

# Effects of Increasing Prepartum Dietary Protein Level on Production and Health of Multiparous Holstein Dairy Cows

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## Introduction

Effects of two levels of crude protein (CP) during late gestation on the production performance, health, blood metabolites and colostrums composition were determined in Holstein cows.

## Materials and Methods

Twenty-one multiparous dry cows were blocked based on parity and projected calving date and diet containing either (a) 14 % crude protein (CO) or (b) 16 % crude protein, from 28-days prepartum until parturition. All cows were fed the control diet during the 21-day postpartum period. Diets contained, on a dry matter (DM) basis, 34% alfalfa hay, 33% corn silage and 33% concentrate.

## Results

Yields of milk, protein, lactose, fat and solids-non-fat were not affected by prepartum crude protein level.

Colostrums composition (protein, lactose and total solids percents) and blood Ca, glucose, total protein, albumin and globulin were not influenced by prepartum crude protein level. Body weight changes and body condition score changes during prepartum and postpartum periods were not significantly different. Increasing the prepartum crude protein level reduced hypocalcaemia at 7-day prepartum and 1-day postpartum, and tended to increase retained placenta.

## Significance

Colostrums fat percents (5.5 vs 4.9%) were significantly different between diets. Increasing dietary crude protein ratio increased prepartum blood urea N concentrations (17.1 vs 20.4 mg/dL). Blood cholesterol concentrations significantly decreased during prepartum (103.9 vs 80 mg/dL) and postpartum (81.8 vs 60.4 mg/dL) periods. Results of feeding high level of protein (16%) are not enough.