

**Preliminary Health Assessment of
Cultured Hard Clams,
Mercenaria mercenaria,
in Florida**

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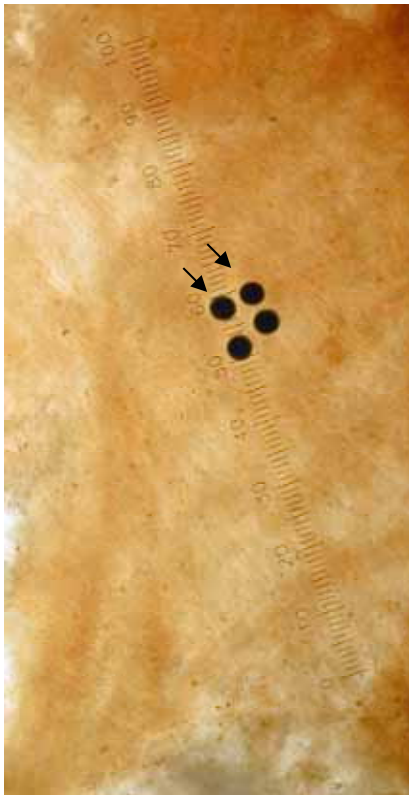
Objectives

- Objective 1: To provide introductory training in shellfish pathology to Florida aquaculture veterinarians and extension specialists.
- Objective 2: Establishment of a health monitoring program for cultured hard clams in Florida

Specimen Processing

- Each animal weighed and measured.
- 30/60 prepared for Dermo (Perkinsosis) culture in Ray's fluid thioglycollate medium
- The other 30 were preserved in 10% buffered formalin with seawater and then processed for histological slides.
 - These slides were examined for any sign of QPX, other pathogens and abnormal tissue

Results of Dermo Culture

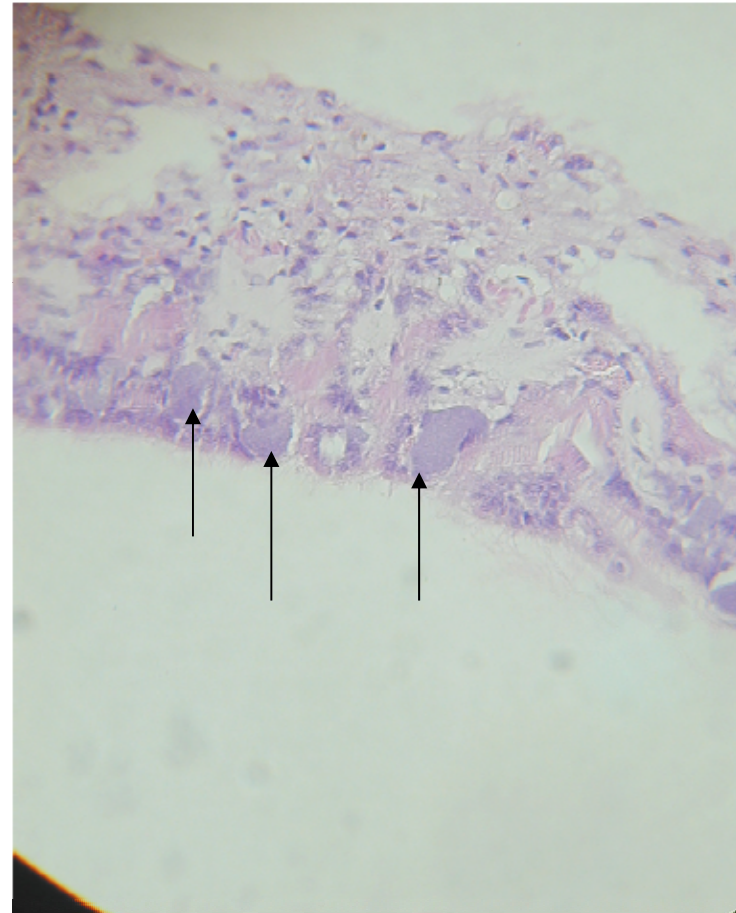


Photomicrograph of hypospores

Site	Season	Total Number of Hypospores	Percentage of Affected Animals
Gulf Jackson	Winter	0	0
	Summer	15	23.3
Indian River	Winter	0	0
	Summer	12	6.7
Southwest Florida	Winter	1	3.3
	Summer	396	66.7

Results of Histopathology

- Rickettsial-like organisms (RLO)
 - Frequently seen in bivalves
 - Usually located in gills
 - Associated with mortality in high density culture

