

adsorption affinity (low K_d) to ETA and caused greater inhibition in contractile response (low IC_{50}). Percent contraction was predicted from the adsorption data using the equations $y = 0.98 \pm 0.06(x) + 0.15 \pm 2.07$ ($R^2 = 0.82$, $P < 0.01$) and $y = 0.92 \pm 0.05(x) - 1.35 \pm 1.74$ ($R^2 = 0.87$, $P < 0.01$) for MIP and NIP, respectively. These studies indicated that synthetic polymers are potentially effective adsorbents toward ergot alkaloids that could mitigate their impact, provided that they could be used in animals. Although earlier studies pointed towards an increased specificity of MIP towards alkaloids adsorption, no differences were observed between products. The ex vivo efficacy of both polymers was accurately predicted from in vitro adsorption data.

Key Words: ergot alkaloids, imprinted polymer, myograph
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301 Effect of nitrogen source on methane emissions

from grassland soil. A. S. Cardoso^{*1}, B. G. Quintana¹, E. R. Januszkiewicz¹, L. F. Brito¹, E. S. Morgado², R. A. Reis³, and A. C. Ruggieri¹, ¹São Paulo State University, Jaboticabal, Brazil, ²Universidade Federal de Uberlândia, Uberlândia, Brazil, ³São Paulo State University (UNESP) School of Agricultural and Veterinarian Sciences, Jaboticabal, Brazil.

Methane (CH_4) is an important greenhouse gas. Its global warming potential is approximately 32 times higher than that of carbon dioxide (CO_2). Animal feces is the main source of CH_4 in grassland sites. It has been speculated that methanogenic and methanotrophic microorganism activity can be affected by nitrogen source and, consequently, CH_4 fluxes. The aim of this study was to analyze the effect of different sources of nitrogen applied to a grassland soil on CH_4 fluxes. The experimental design was completely randomized with 3 treatments and 4 replicates. The treatments were 3 sources of nitrogen (ammonium, nitrate, and urea) applied to the soil using urea, potassium nitrate, and ammonium sulfate. An incubation under controlled conditions was carried out to quantify the CH_4 fluxes from a tropical Ferralsol. The CH_4 emissions were evaluated using a static closed chamber and the gas concentration was determined by gas chromatography. The ANOVA was performed using the cumulative CH_4 emissions that were

obtained integrating the fluxes over time. The Tukey's test was run to distinguish differences among means. The cumulative CH_4 production was -1.19 (0.24), -1.26 (0.09), and 0.88 mg CH_4/m^2 (0.84) for ammonium, nitrate, and urea, respectively. The sources of nitrogen tended to influence the CH_4 emissions ($P < 0.1$). The treatment urea induced CH_4 emission, whereas for the sources ammonium and nitrate, CH_4 was oxidized. These differences can be attributed to the molecular composition of N sources. The CO_2 produced during urea hydrolysis can be converted to CH_4 , and this probably explains the CH_4 emissions at approximately 2.4 times higher for urea compared with the ammonium sulfate and potassium nitrate. In a tropical grassland, CH_4 emission or oxidation vary according to the nitrogen source applied to the soil.

Key Words: greenhouse gas, methane oxidation, tropical soil
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302 Intake and digestibility of diets with different amounts of *Senna spectabilis* in hair lambs.

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The aim of this study was to determine the intake and digestibility of diets with different amounts of fruits of *Senna spectabilis*. The experiment was carried at Las Brisas Farm of the University of Tolima, Colombia. Twelve hair lambs (22 ± 2.5) were individually housed in digestion crates in 4×4 Latin square design. Each period consisted of 14 d of adaptation and 5 d of sample collection. The feeding treatments evaluated were based on hay from *Dichantium aristatum* with incremental amounts of *S. spectabilis*: 0, 15, 30, and 45%. The digestibility of the diets was determined through the total stool collection. Twelve crossbred male lambs were assessed, with an average weight of 22 kg (± 4.49) housed for 14 d in a shed for adaptation to the experimental diets and 5 d in metabolic cages for the recollection and weighting of the food and feces of each experimental period. Data was analyzed using PROC REG of SAS version 9.1. The results (Table 302) show that the DMI was not influenced by the inclusions of *S. spectabilis*; however, CP intake did improve as fruit inclusion increased ($P < 0.0001$). The amount of *S. spectabilis* was

Table 302. In vivo digestibility of the DM, OM, and the RP in lambs fed with varying levels of fruits of *S. spectabilis*

Variable	Treatments				Ether extract	P-value	
	T1 (0%)	T2 (15%)	T3 (30%)	T4 (45%)		Linear	Quadratic
DM	Intake, g/d	529.56	545.19	547.50	524.56	0.92	0.0005
	Dig, %	50.29	50.61	56.01	57.64	5.85	0.875
OM	Intake, g/d	492.83	508.49	513.01	491.92	8.14	0.980
	Dig, %	54.64	54.86	59.60	61.49	0.87	0.001
NDF	Intake, g/d	411.87	396.40	379.45	342.07	5.90	<0.0001
	Dig, %	50.86	51.52	54.91	52.36	0.94	0.342
CP	Intake, g/d	19.68	30.40	35.19	37.47	1.29	<0.0001
	Dig, %	44.36	56.80	58.39	65.94	1.69	<0.0001

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