Kentucky Equine Research®
World Leaders In Equine Nutrition

Advances in Equine Nutrition

Volume IV

Edited by

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SIZE MATTERS AT THE SALES

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Many factors affect the sale price of Thoroughbred yearlings at public auction. Pedigree, conformation, and the racing performance of siblings determine whether a yearling commands bids in the thousands or millions. But what about size? Does the yearling's body weight, height, and body condition influence how well it sells? Kentucky Equine Research (KER) and Hallway Feeds in Lexington conducted a study at the 2003 Keeneland September Yearling Sale that attempted to answer these questions.

Body weight, withers height, and body condition score measurements were taken in late August and early September from 294 yearlings that were to sell at Keeneland. The yearlings were then tracked through the sales where their session number and sale price were recorded. Yearlings that were listed as RNA (reserve not attained; horse was not sold because of low final bid) were also recorded. Yearlings in the study came from 16 different farms and were sold by 20 different consignors.

Two hundred forty-nine of the yearlings in this study were listed as sold. This represented over 8% of the total yearlings sold in this sale. The average and median prices of these yearlings were $106,810 and $40,000, respectively, compared to an average and median of $92,329 and $34,000 for the entire sale. Forty-five of the 294 yearlings (15%) were listed as RNA.

The average age of the yearlings at sale time was 538 days. The measurements used in the study were taken an average of 16 days before sale day. Not surprisingly, on average colts (n = 161) were heavier (1003 lb vs 955 lb) and taller (15.1 hands vs 15 hands) than fillies (n = 133). Colts also averaged slightly lower in body condition score than fillies (5.8 vs 5.9). Body condition score is a relative measure of the amount of body fat that the yearling is carrying. A higher condition score indicates that the yearling is carrying greater fat cover. Although the scoring system goes from 1 (emaciated) to 9 (grossly obese), all of the yearlings measured fell into a narrow range of 5.5 to 6.5.

To evaluate whether body size and condition affect sales price, the data were evaluated in two ways. First, the yearlings were divided into two groups based on whether their sale price was above or below the median price of the session in which they were sold. The rationale for this division was that the yearlings had already been assigned to a particular session based on their relative value, which was determined largely on pedigree and conformation. Therefore, if body size truly affected sales

price it should be reflected by whether yearlings sold for more or less than their session median. In this primary evaluation, the last bid for RNA horses was considered as the sale price. A second evaluation compared all RNA yearlings (n = 45) with all yearlings listed as sold (n = 249).

Comparison by Session

Yearlings that brought bids above their session median were significantly heavier (995 lbs vs 970 lbs) (Figure 1) and slightly taller (Figure 2) than those below the median, but they did not have significantly higher condition scores (Figure 3).

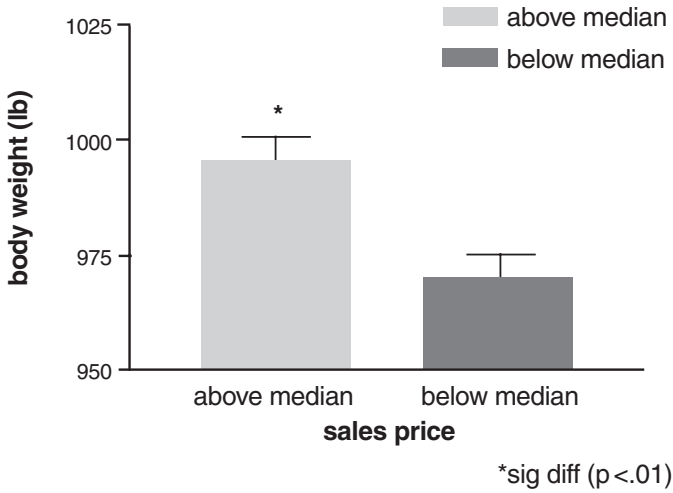

Figure 1. Body weight (lb) of all sales yearlings relative to session median price.

