

White spot syndrome virus research update #1 from the Aquaculture Genetics Group.

Available for public dissemination.

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DNA sequence data indicate White Spot Syndrome Virus (WSSV) is an exotic species, newly arrived in Australia

- White Spot Syndrome Virus (WSSV) has been considered as the causal agent of recent infections and suspected of originating from importation of overseas prawns. However definitive information, namely DNA sequences, that would resolve these questions so far has not been released by Government agencies. Knowledge of the origin of the infection may help farmers prevent future outbreaks.

Therefore, to secure and release this knowledge for the public good, the Aquaculture Genetics research group from the Sunshine Coast University obtained WSSV DNA sequences from the Logan River prawns, from current retail prawns (in spring rolls etc) and from overseas prawns. Thirty valid WWS DNA sequences have been obtained with hundreds more in the pipeline. All incoming sequences are being submitted to international data bases and will be freely available to scientists nationally and internationally.

What we know so far:

-First report of WSSV DNA sequences in Australia. The sequences confirm categorically the infections were WSSV and our DNA sequences are the very first ones reported from the white spot syndrome virus from Australia or Australian farmed prawns. The international data base (GenBank) accession numbers (with official date stamp from May) are MF287678, MF161441, MF161442, MF161443.

-Sequences indicate an overseas origin. There is no variation among the Australian DNA sequences and they have similarity with overseas WSSV strains. These data are not inconsistent with the hypothesis of a recent outbreak arising from a small number or population of viruses, and also are not inconsistent with the possibility the virus was a recent arrival in Australia. These data tend to refute the hypothesis that the WSSV outbreak in Australia was due to a local, long term endemic strain.

-Process of exclusion to find exact origin. The newly published Australian WSSV sequences are not identical to sequences from some current farm outbreaks of WSSV in Vietnam, and not identical to some retail DNA sequences. More DNA sequences incoming will allow us to exclude countries/farms/retail samples on a case by case basis.

-WSSV intact DNA is still present in retail items. Intact long (>1000bp) WSSV DNA sequences were obtained from cooked and frozen imported and locally manufactured ("made in Australia") dim sims, yum chas, spring rolls, dumplings. The provenance of the prawns in these supermarket items is uncertain. The infectivity of these cooked and frozen retail samples was not tested.