Temporal and spatial variations in photosynthetic activity and the growth of *Anadara broughtonii* in Jinju Bay on the south coastal in Korea

J.B. KIM[1*], W-C. LEE[1], H.C. KIM[1], S. HONG[1]

[1]Marine Environment Research Division, NIFS, Busan 46083, Republic of Korea([*]correspondence: jbkim347@korea.kr)

Environmental characteristics

In the early 2000s, most of the shellfish produxed in jinju Bay, on the south coast of the Korean peninsula, were *Anadara broughtonii*, but its production has decreased sharply in recent years. This study investigated the growth and development of *A. broughtonii* in the marine environment of Jinju Bay.

Table 1: Mean values of suspended particulate matter, particulate organic matter, POC/Chl. *a* in water in the Jinju Bay

	Inner	Middle	Outer	Inner (2014)	
	<200μm	<200μm	<200μm	<20μm	<200μm
SPM	12.6±7.3	11.8±6.2	10.7±3.6	10.4±3.9	12.0±5.2
POM	2.9±1.5	2.6±1.6	2.2±1.1	2.2±1.2	2.7±1.3
POC/Chl. *a*	534	526	519	3888	725

The ratio of particulate organic carbon to chlorophyll *a*, most of the particulate organic matter consisted of organic detritus particles. Assimilation number as indicator of phytoplankton activity, particles of <20μm accounted for 65% of the assimilation number.

Stable isotope ratio

The results of the SIAR mixing model revealed that CPOM was the primary food sources for species, comprising 88-89% of the total food source for *A. broughtonii*.

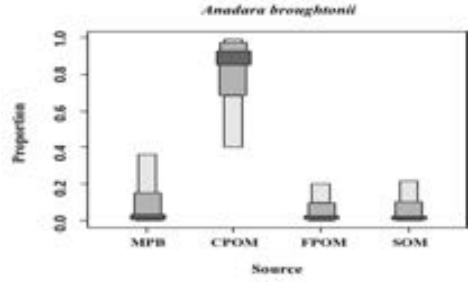

Figure 1: Map of relative contributions of potential food sources to the diet of in *Anadara broughtonii*.

The average monthly survial rate of *A. broughtonii* before harvest was 71.1%, but the survival rate at final harvest was 8.3% due to the rapidly changing marine environment at harvest time.