

アサリの資源回復に向けた発電所等の燃焼灰由来新規開発基質の解析

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Analysis of newly developed substrates from combustion ash by the power plant for clam resource recovery (¹*Faculty of Science and Technology, Department of Pure and Applied Chemistry, Tokyo University of Science (TUS)*, ²*Research Institute for Science and Technology, TUS*, ³*Japan Coal Frontier Organization*) ○Ayumi Saito,^{1,2} Chiaki Terashima,^{1,2} Norihiro Suzuki,² Maki Koguchi,³ Tomonao Saito³

As a method for creating nursery grounds to recover clam resources, bedding substrates such as crushed stone or pumice stone on tidal flats have been adopted and have been effective. Therefore, as a method of utilizing combustion ash (coal ash and biomass ash) from power plants, the development of substrates for clams using this as the main raw material is being promoted. In this study, instrumental analysis evaluated the newly developed substrate in terms of structure and physical properties, and their potential as substitutes for conventional substrates was examined. the newly developed substrate showed similarities to the conventional substrate in terms of surface roughness (Table 1) and constituent elements, suggesting that it can be used as an alternative material.

In fact, when we investigated the growth function of clams by suspending conventional and newly developed substrates from rafts, we confirmed that the degree of shell length growth of clams in the newly developed substrate was almost the same as that in the conventional substrate.

Keywords: *Thermal power plants; Combustion ash; Instrumental analysis*

アサリの資源回復に向けた成育場の造成技術として、干潟に砕石や軽石などの基質の敷設が採用され、効果を上げている。そのため、発電所由来の燃焼灰（石炭灰及びバイオマス灰）の利活用法として、これを主原料としたアサリ用の基質開発が進められている。本研究では、新規開発基質を機器分析により構造および物性面で評価し、従来基質の代替となり得るか検討を行った。新規開発基質に従来基質と表面の粗さ（Table 1）や構成元素において類似点が見られたことから、代替材料となり得ることが示唆された。

実際に、筏に従来基質と新規開発基質を垂下してアサリの育成機能を調査すると、新規開発基質ではアサリの殻長成長度が従来基質と同程度であることを確認した。

Table 1 The arithmetic average roughness (Ra) of the substrates / μm				
Newly developed substrates		Conventional substrates		
Coal Ash	Biomass Ash	Crushed stone	Pumice stone	Anthracite
25	27	24	22	8