



AMERICAN SOCIETY OF ANIMAL SCIENCE

Evaluation of the population profile of methanogenic microorganisms in animals treated with the additive Fator P[®]



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INTRODUCTION:

The reflects caused by climatic variations in the world, has been attributed to the increase in the emission of greenhouse gases and as a consequence of worsening global warming, and the improper handling of animals can contribute to the emission of gases of enteric origin, which are harmful to the environment.

METHODOLOGY:

The aim of this work was to evaluate the profile of methanogenic microorganisms by the method of relative quantification by qPCR in animals treated with the natural additive Fator P[®]. The experiment was carried out in triplicate, with a total of six animals, in pasture, receiving 6 gr of the Fator P[®] additive and control.

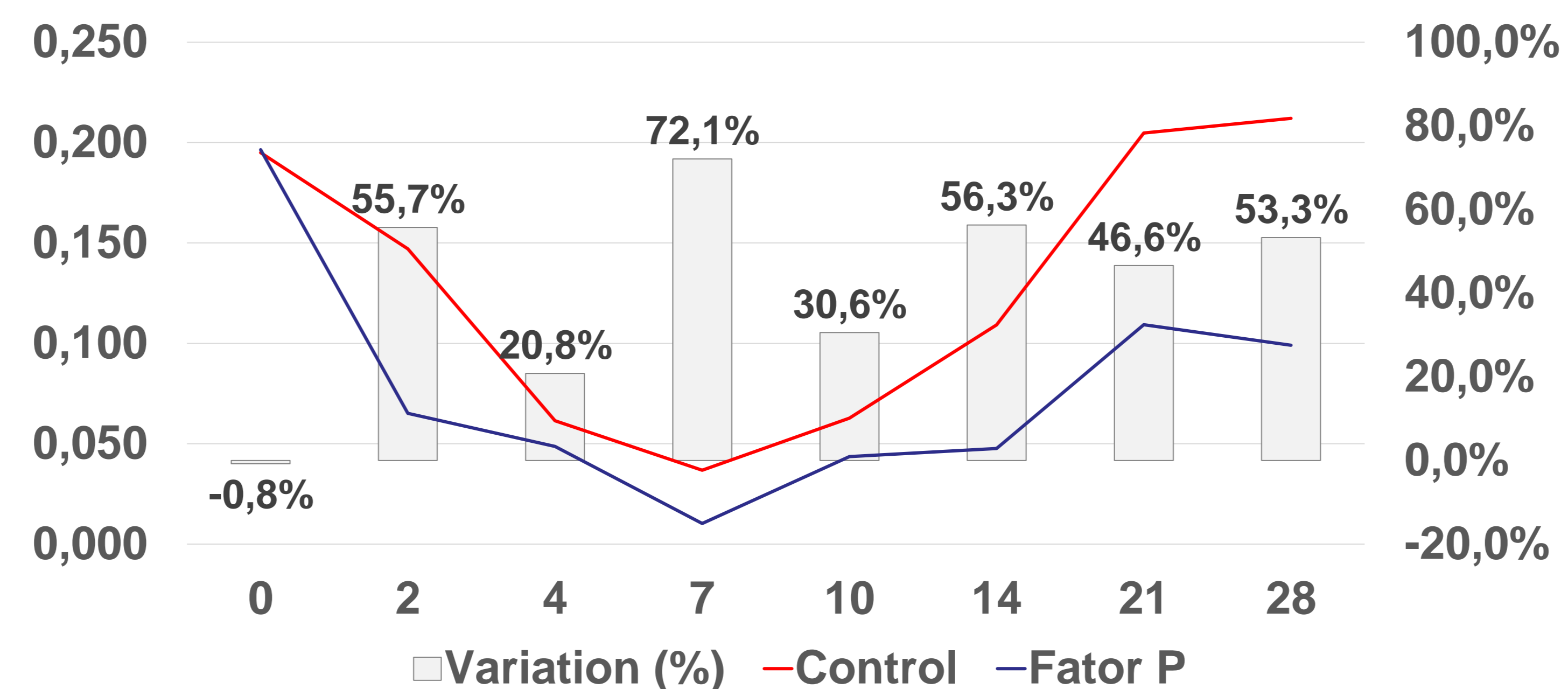
Over 28 days of experiment, the ruminal liquid was collected in days 0, 2, 4, 7, 10, 14, 21, 28, and the DNA was extract using by Qiagem 51604 kit.

The reaction of qPCR was realized using a primers sequence of total bacteria and methanogenic bacteria.

RESULTS:

The relative quantification of qPCR was calculated according the CTs (threshold cycle) of target gene and the endogen control positive gene (total bacteria): **Relative Quantification = 2^{-(CT target – CT Bacteria Total)}**

Evaluation of the population of methanogenic



| Days | 0 | 2 | 4 | 7 | 10 | 14 | 21 | 28 |
|----------------|--------|---------|-------|---------|--------|---------|----------|---------|
| Variation | -0,8% | 55,7% | 20,8% | 72,0% | 30,5% | 56,3% | 46,6% | 53,2% |
| P Value (0,05) | 0,9885 | 0,0188* | 0,667 | 0,0445* | 0,1961 | 0,0123* | 0,0049** | 0,0499* |

DISCUSSION:

The Fator P[®] is a natural zootechnical additive that was developed to attend the current needs of the livestock market, and make the management system more productive and sustainable and reduce impacts on the environment.

The use of additives in the diet of animals tends to be more advantageous as it will equilibrate the ruminal microbial flora, modulate the ruminal metabolism, and reduce the emission of greenhouse gases to environment.

CONCLUSION:

The results indicated reduction of **49.2%** in general average during the period. This data showed that this additive can reduce the emission of gases of enteric origin and shows the efficiency of the additive in management system more productive and sustainable.

REFERENCES:

Vito, E.S. et al. Effect of crude glycerine in supplement on the intake, rumen fermentation, and microbial profile of Nellore steers grazing tropical grass. Livestock Science. v. 192, p.17-24, 2016.