

Reports

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Memorandum to Oystermen and Inspectors who aided  
in getting samples of oysters for a study of distribution of the fungus  
Dermocystidium marinum in 1954.

Jay D. Andrews  
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October 1954

Enclosed is a partial list of areas from which oysters were tested for the fungus disease, Dermocystidium marinum. The purpose has been to determine the distribution of the fungus in Chesapeake Bay waters. It is known that the fungus tends to disappear in low salinity waters. The past summer has been exceptionally dry causing high salinity waters to extend further up Bay than usual. Therefore, the fungus probably has penetrated about as far up the Bay this year as it ever does.

When cultured each oyster is rated according to the intensity of the infection as heavy, moderate, light, and negative. In general, the heavier the infection, the sooner the oyster will die from the fungus. However, water temperatures must remain above 75° F. for a considerable period before the fungus will kill oysters. It appears that hot dry summers cause the heaviest losses among oysters. We have had both this year.

Age of oysters also affects the incidence of fungus and the death rate. Young oysters, and those moved recently from low salinity areas, typically have fewer infections and a lower death rate than older acclimated oysters. In these tests attempts have been made to get only oysters which have been in the area being examined at least one summer and preferably two or more.

These tests show that the fungus is present in Chesapeake Bay and its tributaries wherever the salinity is moderately high. It is found in Pocomoke Sound and the mouths of several creeks on Bayside of Eastern Shore. With an upper limit near the mouth of the Machodoc in the Potomac, it extends all the way down the Bay increasing more or less down Bay. Morattico is about the upper limit in the Rappahannock River. In the York River the limit is not known, but it probably extends well up towards West Point. Tests have not been made in the James River seed area this year, but in past years the fungus has been scarce above the bridge.

Strangely the fungus is nearly absent on the seaside of the Eastern Shore and Chincoteague Bay despite the fact that oysters from the Bay are sometimes transplanted to these areas. It is possible that the fungus may yet become established in these areas, consequently, oystermen would be wise to avoid moving infected seed to new areas. In general, James River seed is relatively free of infections. While infections tend to disappear in cold weather, it has been shown that some oysters will carry the fungus through the winter. Therefore, seed from an infected area is suspect at all times of the year.

Mortalities from all causes in our tray grown oysters this past summer have been about 50 per cent which is almost twice as high as in previous years. Preliminary reports indicate that oystermen in the lower Bay and tributaries also have had heavy losses, but the activity of the recent hurricane, Hazel, may obscure the extent of these summer and early fall losses.

Mortalities of oysters in trays cease about the first of November each year. Therefore, little more damage from natural causes can be expected this year.

Tests of Live Oysters for Dermocystidium

	Number tested	Per cent infections				Weighted incidence*
		Heavy	Moderate	Light	Negative	
Eastern Shore of Virginia, Maryland and Delaware Seaside and Chincoteague Bay						
1. Indian River, Delaware 2 Sep 1954	25	0.0	0.0	0.0	100.0	0.0
2. Chincoteague Bay 9 Sep 1954	25	0.0	0.0	0.0	100.0	0.0
					Large, old oysters	
3. Tom's Cove, Asea- teague Cove, Va. 2 Sep 1954	25	0.0	0.0	4.0	96.0	0.04
4. Metomkin Bay, Wachapreague, Va. 23 Sep 1954	25	0.0	0.0	0.0	100.0	0.0
5. Hogg Island, Willis Wharf, Va. 2 Sep 1954	25	0.0	0.0	0.0	100.0	0.0
Pocomoke Sound and Bayside of Eastern Shore						
6. Buoy Rock, Pocomoke Sound 2 Sep 1954	20	0.0	5.0	15.0	80.0	0.24
7. Middleground, Pocomoke Sound 2 Sep 1954	17	0.0	11.8	11.8	76.4	0.47
8. Messongo Creek at North Point 2 Sep 1954	25	4.0	0.0	76.0	20.0	1.16
9. Pungoteague Creek 2 Sep 1954	25	4.0	8.0	68.0	20.0	1.12
10. Cherrystone Point (Smith) 2 Sep 1954	25	0.0	24.0	32.0	44.0	1.04

Pocomoke Sound and Bayside of Eastern Shore (continued)

11. Off Cherrystone Creek, "Inside Bar" (Acuff) 25 Sep 1954	20	0.0	20.0	15.0	65.0	0.75
12. Off Cherrystone Creek, "Outside Bar" (Acuff) 25 Sep 1954	20	0.0	0.0	0.0	100.0	0.0
		We do not understand absence of fungus in this area.				

Potomac and Great Wicomico area

13. Billy's Point above Ragged Point, Machodoc River, Va. 9 Sep 1954	25	0.0	0.0	0.0	100.0	0.0
14. Ragged Point below Machodoc 9 Sep 1954	25	0.0	0.0	16.0	84.0	0.16
15. Yeocomico River below Barn Point 9 Sep 1954	25	0.0	0.0	84.0	16.0	0.84
16. Big Bar, Coan River 9 Sep 1954	25	0.0	0.0	12.0	88.0	0.12
17. Slaughters Ground, mouth of Great Wicomico 7 Oct 1954	20	10.0	20.0	55.0	15.0	1.65
18. Fleet's Point, Great Wicomico 7 Oct 1954	20	0.0	5.0	40.0	55.0	0.55

Rappahannock and York Rivers

19. Dart's Ground, Lan- caster Creek, upper Rappahannock River 21 Aug 1954	16	0.0	6.3	0.0	93.7	0.19
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Rappahannock and York Rivers (continued)

20. Hoghouse, below Urbanna, Va. 7 Oct 1954	25	4.0	12.0	40.0	44.0	1.20
A sample of oysters from this bar has been tested at the beginning of each of the past 18 months.						
21. Tillages Ground, York River (above Gloucester Point) 3 Sep 1954	25	16.0	24.0	48.0	12.0	2.00
22. Ferry Pier piling oysters, Gloucester Point, Va. 12 Oct 1954	25	4.0	28.0	52.0	16.0	1.56

Hampton Roads and lower Chesapeake Bay

23. Hazelwood Ground near Nansemond Ridge 21 Sep 1954	25	11.8	29.4	47.1	11.8	1.94
24. Nansemond Ridge 11 Aug 1954	25	0.0	32.0	24.0	44.0	1.20
25. Hampton Bar 13 Oct 1954	25	4.0	32.0	52.0	12.0	1.68
26. Ocean View, Chesapeake Bay 22 Aug	25	4.0	24.0	32.0	40.0	1.24
22 Aug	25	0.0	12.0	56.0	32.0	0.92

Maryland

27. Pier at Chesapeake Biological Laboratory, Solomons Island 11 Oct 1954	25	0.0	40.0	44.0	16.0	1.64
28. Holland Straits	25	0.0	0.0	4.0	96.0	0.04

\* This is an arbitrary value which combines percentage of infection and intensity of infection. Each heavy infection is given a value of 5; each moderate 3; each light 1; and each negative 0; so that a weighted incidence of 1 means that on the average the group of oysters had light infections. A weighted incidence of 3 implies that infections in the group averaged at a moderate level.