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EFFECTS OF A MULTI-COMPONENT MYCOTOXIN DETOXIFIER ON THE ANTIOXIDANT STATUS AND THE PERFORMANCE OF SOWS

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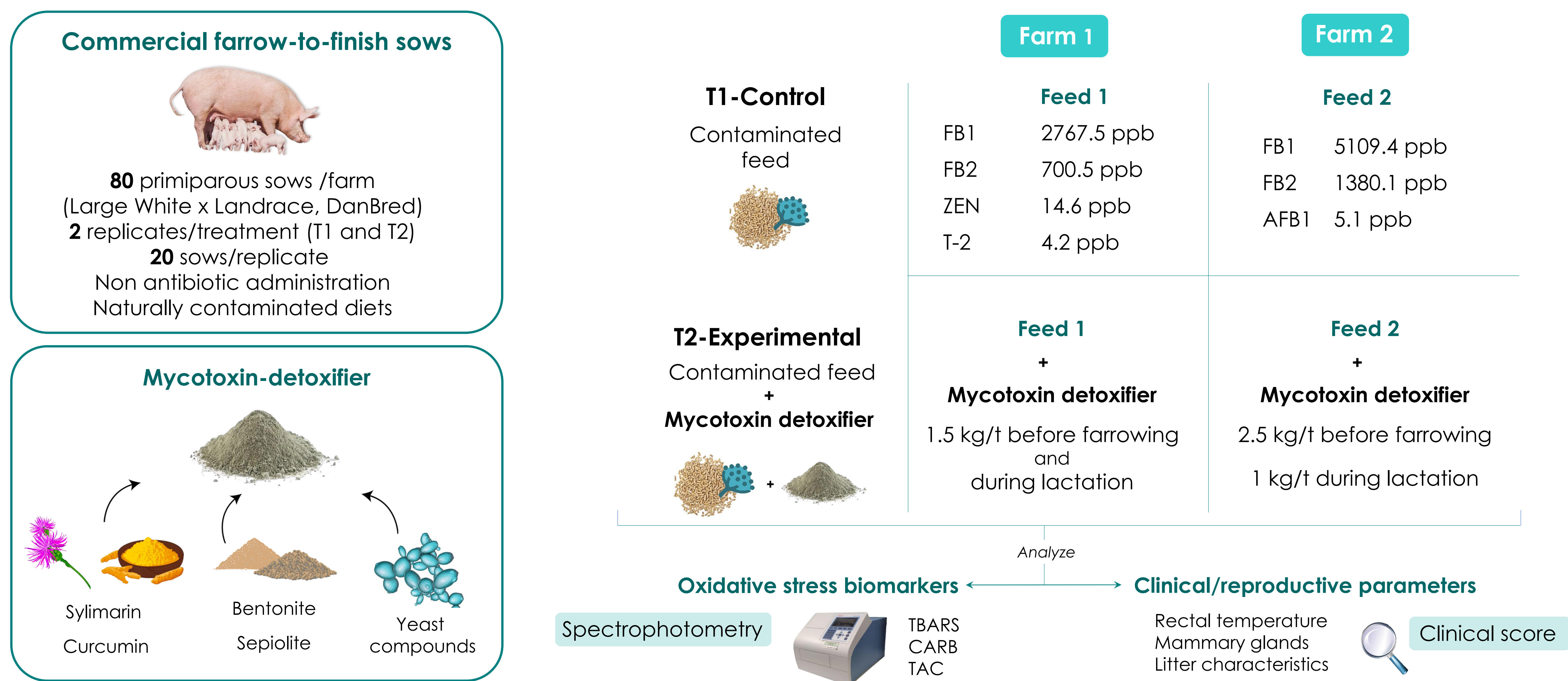
INTRODUCTION