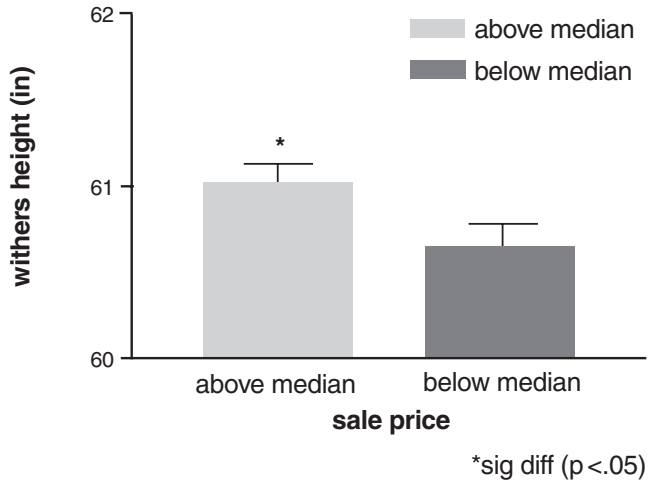

Figure 2. Withers height (in) of all sales yearlings relative to session median price.

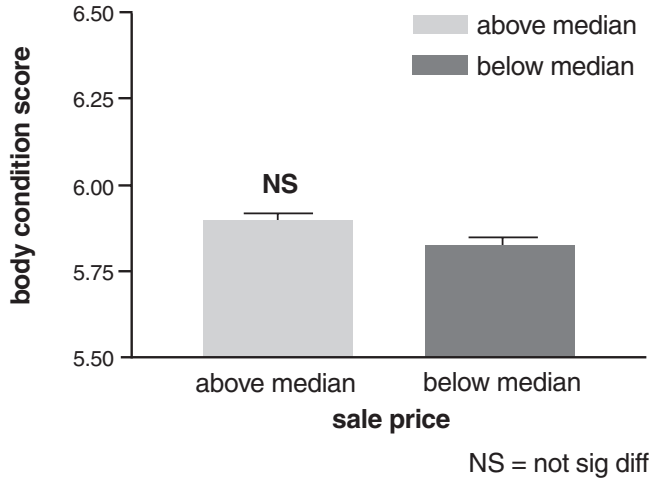

Figure 3. Body condition score of all sales yearlings relative to session median price.

Some of these difference in body weight and height were related to age (544 days vs 535 days) (Figure 4) and gender. There was a greater percentage of colts that sold above the session median than fillies (61% vs 39%).

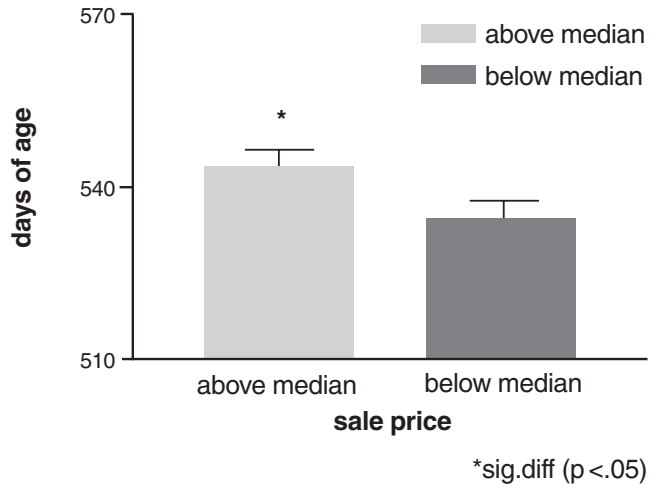

Figure 4. Age (days) of all sales yearlings relative to session median price.

Because of these age and gender effects, the data for colts and fillies were re-analyzed separately. Body weight was still significantly greater in both colts and fillies that received bids above their session median (Figure 5). Withers height, however, was no longer significantly different between groups in either colts or fillies (Figure 6).

