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ABSTRACT

Growth and pubertal development of F_1 bulls from Hereford, Angus, Norwegian Red, Swedish Red and White, Friesian, and Wagyu sires[1,2]

E. Casas,[3] D. D. Lunstra, L. V. Cundiff, and J. J. Ford

US Meat Animal Research Center, USDA, ARS, Clay Center, NE 68933

The objective of the study was to characterize body growth, testicular development, and puberty from 8 to 14 mo of age in bulls (n = 120) produced by mating sires from Hereford, Angus, Norwegian Red, Swedish Red and White, Friesian, and Wagyu breeds to MARC III ((1/4) Hereford, (1/4) Angus, (1/4) Red Poll, and (1/4) Pinzgauer) cows. Traits evaluated were birth weight, weaning weight (at 215 d), yearling weight, ADG from 8 to 14 mo of age, paired testicular volume growth from 8 to 14 mo of age, age at puberty (determined by production of 50 x 10(6) sperm with 10% motility), age at freezable semen (determined by production of 500 x 10(6) sperm with 50% motility), and, at 15 mo of age, paired testicular weight and daily sperm production per testis pair. There was an effect of sire breed (P = 0.03) for age at puberty; animals with Wagyu and Swedish Red and White inheritance reached puberty at a later date (302 and 302 d of age, respectively) compared with Angus-sired bulls (268 d). Age at puberty for Hereford-, Norwegian Red-, and Friesian-sired bulls was 270, 271, and 278 d, respectively. Differences in BW were observed (P = 0.03) at birth; bulls with Hereford and Friesian were heavier at birth (43 and 41 kg, respectively) compared with those with Norwegian Red, Swedish Red and White, and Wagyu inheritance (39, 38, and 38 kg, respectively). Differences in BW were also observed at 1 yr of age (P = 0.001), where the heaviest animals were those sired by Angus (450 kg), whereas the lightest animals were those sired by Wagyu (403 kg). Bulls with Wagyu inheritance had the lowest (P = 0.04) ADG (1.12 kg/d) compared with bulls with inheritance from Hereford (1.22 kg/d), Angus (1.28 kg/d), Norwegian Red (1.24 kg/d), Swedish Red and White (1.25 kg/d), and Friesian (1.27 kg/d). Differences in scrotal growth rate were not significant (P = 0.99). They ranged from 1.95 in Angus-sired to 1.66 cm3/d in Wagyu-sired bulls. There were no differences (P = 0.80) for age at freezable semen (335 +/- 10 d). At slaughter (15 mo of age), there were no differences (P = 0.62) for paired testicular weight (603 +/- 28 g) and daily sperm production (10.6 x 10(9) +/- 0.9 x 10(9) per testis pair). Growth of bulls with Wagyu inheritance was slower, and bulls with Wagyu or Scandinavian inheritance reach puberty at an older age than bulls with Angus inheritance.

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