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Effect of Sires and Raising Areas on Body Weight of Holstein Friesian Cows in Northern Thailand

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Abstract

The government of Thailand supports dairy development in northern districts of Chaiprakan and Maeon. Chaiprakan district is a mountainous area with lower temperatures than in Maeon district. There are now around 128 smallholder dairy farms in Chaiprakan district and 120 in Maeon district of less than 10 cows and both districts are supplied with semen for artificial insemination from the same source. It is not clear however, whether the different district environments are constraining dairy production because the two areas have differences in management, feeds and temperature. Underweight dairy cows have been observed and there are allegations that sires or environment may be the cause. The objective of this research in Maeon and Chaiprakan districts, Chiangmai Province was to evaluate the effect of raising area, sires and their interaction on body weight of 298 Holstein Friesian cows. The cows were offspring of 17 different sires and of varying age.

There were no differences ($p > 0.05$) in body weights of cows bred from the different sires. The raising area (Maeon and Chaiprakan districts) affected total body weight. Cows raised in Chaiprakan district had significantly ($p < 0.05$) higher body weights than cows raised in Maeon district. The mean and standard error of body weight of cows from Chaiprakan and Maeon district were $415.65 \text{ kg} \pm 4.07$ and $382.72 \text{ kg} \pm 4.57$ respectively. There was no interaction between sires and raising area on body weight ($p > 0.05$). These observations suggest that the environmental factors in Chaiprakan district are more favourable for dairy cows than in Maeon district. Maeon district factors are constraining genetic performance.

Keywords: Environmental effects, Holstein Friesian