

B3

The potential of *Gastrophysa viridula* (Degeer) as a biological control agent for *Rumex obtusifolius* L.

Ohseok Kwon

Department of Sericulture and Entomology, NIAST, RDA, Korea

This study was carried out to see whether *G. viridula* (Degeer) (Coleoptera: Chrysomelidae) could be used as a biological control agent for *R. obtusifolius* L., with human manipulation of the beetle population. The study was consisted of the following three experimental sets: Experiment for the wet weight Vs dry weight relationship of *R. obtusifolius* L. (Wet-Dry experiment), Greenhouse feeding experiment, and Field experiment.

There was a significant correlation between the wet and dry weight of the total *R. obtusifolius* plant. The correlation is as follows: Total dry weight = $-0.23542 + (0.17514 \times \text{Total wet weight})$ ($R^2 = 0.9317$, $p = 0.047$, $T = 16.927$ (dF = 21)). In the Greenhouse feeding experiment, the result was very promising. The relationship between the density unit of the beetles and the growth of the plant is given below (20 day) : Plant growth = $105.8 + (-34.4 \times \text{Density unit})$ ($R^2=0.76$, $p=0.13$). A repeated introduction of the beetle population into the field vegetation of *R. obtusifolius* for the period of April to October is suggested to see the beetle's grazing ability on the plant.

The study showed that the potential grazing power of the beetle on *R. obtusifolius* was enough to defoliate the plants, but it was able to recover from its root reserves. The practical question remains as to whether repeated additions (by man) of beetles to *R. obtusifolius* could eliminate them.