INFLUENCE OF STALLION, DONOR AND RECIPIENT MARE’S HEIGHT AND PARITY IN FOAL HEIGHT FROM BIRTH TO THREE YEARS OLD IN AN EMBRYO TRANSFER PROGRAM. A RETROSPECTIVE STUDY

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Introduction: Recipient mare size and parity may affect fetal and postnatal development in foals.

Objectives: The purpose of this study was to analyze the influence of recipient mare height and parity, as well as the donor mare and stallion on the height of foals at birth and up to three years of age, produced in a commercial embryo transfer facility.

Materials and Methods: Foals (n=423) born from an embryo transfer program were used in this retrospective study. Height of the stallions, mares (donor and recipient) and foals was measured at the highest point of the withers. Numbers of previous pregnancies of the recipient mares and sex of the foals were recorded. For statistical analyses, linear regression was used to determine correlations between height of the foal at birth (n=423), at 1 year (n=319), 2 years (n=236) and at 3 years (n=199) of age, height of the stallion, donor and recipient mare, sex of the foal and number of previous pregnancies. ANOVA was used to determine differences among sex and number of foals. All data analyses were performed using SPSS version 16.0 (SPSS, INC., Chicago, IL).

Results: At birth, height of the foal had a significant correlation with the recipient mare’s height (P<0.001) and number of previous foals (P<0.001). At one year of age, there was significant correlation with donor’s (P<0.001) and recipient’s height (P<0.001), and the height of the stallion, donor and recipient mare, sex of the foal and number of previous pregnancies. ANOVA was used to determine differences among sex and number of foals. All data analyses were performed using SPSS version 16.0 (SPSS, INC., Chicago, IL).

Discussion: Our results confirm studies showing the effect of the size and parity of the recipient mare in the products at birth. However, in contrast with those studies we found that the influence of those variables is lost after the second year of age, probably because the difference between the donors and recipient mares was not as pronounced as in previous studies.

Conclusion: Recipient mares of slightly smaller size than the donor mare can be used without affecting significantly the adult size of the embryo transfer progeny.