S. 38. 36

Influence of pelvis shape detected by thermal imaging on automatic body condition scoring (BCS)

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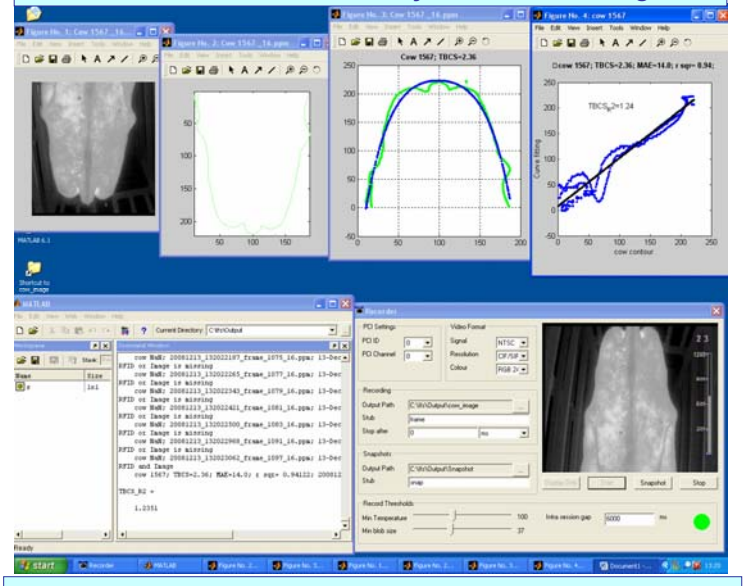
MATERIAL AND METHODS

The pelvis length index (PLI = 100 * width of hips * length of pelvis-1) of 160 Holstein cows was detected on thermographical images of the rear half of the cow's body from a bird's eye perspective. Cows were divided in to two groups by the PLI with a dividing limit of 0.9. Termographical images were analysed and body condition score of all cows were assessed by algorithm of Halachmi, et al. (2008).

Proces of automatical body condition scoring



Source: Halachmi, et al.(2008) *Journal of Dairy Science* 91

Pearsons correlations between variables

Variables	Thermal Body Condition Score	Pelvis Lenght Index	Live weight of cows in kg
Manual Body Condition Score	0.02	0.01	0.30 ***
Thermal Body Condition Score		-0.27***	0.12
Pelvis lenght in pixels			-0.44***

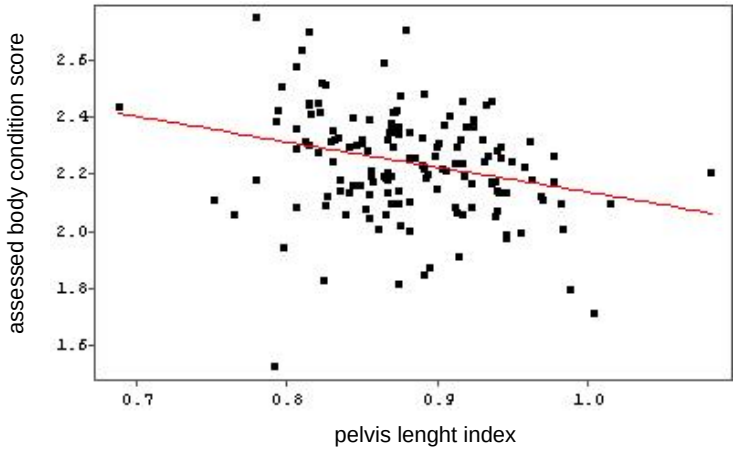
Basic statistics of obtained variables

Variables	Group 1	Group 2	Difference
Number of animals	95	55	
Manual Body Condition Score	2.25	2.23	
Thermal Body Condition Score	2.27	2.19	**
Pelvis Lenght Index	0.85	0.94	***
Live weight of cows in kg	606.24	540.81	***

CONCLUSIONS

Negative relationship between termally sensed BCS of cows and pelvis length index was proved. Cows with higher pelvis length index had lower live weight. It could be said that there is a tendency to under estimate body composition of lighter cows. Research was done on limited number of cows; therefore more research is needed. The PLI should be integrated into the automatic BCS algorithm.

Regression between termographically assesed body condition score and pelvis lenght index



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MARIE CURIE ACTIONS

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