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Short-term supplementation with rice bran in pre-partum primiparous grazing beef cows

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When native pastures is the primary diet for cattle, pregnant cows in the last trimester of pregnancy are exposed to winter, when the quantity/quality of forage is poor. In extensive production systems, long-term supplementation is not economically profitable. The aim of this study was to evaluate the effect of a short-term supplementation in primiparous cows and its effects on body condition score (BCS), body live weight (BW), milk production (MP) and early pregnancy rate (EP). Twenty five pregnant heifers (AAxHH) that were previously inseminated at 26m, were randomly assigned to two treatments 56 days before the expecting calving date (Day 0): (1) cows grazed native pastures (CON; n=12); (2) cows grazed native pastures and supplemented daily with whole-rice bran at 0.75 kg /100 kg BW during the last 38 days of gestation (SUP; n=13). All animals were managed together. BCS and BW were recorded biweekly. MP was measured at Day 15 and 30 postpartum (pp) and every 30 days thereafter. The mating period started at Day 49 pp and lasted 60 days. EP was performed by ultrasonography. BW, BCS and MP were analyzed by repeated measures using the MIXED procedure with time as the repeated effect and probability of EP was fitted using the GENMOD procedure with the binomial distribution. At the onset of the supplementation cows weighed (mean±sem) 398±8.0 kg and had 3.8±0.08 u of BCS. At calving, there was no difference in BW or BCS between cows from both groups (381±8.0 kg; 3.7±0.08 u). Calves BW at birth was similar between treatments (38.2±1.6kg). There was no effect of treatment on MP but it decreased significantly ($P<0.0001$) along the pp period, being in average 8.6±0.5 kg/d at Day 15 and 4.3±0.5 kg/d at Day 120. Probability of EP tended ($P=0.08$) to be greater in SUP than in CON cows (58 vs 23%). Short-term supplementation before calving could be an economical and effective technique to increase reproductive performance but more research is needed.

Session 11

Theatre 9

The relationship between pork quality traits and fatty acids composition

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Fatty acid composition is a major factor in the nutritional value of meat, with a high polyunsaturated fatty acid to saturated fatty acid ratio of 0.4 or above considered as suitable for human consumption. The objective of performed study was to estimate correlations between fatty acids composition and meat quality traits in *M. longissimus dorsi* of pork. The experiment was conducted with 25 meat samples. Pigs were grown in the same housing and feeding conditions. The traits included cooking loss, water holding capacity, color intensity, pH, color, dry matter, fat and fatty acids content. All the studies were performed 48 hours after slaughter and were performed according to generally accepted methods. The most statistically significant correlation was between the fatty acid composition of fat and dry matter content in the muscles. Negative and positive correlation coefficients ranged from very small (0.001) to very large (0.92). The mainly fatty acids from all pork technological quality parameters correlated with pH and cooking loss ($P<0.01$), ($P<0.001$). Statistically significant positive correlation was between water holding capacity and total monounsaturated fatty acids ($P<0.01$), the most of them with oleic acid (C18: 1) ($P<0.01$), cis-11-eicosenoic acid (C20: 1) ($P<0.001$), and negatively – with arachidonic acid (C20: 4) ($P<0.05$) and total polyunsaturated fatty acids ($P<0.05$). Meat color and fatty acids are positively correlated with palmitoleic acid (C16: 1) and total saturated fatty acids ($P<0.05$) and negatively correlated with docosapentaenoic acid (C22: 5) and homogamma-linolenic acid (C20: 3) ($P<0.05$). In pork dry matter content is negatively correlated with stearic acid (C18: 0) ($P<0.05$), as well as negatively correlated to the total saturated fatty acids ($P<0.10$).