

Singapore's UVAXX develop novel epitope-based vaccine for SDDV infection in Barramundi

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Singapore's Barramundi Group, under its subsidiary UVAXX, collaborated with A*STAR Infectious Diseases Labs - ID Labs, to develop a novel epitope-based vaccine that can defend against the Scale Drop Disease Virus (SDDV) infection in Asian sea bass, Barramundi. The new epitope-based vaccine, has fewer side effects compared with traditional vaccines. The novel synthetic immuno-specific vaccine target specific antigens in the SDDV Virus and thus eliminates added risk.

The vaccine can be integrated into routine operations at hatcheries, and administered to juvenile fish before they are transferred to the sea farms, where they become more susceptible to an SDDV infection.

Under the leadership of Professor Laurent Renia, A*STAR Senior Fellow (ID Labs), and support from the Singapore Food Agency, National Research Foundation Singapore, and Dr Ken Loh Zhixuan, Senior Scientist (ID Labs), the 12 extensive research has made the first ever commercially available solutions for Scale Drop Disease Virus (SDDV).

Efficacious vaccines remain the most critical tool for enabling a paradigm shift in aquaculture disease management from a reactive to a preventative approach and transforming farm production unit economics. The team aims collaborating with A*Star to develop more impactful vaccine solutions for farmers.

Fish farms in the Johor Strait, where the majority of the businesses are located, have occasionally reported signs of the virus, which affects barramundi and yellowfin seabream. An SDDV outbreak in June 2023 had forced fish farm operator Barramundi Group to temporarily stop farming in the southern waters. UVAXX recalls a loss of \$31.9 million for financial year 2022. Nevertheless, Barramundi Group continued its research and development in Singapore with fish vaccines development through UVAXX, under a selective breeding programme.

The team is now looking to further refine the vaccine formulations and prepare the product for market launch in Singapore and other regional markets that have SDDV outbreaks, such as Indonesia, Thailand and Malaysia. At the same time, the team is conducting commercial-scale field trials with local farm partners, while evaluating the vaccine's safety and efficacy. The team is working towards regulatory approvals to facilitate further mass production.

The vaccine development was one of 12 projects that were awarded a total of \$23 million in grant funding from the Singapore Food Agency (SFA) to develop the agri-food system and support Singapore's goal of producing 30% of its nutritional needs locally by 2030.