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Study the effect of adding some essential amino acids in starter on health and performance of dairy calves

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Abstract

As protein is the most expensive ingredient in feedstuffs, stable dairy farming is achieved with feeding high quality diets with balanced amino acids in diet. Present study was done to evaluate the effect of adding amino acids in starter with moderate crude protein and to compare it with high protein starter without amino acid. To do this, 48 males and females Holstein dairy calves were studied from 3 until 70 days of age. Experimental diets included: (1) 18% CP in starter with 20% more methionine and lysine, (2) 18% CP in starter with 20% more lysine and methionine and 10% more threonine, (3) 18% CP in starter with 20% more lysine, methionine and threonine and (4) 22% CP in starter without amino acids. During whole period and before weaning, calves in treatment 1 had higher starter intake. Calves fed with higher crude protein, had higher feed conversion ratio. Daily weight gain and final weight was not different between treatments. Experimental diets had no significantly effect on blood parameters. Only at the end of experiment, calves fed with higher crude protein without amino acids, had higher BUN. Calves fed with 20 percent more lysine, methionine and threonine (diet 3), had fewer bouts of diarrhea and body temperature. Overall, the results of the present study showed that adding lysine, methionine and threonine amino acids, did not have significant effects on growth performance and immunity blood parameters. However, starter diet with moderate crude protein level, utilized more efficiently than starter with higher crude protein level.

Key words: Starter, Immunity, Threonine, Lysine, Methionine

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