

# Abstract

**Presentation title:** Effect of sustained release bolus oral administration on body condition change, blood parameters, and uterine health in primiparous cows under heat stress.

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**Presentation type:** Oral presentation or Poster presentation

## Abstract:

The transition period is very stressful for primiparous cows due to their first calving experience and will be more challenging if it occurs under heat-stress conditions. Heat stress reduces the feed intake of dairy cows. Therefore, it reduces the consumption of minerals and vitamins. Oral administration of boluses through the provision of mineral-vitamin compounds can reduce metabolic abnormalities after calving. The present study aimed to evaluate effect of sustained-release bolus on body condition score (BCS) change, serum metabolites, uterine health, and reproductive status in primiparous cows. Heifers were selected at the beginning of the close-up period ( $n=60$ ,  $BCS=3.35\pm 0.12$ ). There were 2 experimental treatments at the time of calving: (1) Heifers without bolus oral administration (H-Bo,  $n=30$ ); (2) Heifers with bolus oral administration (H+Bo,  $n=30$ ). The results showed that although the rate of BCS loss was lower in the group receiving bolus, the effect of bolus was not significant. The effect of bolus on blood level of glucose, non-esterified fatty acids (NEFA) and beta-hydroxybutyrate (BHBA) was not significant, however, the highest concentration of albumin ( $P=0.05$ ) was observed in the H+Bo group on day 42 after calving. The concentration of aspartate transaminase (AST) tended to increase ( $P=0.06$ ) on day 14 after calving and entire the study. Total antioxidant capacity (TAC) was affected ( $P<0.05$ ) by bolus throughout the period of study, and highest ( $P<0.05$ ) concentration of glutathione peroxidase (GPX) and superoxide dismutase (SOD) was observed in H+Bo group on day 42 after calving. The H+Bo group had lowest ( $P<0.05$ ) vaginal discharge score (VDS). In general, oral administration of the sustained-release bolus in heifers significantly affected the antioxidant factors and uterine health, as well as had positive effects on liver function, body condition, and reproduction status.

## Biography:

Mohammad Choupani has a doctorate in animal nutrition-physiology. The plan carried out in the field of feeding heifers with antioxidant bolus creates new ways to improve the metabolic status and uterus health in heifers. This research was done based on years of research, experience, teaching, and management of breeding farms. Also, this research has been investigated on dairy cows under heat stress.

