

## Outline of the third international symposium on Manila (asari) clam

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The Manila clam (*Ruditapes philippinarum*, commonly known as asari in Japanese) is an important bivalve species for fisheries and aquaculture in many parts of the world. Asari is indigenous to East Asian countries, such as China, Korea and Japan, and it was accidentally introduced to Washington State, the United States in Pacific oyster (*Crassostrea gigas*) spat shipments from Japan in 1900. It quickly became naturalized in the west coast of North America and is now found and cultured from northern California to southern British Columbia, Canada. In 1972, asari was introduced to France from Oregon State as a substitute for the native *Ruditapes decussatus*, whose abundance had declined in Europe due to overexploitation. Asari is now produced not only in its native countries but in the United States, Canada, France, Spain, Italy, England, Ireland, Portugal, Norway, Germany, Belgium, Tunisia, Morocco and Israel (FAO, [http://www.fao.org/fishery/culturedspecies/Ruditapes\\_philippinarum/en](http://www.fao.org/fishery/culturedspecies/Ruditapes_philippinarum/en)).

Japan used to produce the largest amount of asari in the world; however, the production peaked in the mid 1980's and has continuously declined for almost thirty years. The national fishery production (inclusive of bottom aquaculture) of asari in Japan was 12,700 metric tons 2013, which was less than 10% of the peak value. Asari production in China, on the other hand, has increased tremendously for the last couple of decades, and it is reported to be over 3 million metric tons per year in recent years. In Korea, asari production is relatively stable fluctuating between 20,000 to 40,000 metric tons. Europe, especially Italy, has a high production of asari, exceeding Korea and Japan. France is facing a decline in asari production in recent years. Relatively constant production of asari is seen in Canada and

the United States.

Government agencies and research institutions in Japan have proposed and taken various countermeasures against the declining asari fishery production, but have had limited success. The first international symposium on Manila (asari) clam was held in Yokohama, Japan in 2008. The scope of the symposium was stock enhancement and management of asari, and information about asari fishery and aquaculture was exchanged amongst international participants. Japanese participants were particularly interested in aquaculture and inexpensive seed production technologies from other countries since asari production in Japan mostly relied on the wild catch and bottom culture with transplanted wild spats. The introduction of pathogens and invasive species along with shipments of spats from foreign countries was also an issue at that time. The second symposium was held in Busan, Korea in 2012. Regional and global partnerships for asari studies was the symposium scope.

The third international symposium on Manila (asari) clam was held at Ust Plaza in Tsu, Mie, Japan on June 1 and 2, 2015, co-organized by the Fisheries Research Agency, Mie University and the Mie prefectural government. The aim of the symposium was to compare the status of asari fishery and aquaculture in different countries in an attempt to identify factors affecting production levels and discuss future directions of asari research to work out countermeasures for the restoration and maintenance of fishery populations.

There were 115 participants from 11 countries. The keynote speakers were invited from Canada, China, France, Italy, Korea, Portugal and Japan, and there were 47 poster presentations. Various aspects of asari biology, ecology, fisheries, aquaculture and

socio-economics were introduced and discussed. Disease, overexploitation, water oligotrophication, environmental water hypoxia, siltation, as well as social conflicts were reported as problems regarding asari fishery production. Fishery management, environmental management, seed quality control and promotion of aquaculture production were some of the key points expressed during the discussions.

The symposium was followed by a workshop at the National Research Institute of Aquaculture, Fisheries Research Agency in Minamiise, Mie on June 3. Statuses of asari fishery and aquaculture were reported from Canada, China, France, Italy, Japan, Korea, Portugal and Turkey to search for topics of possible future collaborative research projects.

These proceedings are a compilation of short papers based on the keynote talks, abstracts for poster presentations and country reports given at the workshop.

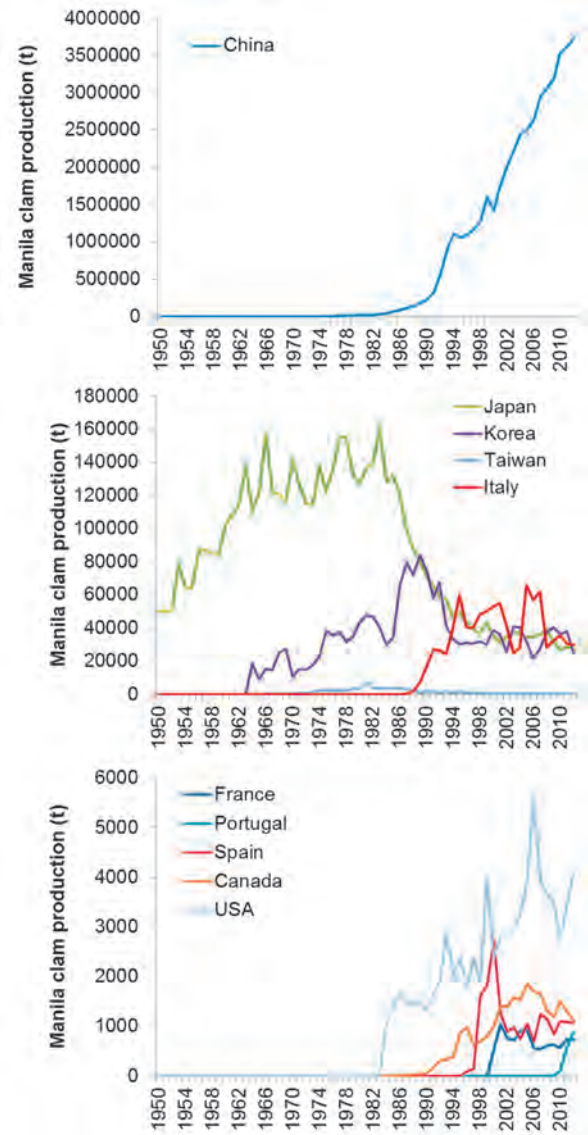


Fig. 1. Chronological transition of the annual Manila clam productions in major producing countries.