

Escent® S

Combat Mycotoxin Related Stress

Combat Mycotoxin Related Stress

Escent S®

Sophisticated synergy proven *in vivo*

Escent® S: more than a (myco)toxin binder

No doubt, mycotoxins present **one of the biggest issues in modern animal farming**. Recent evidence suggests that even low levels of multiple mycotoxins, under long-term field exposure, can impact animal performance and health. This negative, synergistic additive impact is exacerbated when combined with other stress factors, typically seen in real farming production, such as climatic conditions, stock density, poor quality of feed, low level of (subclinical) infections, etc.

To contextualise: the cumulative impact of the long-term exposure to several mycotoxins (even at low level) in the same farm, may be completely different between winter and summer. We thus, miss the bigger picture. That means we are in need of comprehensive technologies, with multiple modes of action and proven efficacy *in vivo*. Comprehensive technologies that can help the animal confront several stress factors under the prism of a concomitant mycotoxin exposure, even if the latter is considered low. As such, Escent® S is a **pioneering technology that helps animals cope with both abiotic and biotic stressors** via a multifaceted, holistic approach. *In vivo* data back-up the five modes of action Escent® S.



Escent® S: Five Modes of Action

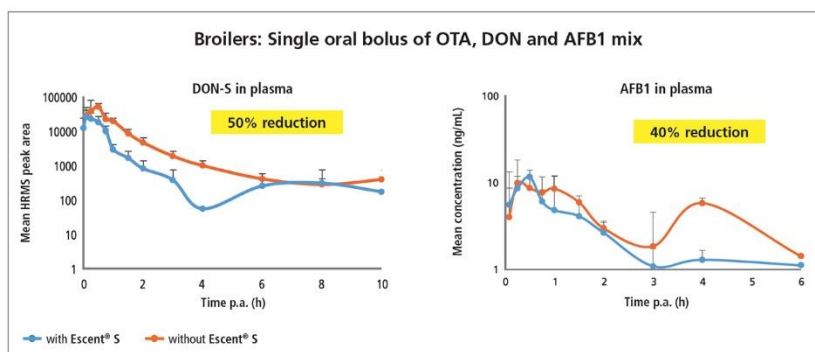
Escent® S - sophisticated synergy with proven efficacy *in vivo*



1. Supports the functions of the liver and the kidneys
2. Prevents oxidative damage
3. Stimulates the animal's immunity
4. Triggers biotransformation and detoxification processes within the liver
5. Adsorbs & binds polar (water soluble) toxins

Escent® S: Reducing systemic exposure to mycotoxins

Previous *in vitro* testing has proven the great ability of Escent® S to bind a great number of mycotoxins. However, *in vitro* results do not warrant an equal level of efficacy *in vivo*. For this reason, Innovad® in collaboration with Gent University (Belgium), developed and validated a 'biomarker' method that detects mycotoxins and their (phase I and phase II) metabolites in the blood of chickens and pigs. The validated method was, then, deployed for the evaluation of the *in vivo* detoxification efficacy of Escent® S, with very promising results. The research revealed that Escent® S exerted a significant detoxifying ability and reduced the systemic exposure of multiple mycotoxins in both species.



The findings themselves are particularly important, however, the real breakthrough has been the shift away from a simplistic toxin-binding approach. To this, under the Escent® S treatment even non-polar mycotoxins (like zearalenone) were systemically reduced. The evaluation of commercial technologies against several mycotoxins and their *in vivo* detoxification efficacy remains, thus, key.

[Download the technical bulletin](#)

ESCENT® S – Mycotoxin detoxification POWER under real farming conditions



The detoxification efficacy of Escent® S was evaluated under real poultry farming conditions with the analytical precision of [Myco-Marker®](#).


Two groups were tested: The first group was a Competitor technology (1kg/T) which served as the Control group (current standard farm practice), and the second group was Escent® (1kg/T). The **real mycotoxin risk** and the **true impact** on animal performance and health status were bio-monitored at several time-points with the analytical precision of Myco-Marker®.

Summary of the main findings:

1. **Escent® S reduced drastically the systemic exposure to mycotoxins when compared to the Competitor technology**
 - Although mycotoxin presence in feed was slightly higher in the Escent® S group, the level and presence of mycotoxins in blood were significantly higher in the Competitor (Control) group at the end of the trial. Namely, 60% of animals from the Competitor (Control) group were systemically exposed to mycotoxins whereas, only 10% of animals consuming Escent® S were systemically exposed to mycotoxins.
 - Four (4) mycotoxins were detected in the Competitor (Control) group at the end of the trial whereas, only one mycotoxin was detected in the Escent® S group (deoxynivalenol; similar levels between the Escent® S and the Competitor (Control) group).
2. **Escent® S reduced mortality:** The study revealed that the mortality at the end of the trial was higher in the Competitor (Control) group (1.65%) than in the Escent® S group (1.10%).
3. **Escent® S reduced sub-clinical symptoms and improved animal performance:**
 - The litter was wetter and the ammonia smell was stronger in Competitor (Control) group throughout the trial.
 - A low level of faecal wet droppings were observed in the Competitor (Control) group but none in the Escent® S group.

- Relative increased prevalence of late, low-level coccidiosis in the Competitor (Control) group.

	Competitor (Control) group (1kg/T)	Escent® S group (1kg/T)
Feed Risk Level 	A. Presence and concentrations of mycotoxins in Feed	
	1. Fumonisin (200 ppb)	1. Fumonisin (500 ppb) 2. Deoxynivalenol (260 ppb)
Blood 	B. Relative Percentage of animals systemically exposed to mycotoxins (blood)	
	60% of animals	10% of animals
	C. List of mycotoxins present in Blood	
	1. Deoxynivalenol 2. Aflatoxins 3. Tenuazonic acid 4. Beauvericin	1. Deoxynivalenol
	<i>Note: Similar levels (traces) of deoxynivalenol were detected between the two groups</i>	

	Competitor (Control) group (1kg/T)	Escent® S group (1kg/T)
Overall risk	Heatmap risk scale 	
	Moderate Low	
Performance and Animal Health Status	D. Mortality	
	1.65%	1.10%
	E. Animal Performance & Health indicators	
	<ul style="list-style-type: none"> • Wetter litter throughout the trial • Stronger ammonia smell • Relative increased prevalence of late, low-level coccidiosis in the Competitor (Control) group 	<ul style="list-style-type: none"> • Less wet litter throughout the trial • Reduced ammonia smell • Relative reduced prevalence of late, low-level coccidiosis in the Competitor (Control) group
	<i>Note: Caecum autopsy was performed in isolated cases (birds) with bloody diarrhea from both groups at the end of the trial (D = 60). The autopsy indicated a certain level of sub-clinical gut inflammation with lesions and haemorrhages indicative of late coccidiosis (Eimeria tenella), likely predisposed by mycotoxins.</i>	

The field trial under a non-controlled environment confirmed the *in vivo* mycotoxin detoxification and stress-relief power of the Escent® S Technology.

At the same time **Myco-Marker®** proved a reliable and powerful **biomonitoring tool** in terms of **animal exposure** to mycotoxins: **Myco-Marker®** was deployed over the course of 30 days,

demonstrating it can be easily used in field conditions to evaluate precisely stress impact in livestock.

Overall, the results of the field trial in a non-controlled environment demonstrated the POWER of the RISE®platform – a real breakthrough in the Mycotoxin-related stress control management.