



Deutscher Tropentag, October 9-11, 2002, Witzenhausen
“Challenges to Organic Farming and Sustainable Land Use
in the Tropics and Subtropics”

Variation of Skin Colour among Holstein Friesian Cows of Northern Thailand

NATTAPHON CHONGKASIKIT¹, THERDCHAI VEARASILP¹, UDO TER MEULEN²

¹*Chiang Mai University, Department of Animal Science, Thailand*

²*Georg-August University Göttingen, Institute of Animal Physiology and Nutrition, Germany*

Abstract

In Northern Thailand there is an increase in the replacement of the heat stress adapted indigenous Thai cattle with improved breeds through crossbreeding with Holstein Friesian from temperate climates. The result is a tendency to a dairy cattle population with more dark skin colour. Friesian cows with dark skins may have more difficulties to adapt because of the high humidity and temperatures. The percentage of black and white skin colour in Holstein Friesian cows influences milk production. The black skin absorbs more environmental and solar radiation while the white reflects more. This predisposes black cows to more heat stress. Climatic stress especially from heat and solar radiation decreases milk production, changes milk composition and lowers reproductive performance. Therefore the skin colour is of importance to dairy farming as it may cause significant economic losses. The objective of this study was to determine the distribution of dark skin colour among 2.107 Friesian cows in Chiangmai, Chiangrai and Lamphun Provinces. The area of distribution of white and black coloured patches on the entire body was measured.

The results revealed a wide variation in skin colour. The white colour had a mean distribution of 27% (± 0.65 standard error), variance of 885.11, skewness of 0.96 and a median of 15%. Most of the cows had larger black than white coloured skin areas. In 50% of the cows, the white coloured skin areas covered less than 15%. The results suggest that the present Holstein Friesian population of Northern Thailand may not be well suited for this environment and should be investigated for heat stress.

Keywords: Holstein Friesian, skin colour