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International Council for the
Exploration of the Sea

C. M. 1978/K: 17
Shellfish Committee
Ref. Mariculture Com.

LOBSTER IMPORT: TWO OUTBREAKS OF GAFFKEMIA IN NORWAY

by

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ABSTRACT

In autumn 1976 two small consignments of Homarus americanus were imported from Canada to two different lobster ponds in Western Norway. The import was followed by outbreaks of gaffkemia in Homarus vulgaris in the same places. The affected areas have been disinfected and are out of use until October this year.

RESUME

En automne 1976, deux petits lots de Homarus americanus ont été importés du Canada et placés dans deux sites d'élevage de homard, à l'Ouest de la Norvège.

Cette importation a été suivie d'épizooties de Gaffkémie chez Homarus vulgaris dans ces mêmes sites.

Les zones atteintes ont été désinfectées et maintenues hors service jusqu'en octobre de cette année.

INTRODUCTION

In autumn 1976 two consignments of Homarus americanus were imported to Norway from the east coast of Canada, one of about 250 kg to Stavanger and the other of about 100 kg to the Bergen area. Both consignments seem to have included carriers of Aerococcus viridans, the agent of the lobster disease gaffkemia and in both places the disease broke out.

THE DISEASE OUTBREAKS

The Canadian lobsters imported to Stavanger were held in tanks which were supplied with water from the harbour basin. Mortality started about two weeks after arrival and was blamed on polluted water. The remaining lobsters were therefore brought to the importers sea water pound at Kvitsøy, an island situated about 25 km north east off Stavanger. This island is the centre of lobster commerce in Rogaland (Stavanger area).

Mortality continued in the Homarus americanus and about 60 % of it died within the first two months. According to the importer the pound was nearly emptied in late December and he had no further mortality during winter, spring and summer 1977. But in the last week of October gaffkemia re-appeared in the pound, this time H. vulgaris were the victims.

The Stavanger and Kvitsøy outbreaks of gaffkemia have been fully described by Staveland and Kjos-Hansen (1978).

The Homarus americanus imported to the Bergen area, were released in the importers sea water pound together with local Homarus vulgaris and the same species imported from Scotland. In February 1977 all the H. vulgaris in this pound were sold.

The Canadian lobsters stayed in the pound through summer 1977. In spring some local lobsters were taken into the same pound, but these were sold again during summer. There was no mortality during this time.

In late September another consignment of H. vulgaris from Scotland was taken into the pound. This import coincided with a rather severe algal bloom and in the middle of October mortality started. Gaffkemia was diagnosed.

Gaffkemia had not previously occurred in Norway (Egidius 1972). That Aerococcus viridans was introduced with the H. americanus in Rogaland in September 1976 seems beyond doubt (Haastein et al. 1977). It seems likely to assume that the stress of both crowding and poor water quality in the tanks in Stavanger added to the transport stress, was what initiated the disease outbreak.

The lobsters imported to Hordaland were taken directly into a large pound and here the transport stress was easily overcome. But there must have been carriers of Aerococcus viridans also amongst these lobsters, and when imported H. vulgaris on top of the transport stress were stressed by a low oxygen level in the water caused by the extraordinary algal bloom, the road was open for the disease outbreak.

MEASURES TAKEN

When the mortality in the Canadian lobsters started in Stavanger, samples were sent to the City Veterinary Laboratory for examination. From there they were sent to the National Veterinary Institute (NVI) in Oslo where gaffkemia was diagnosed.

Fishery authorities were notified about the disease outbreak through the NVI annual report only, this was received in February 1977. The Stavanger importer was contacted immediately, but assured that no H. americanus were left and that his pound was emptied.

Up to then Norway had no regulations according to which import of non-indigenous species could be prohibited. Work was started to catch up on this and from June 1977 lobsters could only be imported under licence at the discretion of the Director of Fisheries.

The autumn 1977 outbreaks of gaffkemia in Stavanger and at Kvitsøy were first reported directly to the Institute of Marine Research around Christmas when 300 out of 800 kg of lobsters died when being taken up for export. Steps were taken immediately to prevent sale of live lobster from the infected areas and to empty the pounds and tanks entirely.

The Hordaland outbreak was also diagnosed by the City Veterinary Laboratory in Stavanger and came to our knowledge by chance in spring this year.

The gaffkemia outbreaks were discussed with colleagues at the meeting of the W.G. on diseases in marine organisms in Nantes in February. In Ireland a similar import of Homarus americanus followed by an outbreak of gaffkemia affected a tidal pound and a tank establishment about 12 years ago. The affected sites were entirely disinfected with bleaching powder and the disease never reappeared (Duggan, pers. com.).

After discussions with the lobster importers and their organizations it was decided to try to disinfect the affected premises both in Rogaland and Hordaland.

To prevent further spread of the disease the Director of Fisheries in April 1978 passed regulations to prohibit lobster imports without licence, to report disease outbreaks to the fishery authorities, to destruct dead animals, to prohibit movements of live lobsters from disease affected establishments and to empty and disinfect the same. This later seemed to be necessary as the advice to disinfect the premises apparently was not followed in 1977.

In agreement with the parties concerned the spring lobster fishery (month of May) also was kept closed in Rogaland and Hordaland.

In May the Kvitsøy pounds and the two tank establishments in Stavanger were disinfected and they will stay out of use until October.

When going over the one affected Hordaland pound 16 live H. vulgaris were found. All cultures from the hemolymph of these animals were negative in regard to Aerococcus viridans. This pound is also used for fish farming and therefore could not be disinfected before in August.

During the yearly lobster tagging in Hordaland, cultures from the hemolymph were made from 14 animals which all were negative in regard to Aerococcus viridans.

Whether or not the disinfection of the lobster pounds and tanks will prove effective only time will show.

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