

Replacing barley grain with wheat DDGS (dry distillers grains with solubles) reduced multiple ovulations in postpartum dairy cows

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The objective of the study was to determine the effects of dietary inclusion of wheat DDGS or rolled barley (at the level of 17%) on reproductive function in postpartum dairy cows. Sixty lactating dairy cows were assigned to 1 of 2 diets from the day of calving to 84 d postpartum. Both diets contained 43.1% barley silage and 21.6% rolled corn grain. The starch content for diets containing wheat DDGS and rolled barley were 19.1% and 29.2%, respectively. Transrectal ultrasonography was performed twice weekly in all cows from 7 to 56 d after calving. Plasma concentrations of insulin and insulin-like growth factor were determined in all cows. Preovulatory follicular fluid concentrations of insulin, insulin-like growth factor and NEFA were also determined in a subset of 24 cows 8 wk after calving. Diets did not alter the interval from calving to first ovulation, but a greater proportion of cows in the rolled barley group ovulated two or three follicles at first ovulation compared to those in wheat DDGS group (40% vs. 20%; $P=0.04$). A higher proportion of cows given the diet containing rolled barley ovulated more than one follicle, even at the time of first breeding, compared to cows given wheat DDGS (21% vs. 9%; $P=0.10$). Cows consuming wheat DDGS had lower concentrations of insulin in plasma (1.6 vs. 2.5 IU/ml; $P=0.003$), insulin-like growth factor in follicular fluid (69 vs. 108 ng/ml; $P=0.02$), and higher concentrations of NEFA in both plasma (181.5 vs. 131.9 mEQ/l; $P=0.04$) and follicular fluid (222.2 vs. 148.5 mEQ/l; $P=0.02$).

Take Home Message: Replacing barley grain with wheat DDGS did not affect the interval from calving to first ovulation but reduced the proportion of cows ovulating multiple follicles, thereby may decrease the risk of twinning.

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