Surveillance for PSP and DSP in Japan

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In Japan shellfishes such as scallop, oyster, clam, along with fishes, are regarded as an important animal protein resource. In 1975, paralytic shellfish poison (PSP) infestation to shellfish, and the occurrence of Protogonyaulax catenella red tide were first observed in Japan. Subsequently the toxification of shellfishes with PSP was also found in other places.

In 1976, another toxin, designated diarrhetic shellfish poison (DSP) later, was detected in the scallop and mussel inhabiting of the Sanriku coast of Tohoku District of Japan. Unexpectedly many patients due to ingestion of DSP were found.

To cope with this situation, the Fisheries Agency has cooperated with local governments in a program to secure the safety of shellfish. A surveillance system for PSP and DSP was introduced in 1987 under a financial support from the Fisheries Agency (Table 1). In main shellfish-producing areas, monitoring stations are set where the occurrence of the responsible plankton species Protogonyaulax spp.(PSP) and Dinophysis spp.(DSP) are watched, and commercially important species of shellfish are periodically collected and assayed for PSP, DSP, and tetrodotoxin(TTX) by the official methods in authorized laboratories.

When the PSP score of scallop or other shellfish exceeds 4MU/g edible part and/or the DSP score does 0.05MU/g edible part, the area is closed to harvesting shellfish.

The quarantine is kept in effect in the area untill the both toxicity scores of the shellfishes fall below these specified limits.

Since the introduction of the above-mentioned system, the general patterns of PSP and DSP toxification of shellfishes in Japan were made clear, and the management scheme for commercially important shellfishes has been effectively worked out, as demonstrated by almost no outbreaks of paralytic and diarrhetic shellfish poisoning.

Table 1. Financial supports to the local governments
for PSP and DSP surveillance in 1987.

(Units:thousand yen)

Prefecture	Amount	Prefecture	Amount
Hokkaido	3,157	Hyogo	4,289
Aomori	2,715	Wakayama	2,235
Iwate	3,075	Okayama	2,361
Miyagi	4,607	Hiroshima	2,206
Akita	2,159	Yamaguchi	2,500
Yamagata	475	Tokushima	2,450
Fukushima	486	Kagawa	2,700
Ibaraki	1,994	Ehime	3,400
Chiba	503	Kochi	2,012
Niigata	652	Fukuoka	7,058
Isikawa	405	Saga	3,820
Sizuoka	807	Nagasaki	3,150
Aichi	2,015	Kumamoto	3,381
Mie	2,000	Ôita	1,709
Shiga	1,000	Miyazaki	729
Kyoto	550	Kagoshima	3,477
Osaka	1,540	Total	75,680

Fig 1. Map showing areas where PSP, DSP and/or TTX toxicity
scores of shellfish exceeded the quarantine limits in 1987.