

Purple Hinged Rock Scallop: A Promising New Species for Aquaculture

Main Goals: The purple hinged rock scallop (*Crassadoma gigantea*) has promise for aquaculture, but its tendency to ingest and retain toxic algae must be evaluated. PSI and partners will determine what measures and necessary monitoring will be required to ensure that rock scallops are safe for human consumption.

Background: Among the list of prospective new species for aquaculture, the purple hinged rock scallop is especially promising. Due to the native species expansive range, culture could exist from Baja California to southeastern Alaska. Rock scallops grow rapidly in the first several years, achieving market size in 2-4 years. Live rock scallops have high market value, priced \$5-\$8/lb in California, and a potentially high value in the sushi market. Scallop farming has the potential to provide significant employment opportunities and to produce a high quality shellfish product for both domestic and export markets. However, one serious unresolved issue is the rock scallops' propensity to ingest and retain toxins that can cause Paralytic Shellfish Poisoning (PSP) in humans. While data shows low levels of toxins in the scallops' adductor muscle (marketable product) compared to the gut (Figure 2), more thorough research and monitoring will be required.



Figure 1. Purple hinged rock scallop.

Project Summary: The primary focus of this project is to address whether rock scallops are particularly susceptible to ingestion and retention of toxins produced by dinoflagellates. Our team will assess rock scallop uptake, tissue concentration and detoxification rates of phycotoxins associated with the commonly occurring dinoflagellate, *Alexandrium catenella* under controlled lab and natural, field conditions. Through these experiments we will

determine potential impacts on the developing aquaculture effort for this species. The results of the proposed research will assist public health agencies (specifically from California, Alaska, Oregon, and Washington) regarding biotoxin accumulation and depuration, informing Harvest Site Certification for rock scallop aquaculture. The research directly supports production of rock scallop by facilitating public health certification to allow sales in domestic and international markets. Furthermore, this research will enable public health labs in Washington and Alaska to evaluate the most appropriate biotoxin detection methods for this species.

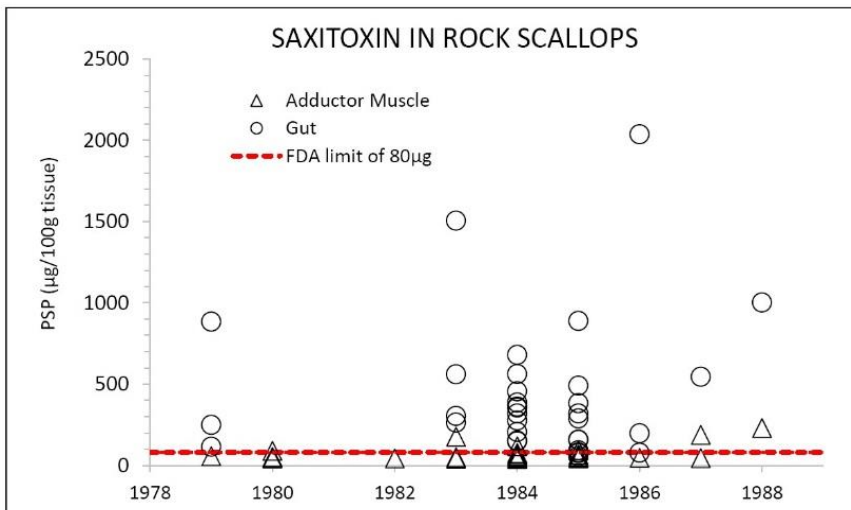


Figure 2. Saxitoxin levels in WA collected rock scallops. The data suggests that PSP toxins accumulate less in the adductor muscle than in the gut. Data source: WDOH

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