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## JOURNAL ARTICLE

# The effect of exogenous follicle stimulating hormone treatment on anterior pituitary and testicular function in the prepubertal bull

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The effect of exogenous follicle stimulating hormone (FSH) on testicular function was studied in twenty 4-month-old Holstein bulls during two seasons (ten in late winter and ten in summer). Five mg FSH or saline were given subcutaneously at 12-hour intervals (10 mg/day) for ten days, after which time the testes were removed, weighted, and incubated in vitro with 0, 15, or 150 ng luteinizing hormone (LH) for 3 hours. FSH treatment resulted in significantly heavier testes (38% in the summer (39.3 +/- 1.6 vs. 28.5 +/- 1.5 g) but not in late winter. Epididymal weight was not affected. Across seasons, serum LH concentrations were higher (P = 0.06) in FSH-treated bulls (2.39 +/- 0.13 vs 1.80 +/- 0.13 ng/ml); the largest increase occurred in the summer. FSH treatment did not change serum testosterone levels in late winter, whereas in the summer serum testosterone concentrations were three-fold higher (0.90 +/- 0.06 vs 0.29 +/- 0.02 ng/ml; P less than 0.05) in the FSH-treated bulls. In addition, serum testosterone concentrations increased with time of FSH treatment. FSH treatment stimulated a 2.4-fold increase (P less than 0.05) in testosterone content of the testes across seasons and a three-fold increase (P less than 0.05) in testosterone synthesis in vitro in the summer. There was no dose effect of LH on vitro in the summer. There was no dose effect of LH on in vitro testosterone synthesis. We conclude that administration of exogenous FSH to intact prepubertal bulls is capable of altering testicular function, but that seasonal influences can modify this function.

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