Description of a new pathology affecting the adductor muscle of manila clam (*ruditapes philippinarum*) in arcachon bay (sw france)

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RUDITAPES PHILIPPINARUM was introduced in 1972 in Arcachon bay (France) which currently ranks at the first French place in term of stock and annual production. Few years ago, a new pathology called brown muscle disease (BMD) emerged specifically in clam populations. This disease induces a brown calcification of the adductor muscle and affects differently both muscular tissues. Two indices were created to quantify symptoms (MPI and FDI) and a monitoring was undertaken for two years in four locations. The mean prevalence was under 12% without seasonal variation in three sites against 30% with a winter peak in one site. The latter site was accurately surveyed and revealed that clams at the surface of the sediment were three folds more infected than buried clams. In order to detect a causal agent and to examine the muscular damages, histological sections were realized. Observations revealed an important inflammatory response with invasion of hemocytes and a heavy necrosis of muscular fibers. Alternatively, molecular analyses were achieved to search pathogen agents. In both cases (histological and molecular assays), bacteria, protozoans and fungi were discarded. Finally, small virus-like particles were perceived and are highly suspected as the etiological agent of BMD.