

## Effects of application of composted aquatic macrophytes from Lake Biwa on chemical properties in soil

\*Takashi Osono<sup>1</sup>, Satoru Hobara<sup>2</sup>

1. Doshisha University, 2. Rakuno Gakuen University

Aquatic macrophytes expand their coverage rapidly in the southern part of Lake Biwa since 1994. To control the expansion, Shiga Prefectural government harvests them and exploits composted ones as manures. However, a limited knowledge is available regarding the effect of composted aquatic macrophytes on plant growth and chemical and microbiological properties in soils and soil water. In the present study, we performed cultivation experiments using Wagner pots to test the growth of Japanese mustard spinach (*Komatsuna*, *Brassica rapa* var. *perviridis*) and chemical properties of soil amended with aquatic macrophytes (composted for one year) singly or in mixture with an inorganic chemical fertilizer. Wagner pots were prepared to include either of two soils (soil A from a greenhouse supplied with chemical fertilizers repeatedly and soil B from a old riverbed field). Soils in the pots were amended with composted aquatic macrophytes (MK), a commercially available chemical fertilizer (CH), or a mixture of MK and CH (HK); some pots received no amendments (NN, as a control). In the half of the pots, Japanese mustard spinach was planted (P+), whereas no plantation was done in the other half (P-). Therefore, we have the factorial design of four amendments (MK, CH, HK, NN) × two plantations (P+ vs P-) for each of soil A and soil B. The pots were incubated in screen houses for 4 weeks from May to June 2013 (soil A) and 2014 (soil B) in an experimental field of Kyoto University in Otsu city, Shiga, Japan. Soil pH was significantly higher in soils with MK than in the other amendments, and was significantly lower in P+ of soil A and in CH of soil B. Total C, total N and Truog-P concentrations were increased significantly in soils with MK. Phosphate concentration in soil water showed no significant difference between NN and MK for both soil A and B.

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