Effects of lactic acid bacteria Lao27 (*Lactobacillus plantalum* Lao 27) in total mix ration silage on *In vitro* digestibility, feed intake and growth performance of Lao native buffaloes

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Abstract:
The experiment aims to study the effects of lactic acid bacteria Lao27 (*Lactobacillus plantalum* Lao 27**)** in total mix Ration silage (TMRS) on chemical composition, *in vitro* digestibility, voluntary feed intake and growth performance in Lao native buffaloes (*Bubalus bubalis*) . Eight male buffaloes within 2-year old and 235 kg average live weight were randomly assigned to receive two dietary treatments as TMRS1 (TMRS without LAB) and TMRS2 (TMRS with LAB, *Lactobacillus plantalum* Lao 2**7** by 5 mg/kg of feed) according to a Completely Randomized Design. All animal were fed *ad libitum* and clean drinking water with in 120 day fattening. Animal were weighed every 14 days. The results of this experiment showed that chemical composition of TMRS1 and TMRS2 were as followings: dry matter (DM) = 22.99-23.26%, crude protein (CP) = 13.99-14.80%, nuetral detergen fiber (NDF) = 49.17-50.42%, pH value = 3.73-3.90. Feed digestibility using *in vitro* gas production technique showed that *in vitro* dry matter digestibility (IVDMD) at 12 hours of TMRS1 and TMRS2 were 37.7 and 61.33% ($p<0.05$), while IVDMD at 96 hours were non-significant different 86.69 and 91.71% ($p>0.05$) respectively. The *in vitro* organic matter digestibility (IVOMD) at 12 and 96 hours of TMRS1 and TMRS2 were non-significant different among treatments ($p>0.05$). The %BWI indicated that no significant different 1.48 and 1.66 % ($p>0.05$), There was significant difference in average daily gain between buffaloes fed TMRS1 and TMRS2 (0.90 and 1.70 kg/head/day, respectively). In conclusion, silage will be well preserved by using *Lactobacillus plantalum* Lao 27. Moreover, feeding TMRS2 is better than without TMRS1 for ADG in Lao native buffaloes.

Key words: total mixed ration silage (TMRS), lactic acid bacteria, native buffaloes, *in vitro* digestibility, growth performance