

Does the age of the broodmare affect the birth weight and growth rates of foals?

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This article summarises a research paper which appeared in a publication from the European Association for Animal Production, 2005. The paper, entitled “The effect of age of dam on birth weight and growth rate of thoroughbred foals” by Willard et al., describes data that was collected on a weekly basis from a farm in Kentucky to determine the following:

- a. Are foals from aged broodmares lighter at birth;
- b. Does the growth rate of the foals from these aged mares differ from other foals;
- c. Do growth rates of foals that were fostered on nurse mares vary from own-dam foals;
- d. Are there gender differences in birth weights or growth rates; and
- e. Is weekly foal weight measurements necessary to document variations in thoroughbred growth patterns

How the study was done:

Fifty-six thoroughbred foals (28 fillies and 28 colts) were weighed at weekly intervals over a 9-month period. Fourteen of the foals were fostered on to nurse mares within 24-48 hours of birth. All foals were offered Lucerne hay and creep fed a mixed grain ration (with their dams) twice daily. Mares and foals were turned out daily and had free access to water and trace mineralized salt. Following weaning, foals were managed under similar conditions.

The results of the study:

- a. *Are foals from aged broodmares lighter at birth?*
The results suggested that old mares (20 years or older) did indeed have lighter foals than other groups. The average foal birth weight was 4kg less than foals from mares 19 years of age or younger.
- b. *Does the growth rate of the foals from these aged mares differ from other foals?*
Foals born from older mares actually grew significantly faster, however many of these foals (11 of the 14) were on nurse mares so this may have confounded the results.
- c. *Do growth rates of foals that were fostered onto nurse mares vary from own-dam foals?*
When the data was analysed, fostered foals actually grew significantly faster (0.0366 kg/day) than own-dam raised foals. Many of these nurse mares were not Thoroughbreds. Unlike Thoroughbreds which are selected for performance, these nurse mares were specifically selected based upon their reproductive, mothering and milk production qualities.
- d. *Are there gender differences in birth weights or growth rates?*
The sex of the foal did not have a significant affect on birth weight. Also, there was no difference in growth rates of colts versus fillies.
- e. *Are weekly foal weight measurements necessary to document variations in thoroughbred growth patterns?*
It was suggested that bimonthly measurements of foals is adequate to determine overall growth rate curves if this is desired on the farm.

Conclusions from this study:

The results of this study indicated that older mares do tend to produce smaller foals, however authors suggested that the use of nurse mares may allow these foals to grow faster and catch up to their peers. This could be achieved in conjunction with a balanced diet containing adequate levels of minerals to support this growth.

The information presented above was summarised from the following paper: Willard et al., 2005. The effect of age of dam on birth weight and growth rate of Thoroughbred foals. In: The growing horse: nutrition and prevention of growth disorders. EAAP Publication No. 114, 2005. Dijon, France.

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