THE EFFECT OF BETA-GLUCANS ON IMMUNITY IN DIFFERENT SPECIES

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Undertaken by researchers from 2 American countries

INNATE IMMUNITY
- Immediate
- No “learning” necessary
- Non-specific response to a pathogen

ADAPTIVE (ACQUIRED) IMMUNITY
- Put into place slowly
- It must learn to recognise pathogens
- Highly specific response

Innate immunity cells absorb and break down pathogens by phagocytosis

Antibody production
Destruction of infected cells
The specific functions of innate immunity cells are activated

Question: Is the immunostimulating effect of beta-glucans the same in different vertebrate species?

Beta-glucans = cell wall of baker’s yeast (Saccharomyces cerevisiae)

Supplementation with 25mg/kg/bodyweight of beta-glucans daily for 28 days

THE FINDINGS

INCREASED INNATE IMMUNE RESPONSE.
Increase in the production of IL2 → molecule which stimulates both innate and adaptive immune cells.

INCREASED PHAGOCYTIC CAPACITY for:
- Neutrophils, antibacterial agents
- Monocytes, precursors of macrophages, which are very active on the phagocytosis front, but also regulate adaptive immunity.

INCREASED CAPACITY FOR PRODUCING ANTIBODIES.
The production of antibodies following the injection of an unknown, thus potentially dangerous, molecule (antigen), is increased.

AS A REMINDER

In the horse, beta-glucans stimulated:
- Vaccination responses in trotters in training
- Colostrum quality in broodmares

CONCLUSION
Beta-glucans stimulate the immune system in an equivalent manner no matter the species.