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## **ESTABLISHMENT OF NORMAL GROWTH RATES OF THOROUGHBREDS IN JAPAN**

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Nutrient requirements for growing horses are calculated based on age, body weight, mature body size, and average daily gain. It is important to study normal growth in horses and to obtain detailed information. A previous report (Hintz et al., 1979) has been accepted worldwide, but these data cannot be applied adequately in Japan. For a few decades, fast growth of foals and yearlings has been promoted and has been advantageous to sellers in Japan, but simultaneously the incidence of bone formation problems in the growing process has increased. The purpose of this study was to obtain the normal growth rates of Thoroughbreds in Japan. Body weight, withers height, heart girth and cannon bone circumference of approximately 270 foals of the Hidaka district in Japan were measured every 2 months from 1 to 15 months of age. The incidence of epiphysitis was monitored and the relationship to the dietary contents at weaning was studied. The body weight curve up to approximately 6 months of age was similar to data for horses with a 600 kg mature weight while between 6 and 15 months of age, the body weight curve was intermediate to 500 kg and 600 kg mature body weight (NRC, 1989). The body weight and withers height curves in this study were similar to those of horses in Kentucky (Pagan et al., 1996). In this study, epiphysitis of the fetlock joint was observed in some foals from 3 to 7 months of age. These foals weighed heavier at 1 month of age and their growth rates were more rapid than unaffected foals. Epiphysitis of the knee joint was observed in some foals at approximately 15 months of age. These foals weighed lighter while nursing, but were inclined to grow rapidly after weaning compared to unaffected foals. There were high correlations between the incidence of epiphysitis in fetlock joints after weaning and poor intakes of dietary copper, zinc, calcium and protein at this stage of growth. These results revealed that normal growth rate and criteria for nutritional supplementation of Thoroughbreds in Japan were necessary.