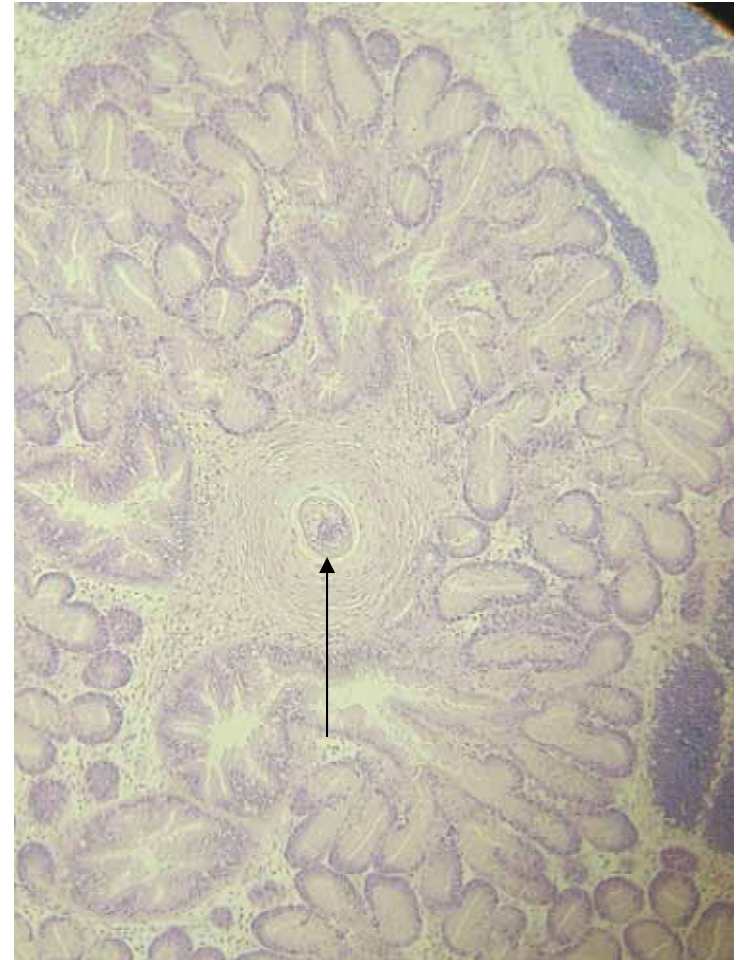


Rickettsial-like Organisms

	Season	Number Observed	Percentage of Animals
Gulf Jackson	Winter	18	60
	Summer	0	0
Indian River	Winter	14	46.7
	Summer	4	13
Southwest Florida	Winter	10	33.3
	Summer	0	0

Results of Histopathology

- Granulomas
 - Result when a source of chronic inflammation is surrounded by fibrotic tissue
 - Occasionally may involve a trematode (flatworm)



Granulomas

	Season	Number Observed	Percentage of Animals
Gulf Jackson	Winter	4	13.3
	Summer	12	40
Indian River	Winter	9	30
	Summer	6	20
Southwest Florida	Winter	12	40
	Summer	16	53.3

Results of Histopathology

Other results:

- Concretions in kidney tissue
- Non-granulomatous inflammation
- *No QPX observed*

Results of Histopathology

Site	Season	RLO	% Animals	Granuloma	% Animals	Metazoans	% Animals	Non-gran. Inflamm.	% Animals	Kidney concretions	% Animals
Gulf Jackson	Winter	18	60	4	13.3	0	0	6	20	1	3.3
	Summer	0	0	12	40	2	6.7	2	6.7	5	16.7
Indian River	Winter	14	46.7	9	30	5	16.7	0	0	3	10
	Summer	4	13	6	20	7	23.3	1	3.3	1	3.3
Southwest Florida	Winter	10	33.3	12	40	8	26.7	20	67.7	0	0
	Summer	0	0	16	53.3	0	0	3	10	4	13.3

Synopsis of Findings: Dermo Culture

- Numbers of Perkinsus hypospores higher in the summer months in clams from all sites
- Southwest Florida had higher numbers of hypospores than other sites

Synopsis of Findings: Histopathology

- RLOs frequently occurred in winter collected clams from all sites. Summer collected Gulf Jackson and SW Florida clams did not.
- Granulomas were common in clams from all sites and seasons.
- Lower incidence of metazoans in Gulf Jackson clams.
- Higher number of winter collected SW Florida clams had non-granulomatous inflammation.
- The incidence of kidney concretions was low but occurred in clams at all sites.
- No QPX was observed in any clams from any site