Selecting calving time for highest milk production during the first lactation for Iranian Holstein heifers

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Heat stress is well known to depress milk yield (MY) and appetite in dairy cows. Cows in early lactation and late gestation are more sensitive to heat stress and, of course, this is the physiological status of animals that responds with reducing milk production (Barash *et al.*, 2001).

The aim of this study was to investigate effects of day length (DL) and ambient temperature (AT) on milk production of first lactation Holstein heifers. This experiment was conducted during 1997–2002 in dairy farm of Ferdowsi University of Mashhad. The nutrient requirements of different groups of animals were supplied according to NRC 1989. Milk production data were recorded monthly and Khorasan State Climatologic Station prepared temperature and day length data. Data were analyzed using General Linear Models procedures of SAS v6.12 to evaluate differences among experimental groups. The design was completely randomized (unequal replicates). Differences between means were compared with Duncan's test. The current experiment showed that DL and AT had significant effect on milk production in the second and ninth months ($P \leq 0.03$ and $P \leq 0.01$, respectively). Also it seems that milk production was highest in the second month of lactation (April) and lowest in November. Therefore under Iranian climate and management conditions the most production performance will result from calving during February in order to reach peak lactation in April.

Barash, H., Silanikove, N., Shamay, A. and Ezra, E. (2001). Interrelationships among ambient temperature, day length, and milk yield in dairy cows under a Mediterranean climate. *Journal Dairy Sci*ence 84, 2314–2320.
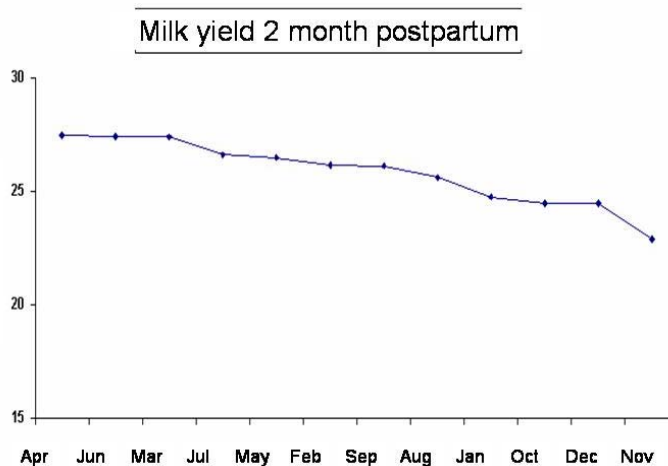
Figure 1   Milk yield measured during the second month of lactation and ranked from highest to lowest.