

Impact of exotic invasive plants on soil fauna

Domken Sylvie, Dassonville Nicolas, Josens Guy & Meerts Pierre.

Laboratoire de génétique et écologie végétales. Université Libre de Bruxelles. Boulevard du Triomphe, campus de la Plaine CP 244 Tel +3226509166 Fax +3226509170

As part of the project ALIEN IMPACT we wanted to test if exotic invasive plants species modify soil fauna communities in terms of density and diversity. We investigated the impact of two troublesome species, *Fallopia japonica* and *Solidago gigantea*. For each species, three locations were selected with contrasting native vegetation (grassland, clearing, woodland). Pitfall traps and soil cores were used to assess the meso and macrofauna in invaded area compared to the indigenous vegetation with two sampling dates, spring and autumn. Earthworm extractions were also made. All individuals were identified at the family level and also at the species level for some taxonomic groups such as isopods, millipedes or earthworms. Data analysis is still underway but interesting trends have already emerged concerning *Fallopia japonica*. We noticed a significant decrease in the total number of individuals (from 50 to 60 %) found under the canopy of *F.japonica* compared to the uninvaded plots. In the site with grassland as native vegetation, groups like millipedes or isopods were more abundant under *Fallopia*, which have affinity for shaded and humid environment. Multivariate analysis revealed a faunistic assemblage more homogeneous under *Fallopia* mainly due to the monospecific vegetation as opposed to the multispecific resident vegetation. Earthworms species found in invaded plots were associated with moist environment while grassland species were only present in the native vegetation. Our hypothesis is that differences of soil fauna assemblage observed between *Fallopia* plots and the resident vegetation might be due to microclimatic modifications after invasion.