Sows are highly susceptible to mycotoxins. The consumption of mycotoxin multi-contaminated diets can result in a variety of symptoms, mainly due to the **oxidative stress** induced. **Reproductive failures** and disruptions in the **piglets' development** can occur. Supplementing sows' diets with **mycotoxin-detoxifying agents** helps to **prevent** and **mitigate** mycotoxins toxicity through adsorbing the mycotoxins and reducing the oxidative stress, enhancing the health status and the reproductive performances.
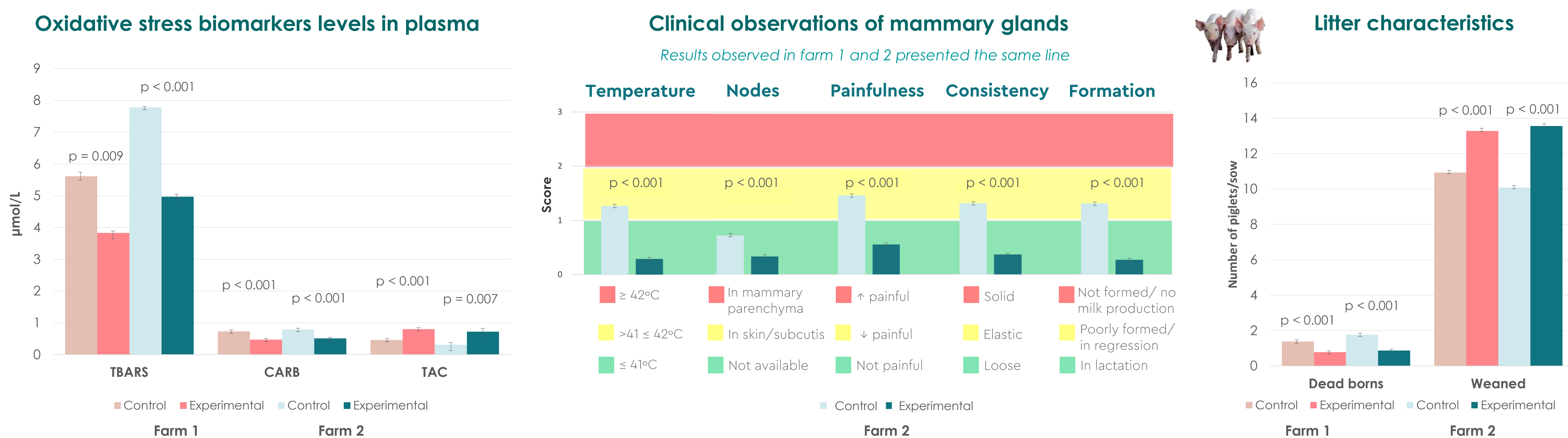
OBJECTIVE

The aim of this study was to evaluate the effects of an anti-mycotoxins agent on the antioxidant capacity, health and reproductive performance of gestating-lactating sows under mycotoxins challenge.

MATERIALS AND METHODS

Commercial farrow-to-finish sows

80 primiparous sows /farm
(Large White x Landrace, DanBred)
2 replicates/treatment (T1 and T2)
20 sows/replicate
Non antibiotic administration
Naturally contaminated diets

Mycotoxin-detoxifier

Sylimarin
Curcumin

Bentonite
Sepiolite

Yeast compounds

	Farm 1	Farm 2
T1-Control Contaminated feed	**Feed 1** FB1 2767.5 ppb FB2 700.5 ppb ZEN 14.6 ppb T-2 4.2 ppb	**Feed 2** FB1 5109.4 ppb FB2 1380.1 ppb AFB1 5.1 ppb
T2-Experimental Contaminated feed + **Mycotoxin detoxifier**	**Feed 1** + **Mycotoxin detoxifier** 1.5 kg/t before farrowing and during lactation	**Feed 2** + **Mycotoxin detoxifier** 2.5 kg/t before farrowing 1 kg/t during lactation

Analyze

Oxidative stress biomarkers ⟵ ⟶ **Clinical/reproductive parameters**

Spectrophotometry

TBARS
CARB
TAC

Rectal temperature
Mammary glands
Litter characteristics

Clinical score

RESULTS

Oxidative stress biomarkers levels in plasma

p = 0.009
p < 0.001
p < 0.001
p < 0.001
p < 0.001
p = 0.007

µmol/L

TBARS   CARB   TAC
Control Experimental Control Experimental
Farm 1   Farm 2

Clinical observations of mammary glands

Results observed in farm 1 and 2 presented the same line

Temperature	Nodes	Painfulness	Consistency	Formation
p < 0.001	p < 0.001	p < 0.001	p < 0.001	p < 0.001

≥ 42°C — In mammary parenchyma — ↑ painful — Solid — Not formed/ no milk production
>41 ≤ 42°C — In skin/subcutis — ↓ painful — Elastic — Poorly formed/ in regression
≤ 41°C — Not available — Not painful — Loose — In lactation

Control Experimental
Farm 2

Litter characteristics

p < 0.001   p < 0.001
p < 0.001
p < 0.001

Number of piglets/sow

Dead borns   Weaned
Control Experimental Control Experimental
Farm 1   Farm 2

CONCLUSIONS

The use of the multi-component mycotoxin-detoxifier in primiparous sows **promotes** their **reproductive performances** and improves their **antioxidant status** under mycotoxins multi-contamination challenge.

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