

A new feed solution to mitigate EHP prevalence in shrimp

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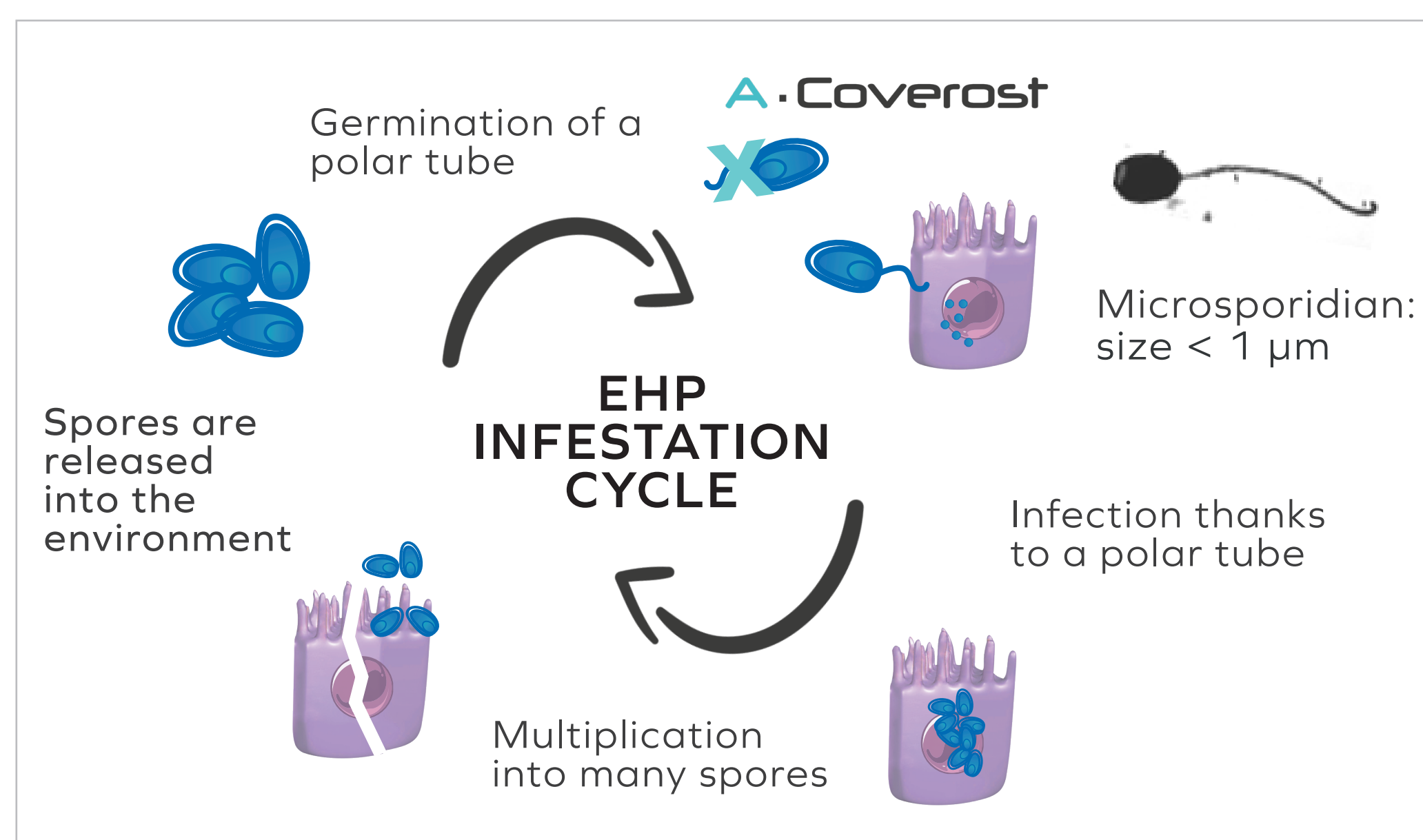
1 Context and introduction

Microsporidian *Enterocytozoon hepatopenaei* (EHP) remains a huge health challenge in our shrimp industry and often leads to the infection of opportunistic pathogens causing different diseases. EHP does not appear to cause high mortality, but it is associated with severe growth retardation and degraded feed conversion ratios (FCRs) leading to economic losses.

