

Cork Harbour P.S.P Incident 1985 (Doyle + Dunne)

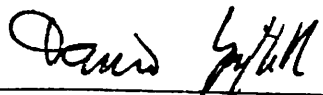
1. Miss Doyle

Please prepare a summary report of our Cork Harbour findings on G. lamarensis and mail it to the Southern Health Board (as instructed by Dr. Gibson) with a copy to Dr. Gibson and our own administration. You will recollect that this was to have been discussed at an office meeting with administration, which we requested, but there appeared to be some difficulty in meeting our proposal for such a meeting.

2. Dr. Gibson

To see please. The clarification given by the Assistant Secretary is very welcome; project AQ9 was drawn up to reflect the same considerations. I agree that the respective responsibilities of Dept. Health and Dept. Fisheries and Forestry also need to be clarified, but I regard those responsibilities as concerning administrative action and not research.

As last year, our findings should be rapidly transmitted to relevant Health Boards for appropriate action by them. The longer-term considerations are, I understand, already the subject of discussion between the two Departments but unfortunately I have not been involved in the latest round of these negotiations so I do not know how they affect the foregoing.



David de G. Griffith  
5th July 1985

Gyaulax tamarensis

Gyaulax tamarensis is one of the principle organisms involved in Paralytic Shellfish Poisoning in Europe and North America. It is a complex alga as can be seen by accompanying descriptions. P.S.P. has not been described in Irish waters with the exception of one incidence in Belfast Lough and also in Kerry in the late 1800s, although this cannot be verified. G. tamarensis has only been recorded in Irish waters as individual organisms and no bloom has been described up to this.

Details of samples received at FRC

Two samples were collected in the Cork Harbour region by Mr. D. Minchin and are as follows:-

Sample No. 77 - Collected at Brosnans Pond/Cork Harbour on 10.6.85. Received at FRC 14.6.85 and settled before examination on 17.6.85. D. Minchin had suggested that there was a bloom of an Oblea species. On examination of the sample this appeared to be incorrect. The species bore a strong resemblance to G. tamarensis or Helgolandinium sub globosum. I sent a sample to Dr. Cilian Roden for him to confirm. Dr. Roden contacted me on 25.6.85 and said that in his opinion it was most likely G. tamarensis although proper identification is difficult. Sample No. 78 from Rossmore/North Channel Cork Harbour collected 3.6.85 received at FRC 14.6.85. Subsequent samples from Cork Harbour confirmed that this was indeed G. tamarensis.

Samples of oysters (C. gigas) were already in FRC. They had been collected on 19.6.85 from Rossmore/North Channel Co. Cork and the Owenbuy area of Cork Harbour 17.6.85. Acid extractions of both samples were made and a bioassay carried out on 26.6.85. The results of this bioassay were negative for P.S.P. but however, 24 hours must elapse in order to ascertain any trace levels. The test animal from owenbuy died overnight but this was probably due to heavy metal contamination which is being confirmed at present.

Accumulation of P.S.P. toxin in shellfish may take some time, so the negative results of today from shellfish collected two weeks ago may not indicate whether or not toxicity will occur. I think it is extremely important that further shellfish from the area are tested immediately and water samples from Cork Harbour also in order to close down these shellfish areas should toxicity be developing.

*[Handwritten signature]*

to Larson method used

Summary	Results	PSP	Brownays	bank Hb.	
4/7		9/7	15/7	15/7	22/7
Estuary	**	Estuary	Estuary	Bank *	Negative
250-452		291-442	219-270	210-251	"
in mu/100g	351	345	242	233	"
mean toxicity	10.2	69.0	48.9	46.6	"

Oysters	219	215 - 248
mean	219 <sup>+</sup>	223
	36.5	44.6

\*\* May have been technique fault or variation w. high. One mouse died  
 \* lots so called bank mussels had in fact been put into estuary  
 and then returned to banks pens common to High-jobs 15/7 17.00hr  
 + 1 test mouse only used.

Small other tests 3 mice used and results expressed as min/max  
 plus mean toxicity mu/100g of mussel tissue

Dr Flynn Dept of Microbiology U.C. also examined Oysters  
 and mussels from Estuary and reported results as follows:-  
 40/ng/100g toxin in mussels  
 35/ng/100g in oysters

	pls	bank	Hb	1984		
	Sender	location	date	Species	→	
1488	N. Walsh	Nota Oyster farm (shore)	3/7	Date recd	G. tamarensis G. spingewus	61, 134 cells l <sup>-1</sup> 56, 375 " "
1469	"	opp Atlantic Shell farm	"	"	"	6.5 x 10 <sup>6</sup> impure
1484	R. Fitzgerald	North Channel Kilmory 7	7/7		50.57 x 10 <sup>6</sup>	tamarensis spingewus
1486	N. Walsh	Back Channel COBIT	6/7		same as	1469?
1560	F. Walsh	Back Channel Cont Hb	14/7		Spingewus	225,000 cell l <sup>-1</sup>
1553	F. Walsh	Back Channel Cont Hb	20/7		G. Spingewus G. tamarensis	452, 236 cells l <sup>-1</sup> 538, 892 " "
1653	N. Walsh	Nota Oyster farm	23/7		G. tamarensis Chaetoceros	63, 638 cells l <sup>-1</sup> bleom
1689	N. Walsh	Nota Oyster farm	28/7		Chaetoceros P. innocuus	bleom

bloom of Gonyaulax tamarensis in Cork Harbour and subsequent development of Paralytic Shellfish Toxicity.

During the phytoplankton monitoring programme of mariculture operations in Irish coastal waters, samples collected in Cork Harbour on 10.6.85 contained high numbers of Gonyaulax tamarensis (written information attached) and P.S.P. analysis was initiated.

P.S.P. assay

Following the initial tests on shellfish from Cork Harbour subsequent samples were collected and the results of these tests are detailed below.

1. Oysters from Rossmore/North Channel Cork Harbour (26.6.85)  
Test animals showed toxic reactions indicating trace levels of P.S.T.
2. Mussels from Rossmore/North Channel Cork Harbour (29.6.85)  
Test animals died of P.S.P.  
Toxin level - 245 m.u.
3. Oysters from Drakes Pool/Cork Harbour (Owenby) 29.6.85  
Toxin level - trace response
4. Mussel samples from Kinsale and Youghal gave negative results.



Tom Dunne  
3rd July 1985