breeding herds, mare camps, extension, national stud farm, pony trekking and marketing center

PSXVI-17 Acclimation Reduces Stress in Adult Horses Tied in Visual Isolation. K.

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This study evaluated the effect of isolated tying on stress parameters in horses and examined if acclimation reduced stress. Fourteen horses (ages 7 to 21), were blocked by breed and randomly assigned a treatment group, Control (C, n = 7) or Acclimated (A, n = 7), and a tie group (1–4). On day 1 (period 1), horses were fitted with a halter and lead and tied for 60 min. at a visually isolated tying station. Acclimation consisted of a repeated 60 min tie, daily for 10 days. Following acclimation, treatments A and C were tied again (period 2), repeating procedures used on day 1. During the tying tests (day 1 and 15), heart rate (HR, Polar® monitor) and jugular blood samples were taken before (T0), during (T30 and T60), and after (P30 and P60) tying. Samples were maintained on ice, centrifuged, and plasma was harvested and stored at -10°C until assayed. Plasma cortisol was measured by ELISA and differences between treatment groups, test periods, time, and their interactions were analyzed using PROC MIXED of SAS. Visual isolation was a novel stressor in horses. Plasma cortisol ($P < 0.002$) and HR ($P < 0.001$) were elevated above T0 values at T30 and T60 during period 1 in all horses, with mean (lower, upper confidence interval) cortisol concentrations (ng/mL) of 88.3 (52.1, 149.4) at T0, 135.8 (80.3, 229.8) at T30, and 140.0 (83.5, 234.9) at T60. Mean HR increased from 45.5 bpm (T0) to 58.4 (T30) and 58.2 (T60), returning to baseline 30 minutes post tying. However, the initial tying session (period 1) appeared to acclimate both groups. The initial increase in plasma cortisol and HR was not observed in either treatment group during period 2, suggesting that adult, handled horses acclimate to novel stressors quickly.

Key Words: horses, stress, cortisol