

Prospecting bioactive compounds from Pampa biome: Antiparasitic effect and mitigate enteric methane - Minho A.P.¹, Gomes C.C.G.¹, Chagas A.C.S.², Juchem S.¹, Mazzocato A.C.¹, Louvandini H.³

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The Pampas of South America are a grassland biome being a great source of bioactive compounds (BC) that can be used to parasite control or to mitigate enteric methane (CH₄) produced by ruminants. The intensive use of chemical drugs has led to a problem of anthelmintics and acaricides resistance in sheep gastrointestinal nematodes (GIN) and cattle tick *Rhipicephalus (B.) microplus*, respectively. Recent surveys have identified antiparasitic effects of many BC, particularly from condensed tannin (CT). Studies with sheep and cows have shown that the use of forages containing CT can reduce enteric CH₄ emissions from 13% to 16%. Some *in vitro* assays will be used to investigate the anthelmintic efficacy of BC: larval migration inhibition (LMI), larval feeding inhibition (LFI) and egg hatching (EH). Adult and larval immersion test will be used to evaluate the effect of plant extracts against the *R. (B.) microplus* stages. After screening, the best BC will be evaluated using *in vivo* assays. To quantify the CH₄ will be performed *in vitro* screening in bottle assay and Sulfur Hexafluoride tracer (SF₆) *in vivo* technique with the best BC. The objective of this project is to evaluate *in vitro* and *in vivo* potential use of BC from Pampa Biome to: control GIN of sheep, control cattle tick and mitigate CH₄ produced by ruminants. The main impact would be the development of new products based on BC that could be used on parasite control reducing selection pressure of chemical drugs and CH₄ mitigation in livestock production.

Key-words: control, parasites, greenhouse effect

Embrapa project number: Preapproved, yet unnumbered