**Effect of stage of lactation on colostrum and milk composition in multiparous sows**

**C. D. Mateo*, H. H. Stein, M. R. Smiricky-Tjardes, and D. N. Peters**

***South Dakota State University, Brookings SD 57007 USA***

**ABSTRACT:** An experiment for measuring total milk solids (TMS) and CP of colostrum and milk from sows at different stages of lactation was conducted. Crude protein as a percentage of total milk solids at different stages of lactation was calculated as well. Thirteen sows (parity 6) originating from a triple cross mating of Yorkshire x Duroc x Landrace were used in this experiment. Litter size was standardized to 11 piglets per litter. Sows were fed a 14% CP corn-soybean meal based diet in gestation. In lactation, sows were fed an 18% CP corn-soybean meal based diet. During the initial 3 d of lactation, feed intake was restricted, but after that sows were allowed to consume their diets on an ad libitum basis. Both diets were formulated to meet or exceed the NRC requirements for all nutrients. The experimental period lasted 28 d, with milk being collected on d 0 (within 12 h of farrowing), 3, 7, 14, 21, and 28. One ml of oxytocin was administered intravenously (via the ear vein) to facilitate milk letdown. All functional teats on both sides of the sow mammary gland were hand stripped in succession and a total of 50 ml of mammary secretions were collected per collection date. Milk samples were analyzed for TMS and CP, and CP as a percentage of TMS was calculated. Sow performance data were also summarized and compared. Total milk solids decreased ($P < 0.002$) from 26.7% on d 0 to 23.1% on d 3. It further decreased ($P < 0.001$) to 19.3% on d 7, but after that, it remained constant ($P > 0.05$) at 18.2, 18.8, and 19.2% on d 14, 21, and 28, respectively. Milk CP decreased ($P < 0.001$) from 16.8% on d 0 to 7.7% on d 3. It further decreased ($P < 0.01$) to 6.2% on d 7, but after that, no changes ($P > 0.05$) were observed (5.5, 5.7, and 6.3% on d 14, 21, and 28, respectively). Throughout lactation, milk CP was positively correlated to TMS ($P < 0.05$). Changes in sow BW during lactation were correlated to ADFI ($P < 0.001$). The results of this study suggest that the TMS and CP concentrations of sow mammary secretions change during the first week of lactation, but after that it is constant. A positive correlation between TMS and CP exists. During lactating, ADFI is correlated to changes in sow BW.

**Key Words: Lactation, Colostrum, Milk, Nitrogen, Sow, Total Milk Solids**