

THE EFFECT OF OPTiMIN[®]s ON GROWTH AND HOOF DEVELOPMENT IN YEARLING HORSES

The effect of proteinated trace minerals (OPTiMIN[®]S) on body growth and hoof development in horses was studied at the University of Florida. Nine Thorough-bred and six Quarter Horse yearlings were provided with coastal bermudagrass hay at 1% of body weight and a 12% protein concentrate. One group of yearlings received all trace minerals from only inorganic sources. The other received trace minerals from inorganic sources and zinc, manganese and copper from proteinate sources at 400, 200, and 100 mg/head daily respectively. Mineral levels were constant between the two groups. Linear body measurements and weight gain were taken regularly. Hoof samples were collected by removing a 1.1 cm plug from both fore feet the start and end of the trial. A .14 cm hole was also drilled in the hoof 1 cm below the coronet to measure the rate of hoof growth. Measurements were taken at 28-day intervals.

KEY POINTS:

1. Yearlings fed OPTiMIN[®] proteinated trace minerals had a greater rate of hoof growth than those fed only inorganic sources of trace minerals.
2. Height at the hip increased at a greater rate for yearlings fed proteinated trace minerals.

RESULTS:

Rate of gain for the yearlings averaged 1.7 lbs/day and was not affected by diet. Linear measurements of wither height, heart girth and body length were not affected by diet.

However, increase in hip height was 49% greater for yearlings consuming the diet with proteinated trace minerals (2.76 inches versus 1.85 inches, $P < .05$). Growth rate of the hooves was 4.2% greater for yearlings fed proteinated trace minerals than those receiving trace minerals from only inorganic sources (4.98 cm versus 4.78 cm, $P < .05$). No differences in hoof hardness were detected due to source of trace minerals.

Table 1. TRACE MINERAL SOURCE:

ITEM	INORGANIC	PROTEINATES
Rate of gain (lbs/d)	1.7 ± .01	1.7 ± .01
Hip height gain (inches) ^a	1.85 ± .18	2.76 ± .17
Wither height gain (inches)	2.81 ± .18	2.50 ± .17
Hoof growth (cm) ^a	4.78 ± .06	4.98 ± .06

^a $P < .05$