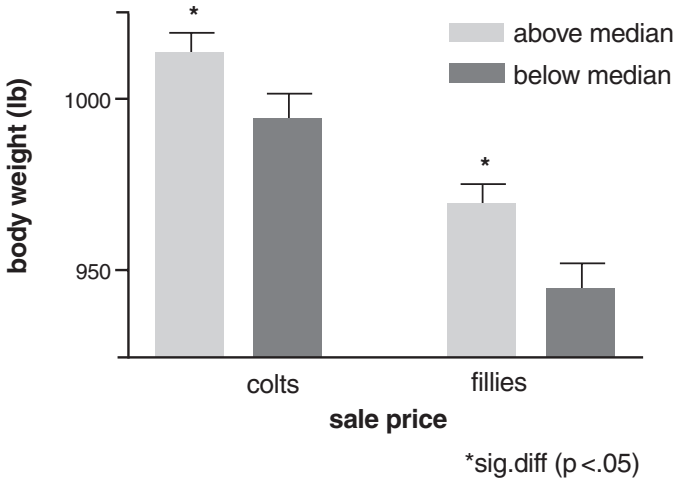

Figure 5. Body weight (lb) of colts and fillies relative to session median price.

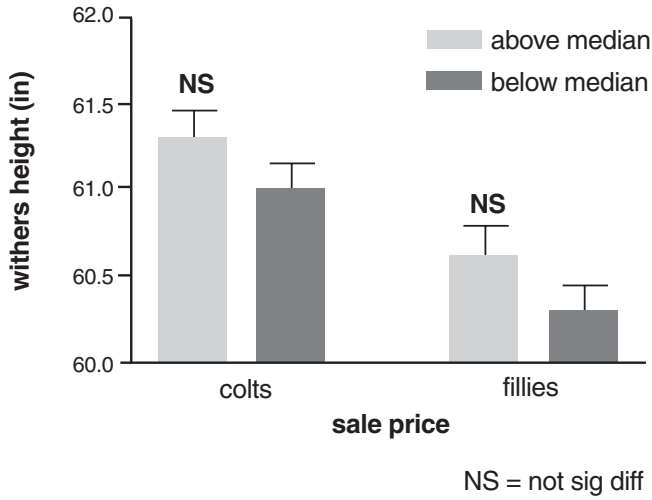

Figure 6. Withers height (in) of colts and fillies relative to session median price.

Fillies that received bids above their session median were significantly older (544 days vs 530 days) (Figure 7) than those selling below. There was no significant difference in the age of colts selling above and below their session median.

To remove the effect of age and gender from the analysis, each yearling's body weight and height were expressed as a percentage of the average for the same gender and age, which was calculated by linear regression of age vs body weight or height (Figures 8-11).

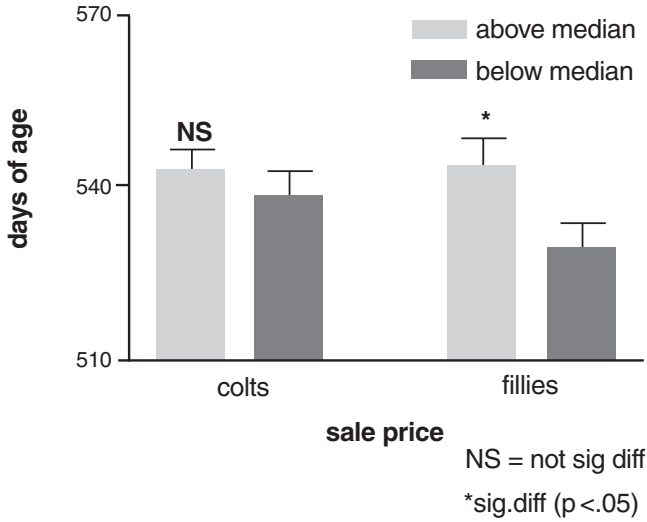

Figure 7. Age (days) of colts and fillies relative to session median price.

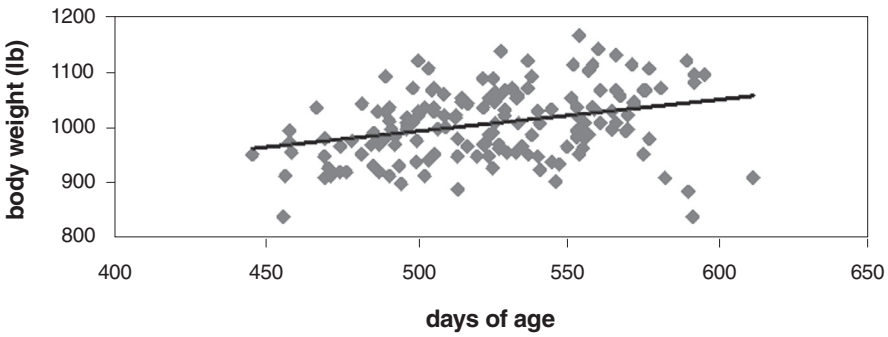

Figure 8. Relationship between colts' body weight and age.

