



Tropentag, October 9-11, 2007, Witzenhausen

“Utilisation of diversity in land use systems:  
Sustainable and organic approaches to meet human needs”

## Potassium Chloride Supplementation in Drinking Water of Laying Hens as a Means to Maintain High Productivity under High Ambient Temperature

DAI NGUYEN VAN, WERNER BESSEI

*University of Hohenheim, Institute for Animal Husbandry and Animal Breeding, Germany*

### Abstract

Voluntary water intake in laying hens is considered an important factor of adaptation to hot temperatures. This experiment was carried out to study the response of potassium chloride (KCL) in the drinking water on water intake, feed intake and productivity traits under heat challenge. A total of 48 hens (Hisex breed) were kept in climatic chambers and randomly allocated to three experimental groups of 16 hens each. These groups were given 0; .2 and .4% KCL in the drinking water for seven consecutive days. The room temperature was cycled from  $21\pm 1^{\circ}\text{C}$  (from 23 to 8 hrs) to  $34\pm 1^{\circ}\text{C}$  (from 9 to 22 hrs) for seven days. Water and feed intake, egg production and quality traits of the individual hens were recorded throughout the experimental period. Body temperature was recorded at days 1, 3, 5 and 7. Water intake was significantly higher in the hens receiving .2, .4% vs. 0% KCL supplementation. There was no significant difference between .2 and .4% KCL. Feed intake in the control group was significantly higher in the KCL-supplemented groups at day seven of experimental period. There was no effect of the treatments on egg shell strength, but shell thickness was significantly higher and the number of egg shell defects was lower in the KCL-treated hens. Body temperature was not affected by the treatments. The results show that KCL supplementation through drinking water may be a means to avoid a reduction of egg production which usually occurs when the temperature in the layer house increases.

**Keywords:** Egg production, feed intake, heat stress, potassium chloride, water intake