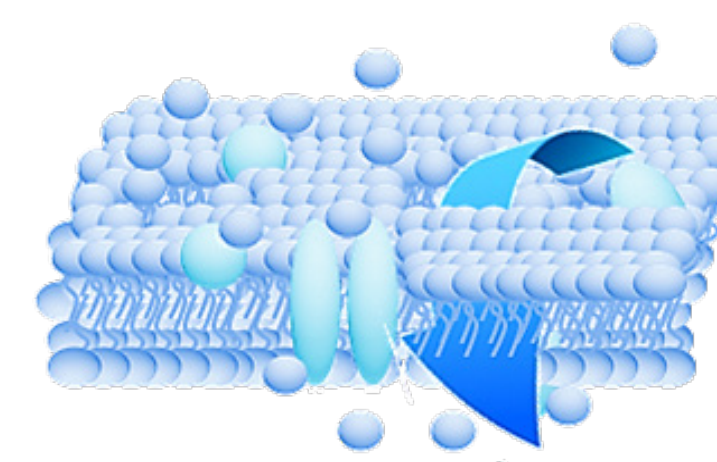
The aim of the current research at miXscience (France), is to design a specific solution against EHP in shrimp aquaculture. Efficacy was demonstrated from the laboratory to the field, focusing on the reduction of germination of EHP spores and its associated effect on shrimp performance.

2 The ehp cycle & mechanisms of actions of the product

Since EHP has an internal phase during which spores enter host's cells, it is important to ensure that the parasite is inhibited from host cell entry during its external phase when spores are free, non-protected and before the emergence of their polar tube. This is a fundamental point when deciding on recommendations for application of this new biosecurity tool.

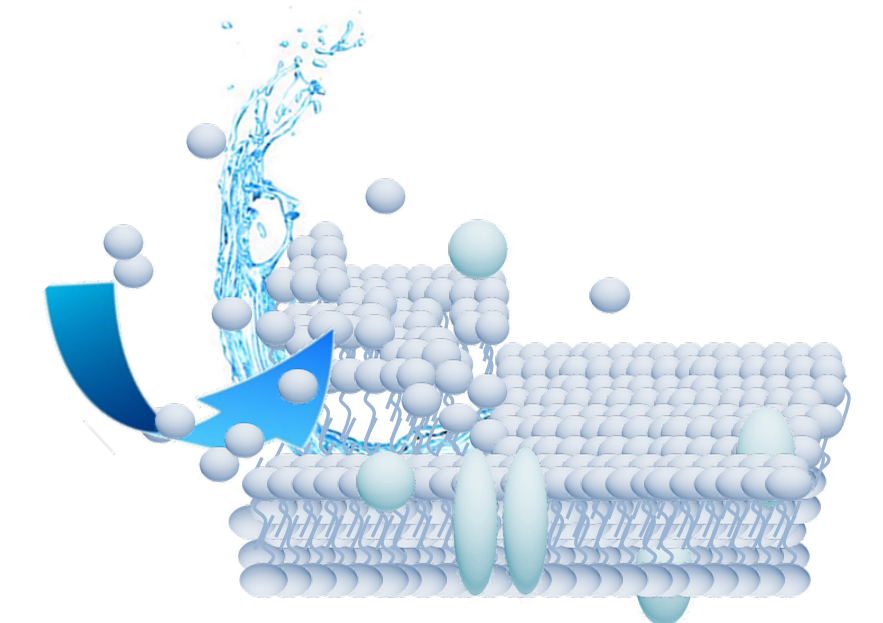


1 A blend of unique oleochemicals which ...



Alters the cytoplasmic membrane of the parasites and interferes with cytosolic contents & functions.

2 A specific active matrix which...



Brings an abrasive effect slicing up the parasites and a desiccating effect that adsorbs the water content of the parasite