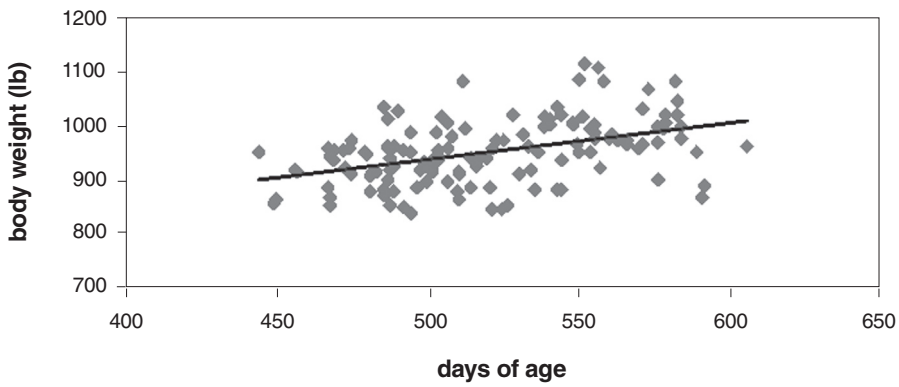

Figure 9. Relationship between fillies' body weight and age.

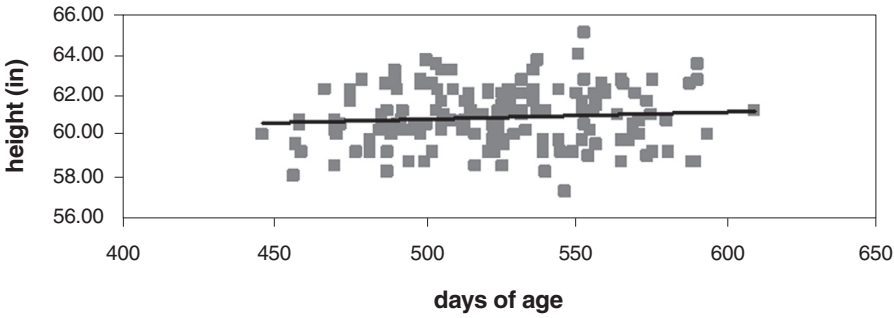

Figure 10. Relationship between colts' withers height and age.

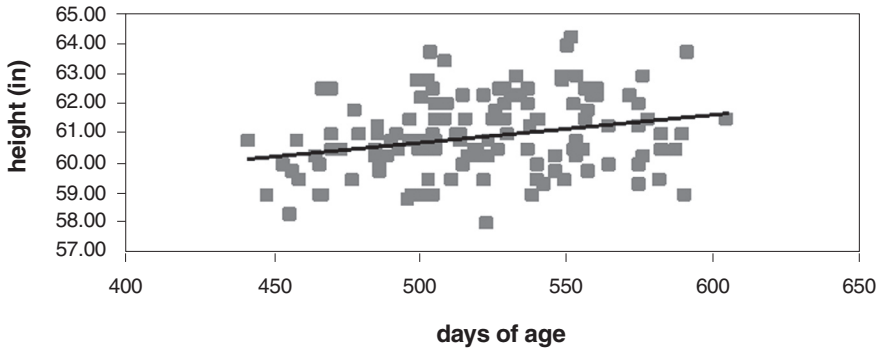

Figure 11. Relationship between fillies' withers height and age.

Body weight adjusted for gender and age was significantly higher in the yearlings that received bids above their session median (Figure 12). Withers height, however, was not significantly different between groups (Figure 13). These data suggest yearlings that received bids above their session median were heavier, but not taller or fatter, than those receiving bids below their session median.

