
Allelopathy in the invasion by *Fallopia* spp.: from invasiveness to management

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Abstract

Species of the genus *Fallopia* are among the major plant invaders in France and Europe. Our research team is investigating how allelopathy is involved in the invasion by these species. In the first hand, metabolomic studies detected flavanols (catechins), flavonols, anthraquinones, stilbenes (including piceid and resveratrol), and cinnamic acids in rhizome extracts of *Fallopia* spp. Some flavanols (B-type proanthocyanidins) have shown an inhibiting effect on denitrifying microorganisms, which could participate to the invasiveness of the species. In the other hand, allelopathic interactions could be used in biotic resistance against *Fallopia* spp. Greenhouse and lab studies showed the reduction of the growth of *F. x bohemica* when watered with an extract or a leachate from native species, compared to the control. Those results have potential applications in the management of the species in invaded sites.

Keywords: Japanese knotweed s.l., native plants, secondary metabolites, nitrogen

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