

POST-HARVEST HANDLING OF MUSSELS AND OYSTERS

Anselma S. Legaspi  
Bureau of Fisheries and Aquatic Resources

## POST-HARVEST HANDLING OF MUSSELS AND OYSTERS

Anselma S. Legaspi

Shellfish production particularly of mussels and oysters, has substantially increased due to the advent of mariculture. With increased production, problems of handling, processing, marketing and distribution have multiplied.

Post-harvest handling of mussels and oysters is beset with problems more than that of fish, not only because of its higher degree of perishability, but also because of adverse effects of its habitat, not to mention its bulk, which makes it more difficult to handle.

The problem is threefold: First, shellfish spoils more readily than fish because these contain far greater amounts of free amino acids. Second, oysters and mussels harvested from polluted water are heavily contaminated with bacteria (*E. coli* and *A. aerogenes*) which could cause food poisoning. Third, oysters and mussels when unshelled are bulky, hence troublesome and expensive to transport.

Researches and technological advancements have somehow minimized if not totally solved these problems.

1. Perishable nature of mussels and oysters

On the problem of high degree of perishability, several studies have been undertaken both here and abroad to keep mussels and oysters alive for a longer period of time or to improve its shelf life.

Guevara *et al.*<sup>1/</sup> were able to prolong shelflife of mussels for four days by lowering storage temperature to 12°-14°C with the use of ice, but making sure that the byssus are not removed and that the mussels do not get in contact with the melted ice.

Boyd and Wilson<sup>2</sup> were also able to extend the shelf life of mussels for 4 days by storing them in ice in specially designed cardboard boxes and left at ambient temperature (15 to 18°C). However, they found out that even if the mussels stayed alive, after 2 days there is a degradation of quality.

---

<sup>1/</sup>G. Guevara, F. Abella, S. Canonigo and H. Bello. "Preliminary Study on the Handling, Transport and Depreciation of Green Bay Mussels." BFAR, Quezon City. (PTO).

<sup>2/</sup>N.S. Boyd and N.D.C. Wilson. "Handling and Processing of Raft-Formed Mussels," Proceedings of 18th IPFC Session, (Manila, Philippines; March 1978).

To prevent degradation of quality, they recommended that mussels should be stored at temperature between 5° and 7°C. Mussels stored at this temperature become unacceptable only after 5 days.

## 2. Contamination from Habitat

Gibson, in 1957<sup>3/</sup>, recommended a three-phase purification method whereby the mussels are stored for 24 hours in chlorinated seawater (3 ppm) which is neutralized with sodium thiosulfate. This process is done twice. The shellfish function normally in the clean water, with the result that they filter out of their system any waste product likely to contain harmful matter. At the end of the second bath, the shellfish are bathed with chlorinated but not neutralized seawater. This causes them to close their shells and cease to function so that the shells themselves become purified, thus both the inside and the outside are practically purified.

Guevara et al.<sup>4/</sup> recommend 24-hr storage of mussels in 3% iodized salt solution and storage in clean seawater.

## 3. Marketing and distribution problem

Marketing and distribution problems are brought about by the bulky nature of shellfish, particularly if they are to be marketed with shell on.

Modern processing technology makes it possible to process fish and shellfish in such a manner by which the above-mentioned problems are minimized, if not completely solved.

Mussels and oysters may be shelled and individually quick frozen or quick frozen in bulk, making transport and distribution less troublesome and less expensive.

Other fish processing methods, like pickling, drying, smoking, canning, bottling or converting shellfish into powder, have also partially solved the problem of marketing and distribution.

Acceptability was a marketing-related problem several years ago. This is no longer a problem though especially after the Bureau of Fisheries and Aquatic Resources sponsored a mussel cooking contest during its observance of Fish Conservation Week in 1977, during which more than forty (40) mussel recipes were entered. Twelve recipes were selected as winning entries.<sup>5/</sup>

---

<sup>3/</sup>F.A. Gibson, Fisheries Division.

<sup>4/</sup>Loc. cit.

<sup>5/</sup>Bureau of Fisheries and Aquatic Resources. "Mussel Recipes, Entries to the Tahong Cooking Contest Det. 1977".

These problems, together with other problems which I failed to mention here but do exist in the industry, could serve as "ticklers" for handling, processing and marketing technology.