RNA Analysis

Body size and condition scores of yearlings listed as RNA (n = 45) were compared to those listed as sold (n = 249). Yearlings listed as sold were significantly heavier than those listed as RNA (Figure 14), but they were not taller (Figure 15). The difference in body weight between these groups was most likely related to body condition (Figure 16). Seventy percent of the yearlings listed as sold had body condition scores of 6.0 to 6.5, while the remaining 30% had scores of 5.5. Only 49% (22 of 45) of the yearlings listed as RNA had scores of 6.0 with 51% scoring 5.5. Body weight remained significantly higher in the yearlings listed as sold when adjusted for gender and age (Figure 17).

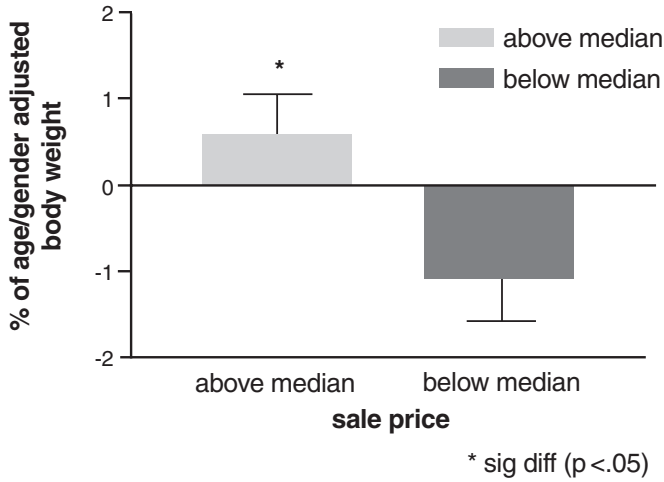

Figure 12. Body weight adjusted for age and gender relative to session median price.

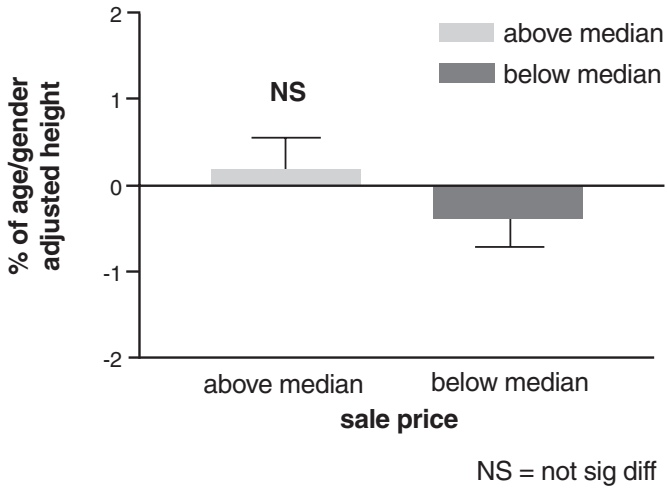

Figure 13. Withers height adjusted for age and gender relative to session median price.

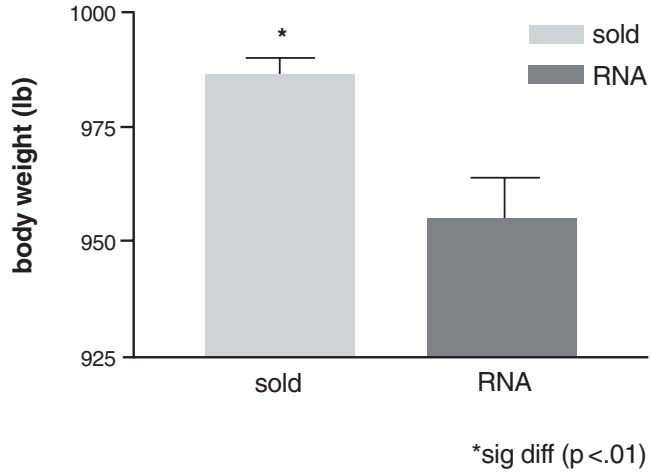

Figure 14. Body weight of yearlings listed as RNA vs yearlings listed as sold.

