

# EVALUATION OF AN ANTI-MYCOTOXIN AGENT ON MYCOTOXIN BINDING AND RUMINAL CHEMICAL PROFILES IN RUMINANTS: AN *IN VITRO* STUDY

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## INTRODUCTION

Ruminal microbiota plays a pivotal role in degrading and deactivating certain mycotoxins in ruminants’ daily diet. However, this process can be impaired by several factors (e.g. low ruminal pH; ruminal dysbiosis; high-producing cows), reducing the ability of the rumen to mitigate mycotoxins effects (Debevere et al., 2020; Zhao et al., 2018). Exposure of ruminants to mycotoxins is responsible for a decline in milk quality and quantity, a reduced ruminal fermentation efficiency and an increased incidence of reproductive disorders (Gallo et al., 2015; Battacone et al., 2009; Korosteleva et al., 2007). To counteract these detrimental effects, nutritional strategies have been implemented, such as the inclusion of anti-mycotoxin agents.

## OBJECTIVE

The aim of this study was to evaluated the capacity of an anti-mycotoxin agent, that included adsorbing material, phytogetic extracts and yeast-based components, to adsorb mycotoxins in *in vitro* ruminal conditions.

## MATERIALS AND METHODS

### EXPERIMENTAL DESIGN

- 2 Holstein dairy cows fistulated → Ruminal fluid
- 2 experimental replication
- 3 analytical replicate
- 2 time of medium incubation (1H, 4H)

UHPLC-HRMS

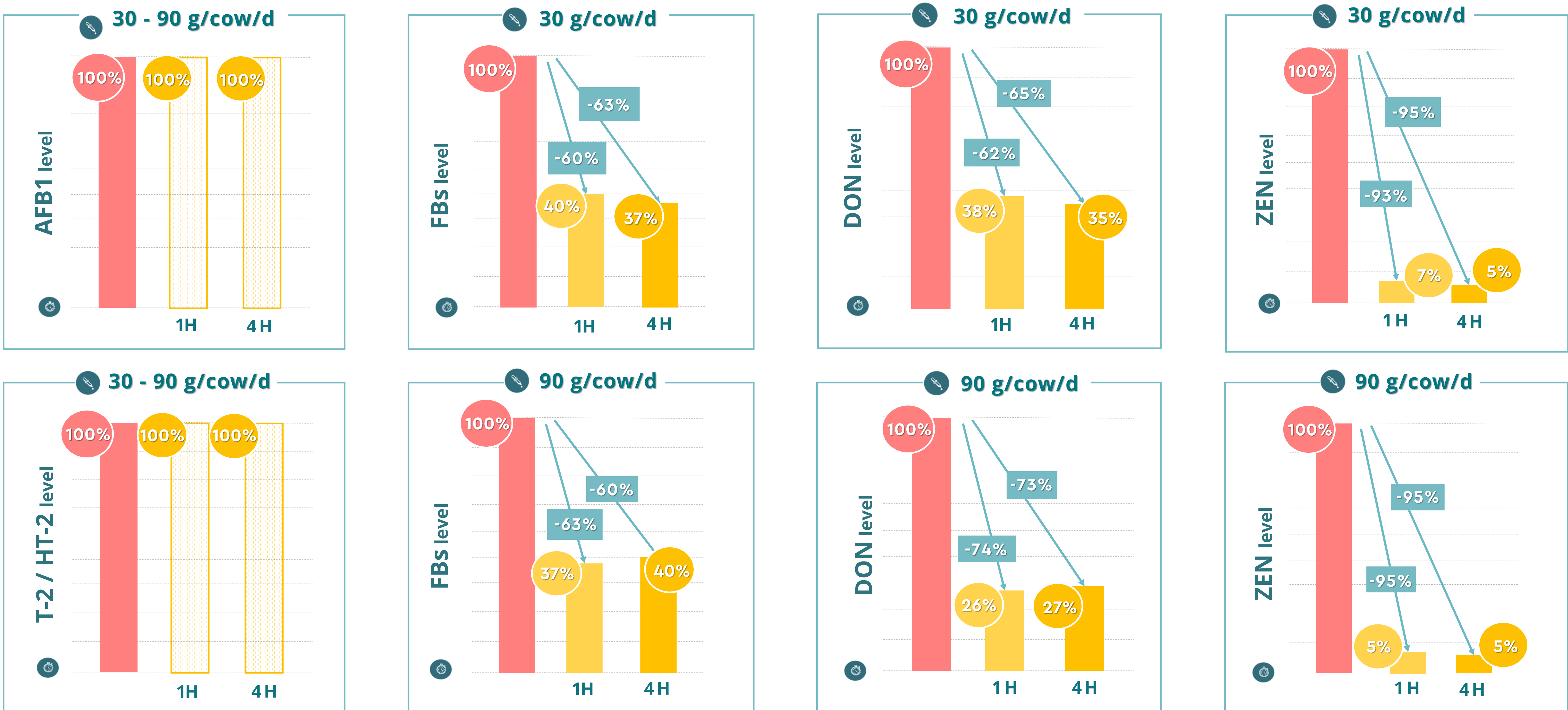
### EXPERIMENTAL GROUPS

- Positive control (PC)
- PC + Treatment dose 1: 30 g/cow/day (0,1%)
- PC + Treatment dose 2: 90 g/cow/day (0,3%)

### CONTAMINATION LEVELS

Mycotoxins	Concentration (ppm)
Aflatoxins (AFs)	0.002
Fumonisin (FBs)	10
Deoxynivalenol (DON)	2
Zearalenone (ZEN)	1
T-2 and H-T2	1

## RESULTS



## CONCLUSIONS

The anti-mycotoxins agent containing minerals, phytogetics and organic components demonstrated high mycotoxin binding capacity, even at low dose, and positively influenced ruminal chemical profiles in *in vitro* conditions.