Restoration of Coastal Environments Using Steelmaking Slag and Dredged Soil

Akio Hayashi[1], *Katsunori Takahashi*[1], *Yasuhito Miyata*[1], *Katsuya Shimada*[2] and *Akiko Matsuo*[2]
[1]JFE steel Corporation, Japan
[2]Idea Corporation, Japan

Supply of iron ions is considered to be effective for the growth of kelp (a kind of seaweed). In the present research, a demonstration experiment in which seaweed beds/shoals were formed using a mixture of steelmaking slag and dredged soil was carried out in a marine area of Kawasaki City, Japan. The average strength of the mound for seaweed beds, which was made of a mixture of dredged soil and steelmaking slag, was 109.7kN/m^2. The shape of the mound was stable during the experiment period. The iron content of the water above the mound made of the mixture was around 5ppm higher than that above mounds made of natural stones. The average dry weights of the soft seaweed (*Undariapinnatifida*) and brown seaweed (*Sargassumhorneri*) taken from mounds of the mixture including steelmaking slag were 1.1 times and 2.1 times more than that at mounds of natural stones, respectively. These results indicate that iron ions which dissolved from the steelmaking slag have a positive effect on the growth of brown seaweed.

Contact Information: Akio Hayashi, Steel Research Laboratory, JFE steel Corporation, 1 Kawassaki-cho, Chuo-ku,Chiba, Japan, Phone: 81-43-262-2086, Fax:81-43-262-2061, Email: aki-hayashi@jfe-steel.co.jp