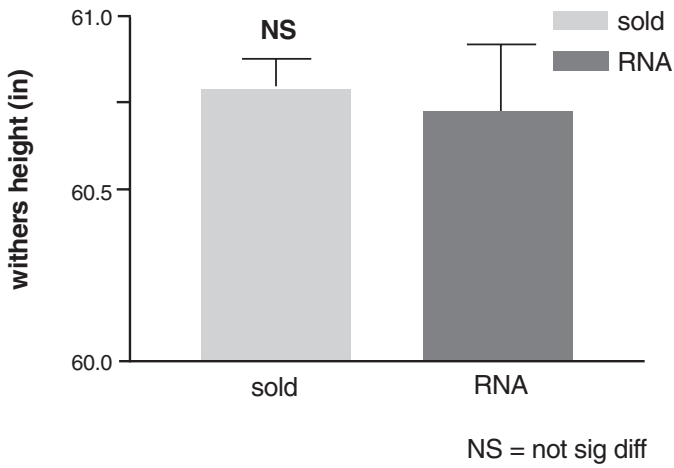

Figure 15. Withers height of yearlings listed as RNA vs yearlings listed as sold.

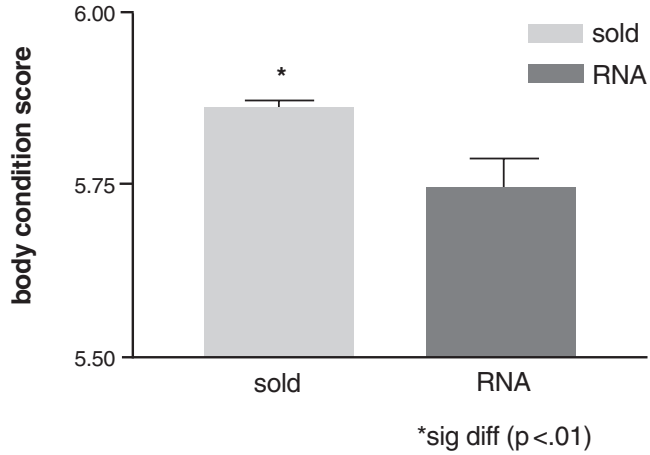

Figure 16. Body condition score of yearlings listed as RNA vs yearlings listed as sold.

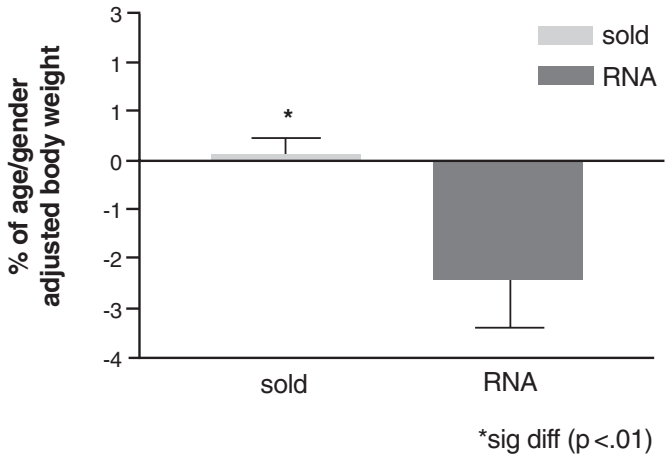

Figure 17. Body weight adjusted for age and gender in yearlings listed as sold or RNA.

Conclusions

Yearlings that commanded bids higher than the median price of the session in which they were sold tended to be heavier and slightly taller, but not fatter, than yearlings receiving bids below their session's median price. Some of this difference was related to gender, since more colts sold above the median price than fillies. Age also played a role, especially in fillies. When these measurements were adjusted to account for age and gender effects, yearlings selling above the session median were still heavier,

but not taller, than those below the session median. Although it can't be determined from these data, it is likely that yearlings selling above their session median price represented individuals with more substance and a more heavily muscled, athletic physique resulting from a combination of genetics, nutrition, and exercise.

Interestingly, yearlings listed as RNA were lighter than horses listed as sold and a higher percentage of them had lower body condition scores. These data suggest that the ideal condition score for a sales yearling is 6.0 on a scale from 1 to 9. Yearlings presented for sale with lower condition scores are less likely to meet the sellers'expectations.