



HHM-002

## HEMOGLOBIN CONCENTRATIONS IN RELATION TO REPRODUCTIVE STAGE AND PARITY IN SOWS

K. Kastevens<sup>1</sup>, T. Gillespie<sup>2</sup>, T. Tillet<sup>1</sup>, J. Bonin Ferreria<sup>1</sup>, G. Almond<sup>1</sup>.

<sup>1</sup>North Carolina State University/College of Veterin, Raleigh, United States; <sup>2</sup>Bethany-Rensselaer Swine Services, Rensselaer, United States.

### Introduction

The iron demands of sows and hemoglobin (Hb) concentrations typically are ignored in pork production. Therefore, this study evaluated Hb concentrations in different parities of sows at various stages of reproduction.

### Materials & Methods

The cross-sectional study included 2685 sows from 11 different farms (2400-4000 sows/farm) in two states (North Carolina and Indiana) in the USA. Approximately 250 blood samples were collected from 10 sows/parity/stage on each farm. Stages were defined as early, mid, and late gestation, and early and late lactation. Parity groups were 0, 1, 2, 3, and > 4. The Hb concentrations were measured on the farm using a HemoCue Hb 201+™. Blood samples were taken from the ear veins of sows. Data was analyzed using analysis of variance with state, farm, parity, and stage as the independent variables. Means were compared with Tukey's HSD test.

### Results

The Hb concentrations differed ( $P < .05$ ) between North Carolina ( $9.7 \pm 0.03$  g/dL) and Indiana ( $10.5 \pm 0.05$  g/dL). Also, Hb concentrations differed among reproductive stages with mid-gestation having the highest ( $P < .05$ ) concentrations ( $10.7 \pm 0.06$  g/dL), early lactation with the lowest concentrations ( $9.1 \pm 0.05$  g/dL), and concentrations rising over late lactation ( $9.4 \pm 0.06$  g/dL) and early gestation ( $10.6 \pm 0.06$  g/dL). This trend was consistent among parities and farms. There also was an effect of parity, with Hb concentrations decreasing with increasing parity.

### Discussion

This method of Hb assessment provided a simple and inexpensive method of Hb evaluation on commercial farms. The difference between states was surprising; however, it was suspected that sow diets were a significant factor. If 10.5 g/dL is as an indicator of anemia, then a large proportion of sows were anemic, thereby revealing potential issues with anemia in sows, particularly in lactation. Additional studies are necessary to evaluate the influence of Hb status on reproductive performance.

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