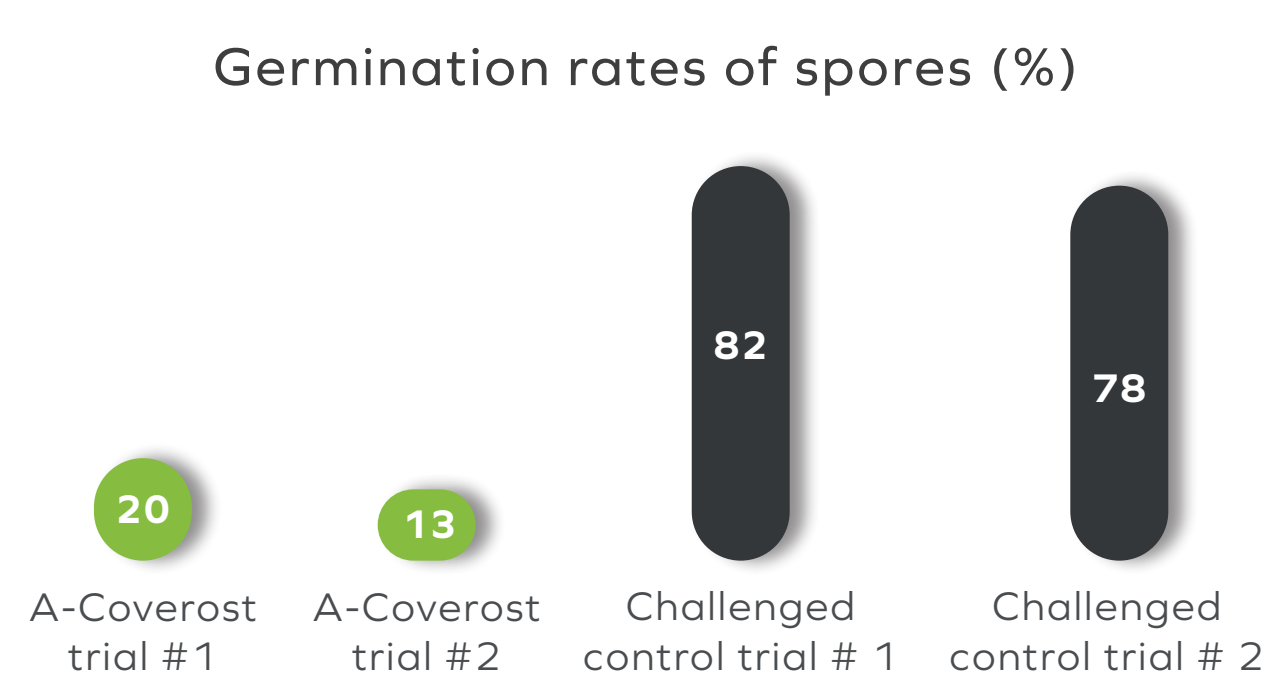
1 + 2 = 3

The ability to break down the outer protective architecture of the parasite makes it more sensitive to further attacks by the host's defense system.

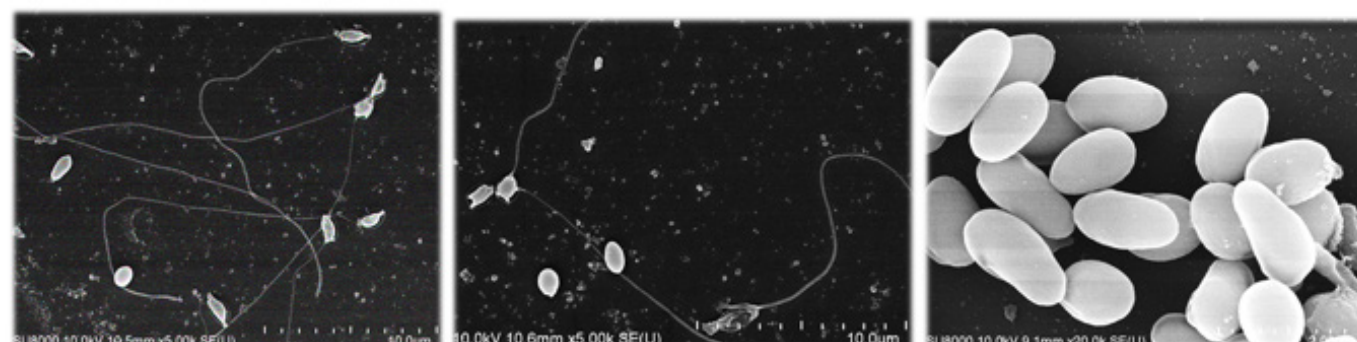
3 Key results from lab to field

Directly inhibits the germination of EHP spores and kills them

Trials run in Thailand (2022 and 2023)



Control (non treated Spores)



