TANNINS ARE A USEFUL TOOL TO AVOID LIVER ABSCESSES IN FEEDLOT CATTLE

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Abstract
Ruminants fed with concentrates usually develop ruminal acidosis, which reduce the animal productivity. Liver abscess is a frequent consequence of the low ruminal pH. Antibiotics Grow Promoters (AGP), commonly used in feedlot animals, reduce the incidence of hepatic abscesses. Vegetable extracts (i.e. tannins) can prevent ruminal acidosis. In order to test the use of natural tannins for the prevention of the hepatic abscesses appearance, 495 heifers divided into 2 groups were fed with the same basal diet, added with 0.25% DM of a blend of tannins (Silva feed Bypro), or with 40 mg/kg DM of monensin. The inspection of livers at the slaughter showed a prevalence 1.2% of abscess in the tannin group vs 5.9% in the monensin group ($p<0.05$), suggesting that the addition of the blend of tannins can significantly reduce the development of hepatic abscesses.

Introduction
Ruminal acidosis develops in ruminants fed with high content of concentrates, such as feed -lots conditions. Even when subclinical, this disorder impacts negatively in the animal productivity. The formation of abscess in liver is frequent because the low ruminal pH injuries the epithelium and bacteria, such as *Fusobacerium necrophorum* and *Corynebacterium pyogenes,* can enter the Porta hepatic system.
Liver abscesses results in lower conversion efficiency and in liver confiscation in the slaughter. Antibiotics Grow Promoters (AGP), used in feedlot animals to improve the productive performance, may reduce the incidence of hepatic abscesses. It has been observed that vegetable extracts (i.e. tannins) can prevent ruminal acidosis and have a strong antibacterial activity. The aim of this work was to test the efficacy of a mix of natural tannins in the prevention of hepatic abscesses.

Methods
A total of 495 heifers were divided in 2 groups (258 and 237 animals for groups 1 and 2, respectively). Both groups were fed with the same diet. Group 1 received additionally 0.25% DM of a blend of tannins (Silva feed Bypro), and Group 2 40 mg/kg DM of monensin. After 2 months animals were sacrificed in the slaughterhouse, and their liver tested for the presence of abscess. Results were compared with the Fisher's exact Test.

Results
Three animals (1.2 %) showed abscess in the tannin group, and 14 (5.9%) in the monensin group. Differences between groups were statistically significant ($p<0.05$).

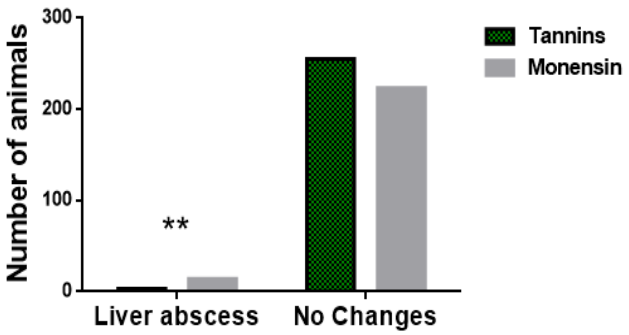

Figure 1: Number of animals with liver abscess and with no changes in both experimental groups

Figure 2: Liver from a Monensin group showing 3 abscess (multifocal supurative hepatitis) (arrowheads)

Conclusions
The obtained results indicated that, compared with the most used AGP, the use of a blend of tannins reduced the prevalence of hepatic abscesses in animals under confined production system. Further studies should be performed in order to evaluate different doses, but these results suggested that tannins, as natural additives, could replace the use of antibiotics for growing promotion.