FERMENTATION PARAMETERS CALLIANDRA CALOTHYRSUS Y VIGNA UNGUICULATA SILAGE AND HAY IN THE RUSITEC SYSTEM

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Objective: The ruminal fermentation parameter, apparent nutrients degradation and methane production in vitro of mixture of legumes with and without tannins silages and hays in the Rusitec System were evaluated.

Materials and methods: The silages treatments (T) were: T1: Calliandra calothyrsus 100%, T2: Vigna unguiculata 100%, T3: Calliandra calothyrsus/Vigna unguiculata 67/33%, T4: Vigna unguiculata/Calliandra calothyrsus 67/33%, Hays: T5: Calliandra calothyrsus 100%, T6: Vigna unguiculata 100%, T7: Calliandra calothyrsus/Vigna unguiculata 67/33% y T8: Vigna unguiculata/Calliandra calothyrsus 67/33%. Eight treatments with four repetitions each one and a chance completes blocks design was evaluated. Diars measurements were made of pH and redox potential control variables rumen. The evaluated variables were methane production (ml/d), ammonium (mmol/l), organic matter (MO) degradation (%), protein (PC) and fibers and counting protozoa and bacteria. The variables were analized in the statistical package SAS version 9.1, 2003.

Results: The bromatologic composition of legumes hay and silages there was significant difference (P< 0.05) due to treatments, showing better protein quality the hays than silages. The variables redox potential and pH control showed no difference between treatments, and remained normal. No statistically significant difference was detected for microorganisms: protozoa and bacteria. The Calliandra calothyrsus of silages had greater fiber contain than Vigna unguiculata. The organic matter, crude protein and fiber degradation was great in legumes silages than hays, being highest for Vigna and her mixtures, than for Calliandra. The methane production was great in the silages legumes without tannins than hays, and higher in Vigna unguiculata than Calliandra calothyrsus. The ammonium there was not significant difference between treatments.

Conclusion: In the system RUSITEC effect was found for the type of forage and the processing done. The silages showed the greatest degradation of OM, CP and fiber production of methane and ammonia. La Vigna unguiculata is a legume that fails to submit the largest fractional degradation and production of methane and ammonia. Calliandra calothyrsus with its high tannin content does show that tannin protein complex can not be degraded and therefore reported low degradation and low methane production, becoming a kind potential for reducing greenhouse gases and promote the effect of bypass protein.