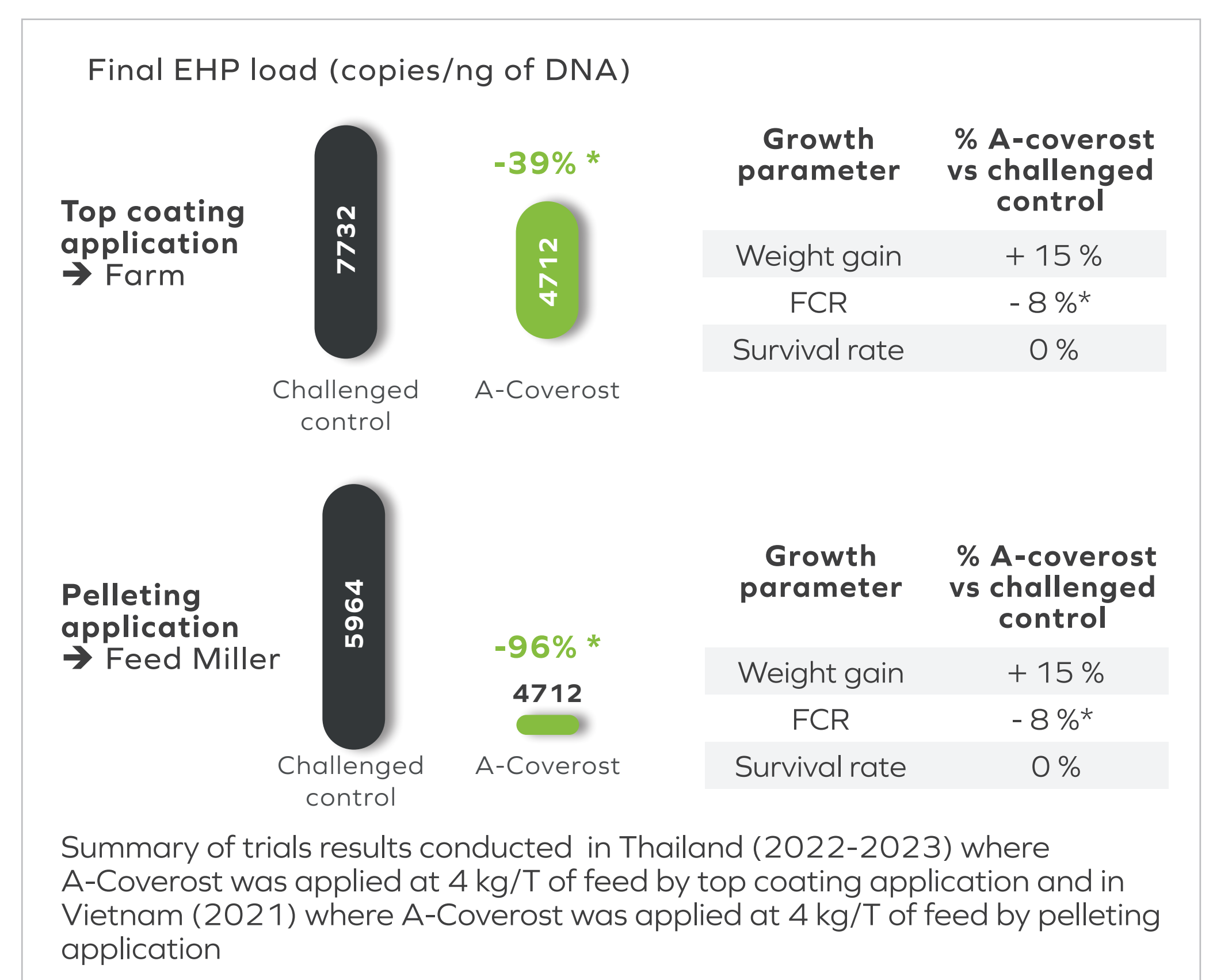
Treated spores with A-Coverost



Scanning Electron Microscopy study of the impact of A-Coverost on the germination and morphology of EHP spores

Controls the EHP load in gut prevents performance degradation

Trials run in Thailand and Vietnam (2021, 2022 and 2023)



4 Conclusion

All the trials confirmed the ubiquitous potential of the product to control EHP infestation in shrimp. A direct interaction between the product and the EHP spores during their extracellular phase is a prerequisite to initiate the inhibition process and to kill the spores. So, associated with biosecurity, prevention remains the key approach.