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The effect of the levels of undigested NDF (uNDF) and starch in transition cows on lactic acid consumption in the ruminal fluid during early lactation

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In modern intensive dairy production systems, several conditions may indirectly cause increased occurrence of rumen acidosis. Production of lactic acid occurs in the rumen from fermentation of a large amount of readily-fermentable carbohydrates often results in lactic acidosis. Lactate in adapted rumen can be metabolized to propionate. A constant concentration of lactic acid in a healthy rumen may reflect a rate of utilization approximately equal to that of production. To this end, the present study investigated the feeding of different levels of undigested NDF and starch in transition cows and their effects on lactic acid consumption in the rumen during early lactation. 30 pregnant Holstein cows were divided into two groups, with one group being fed with wheat straw and the second group with sugar beet pulp as a source of fiber. Upon parturition, each group was divided into two sub-groups; one fed with same fiber source and the other fed with nadir fiber source. Feed intake was recorded before and after parturition. On day 10 after parturition, 10 ml rumen fluid was taken by rumenocentesis and the ability of rumen fluid for lactic acid consumption determined. The correlation between dry matter intake (DMI) before and after parturition was analyzed using the Bayesian approach, after correction for fixed effect (fiber source treatments). There was no significant difference between treatments for lactic acid consumption. However, the highest probability density of 95% of correlation between above parameters ranged from 0.18 to 0.83, which does not contain the zero value, thus indicating a significant correlation (~ρ=0.53).

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