

Differentiation Comparison among Three Populations of *Saxidomus purpuratus* in the Korean Waters

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Introduction

The purplish Washington clam, *Saxidomus purpuratus* is widely distributed along the Korean coast, inhabits from intertidal to dept 30 m. This species is one of the important commercial bivalves in Korea, but fisheries by diving vessel of this species have been concentrated in the South Sea, Korea. Generally, Shell size, shell color and flavor of food, which was material of *S. purpuratus* in South Sea, West Sea and East Sea of the Korean waters were different among distribution area. These differences of *S. purpuratus* is thought to be due to the characteristics of marine environment of their habitats. So in order to clarify the differentiation among populations, we should be examined morphological, ecological and genetic analysis.

In the present study, the morphological differentiation among populations were preferentially analyzed.

Materials and Methods

For morphological analysis, Three sites in the Korean waters were South Sea, West Sea and East Sea. The site in South sea is located at Jinhae Bay, the study site in West Sea is located on the coast of Kogunsankundo and the survey site in East Sea is at mouth of Yongil Bay. Three populations were sampled about 200 shell of catches by diving vessel once each population during February for May in 2003 . All shells sampled were measured in shell length (SL), shell height (SH), shell width (SW) and total weight (TW). These data were used to determine the relative growth equations by the Huxely method (1932), and for the morphological analysis, which was analyzed using the analysis of variance (Sokal and Rohlf, 1981).

Results and Discussion

Morphological differences were studied using the analysis of variance between various partial length and shell length of three populations of *S. purpuratus* in the Korean waters. The Relative growth equations, that is, SH-SL, SW-SL, TW-SL of *S. purpuratus* by sex were estimated. The analysis of variance of four morphological characters proved that each population has no sexual differences ($p>0.05$). But the three populations are significantly different in morphological characters ($P<0.01$). The reason for the differences between three populations is thought to be due to exploitation period of fishing ground. The fishing ground in South Sea was exploited continuous for a long time, exploitation rate of fishery is probably too high. But there are low of exploitation rate in East Sea and West Sea, because of developing fishing ground in East Sea irregularly, and that in West Sea recently.

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