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Invasive Water Primroses in France become a weed problem in meadows

Jacques Haury*[1], Julie Coudreuse , and Michel Bozec

[1]Agrocampus Ouest, UMR Ecologie et Santé des Ecosystèmes (AO UMR ESE) – Ministère de l'Agriculture, de l'Agroalimentaire et de la Forêt – 65 rue de Saint Brieuc, CS 84215, F35042 RENNES Cedex, France

Abstract

Invasive Water Primroses (*Ludwigia grandiflora* and *L. peploides*) are amphibious Onagraceae native in tropical and subtropical American areas. They become a weed problem in wet meadows along rivers and marshes. They affect pasture productivity, biodiversity and land use for cattle breeders.
Considering the distribution in France and results of enquiries, we present the problem and focus on local risk analysis of invasion by these plants.

We have performed detailed studies in Western France since 2001 at the site level. In many areas, terrestrial forms appear on winter-submersed meadows. They can be as productive in terrestrial habitats than in aquatic ones, around 2 kg dry weight per m^2. Both species can grow altogether but *L. grandiflora* is more competitive. Colonization begins when flooding with cuttings that settle when native plants do not form dense canopy. Aquatic plants are dense, longer with poorly branched stems, while terrestrial ones in wet meadows are shorter, with a bushy form. They are highly competitive over native plants. At the beginning or colonization, populations do not form fruits, at least for *L. grandiflora*, but after some years, fruits are observed. *Ex situ* germination studies point out seed fertility. Seedlings begin to appear in some sites.

Effects on agricultural exploitations are very bad: loose of EU grants, reduction of grazing area and impossibility to use the colonized pastures, leading to land abandonment and marsh agriculture decrease. Some recommendations to reduce colonization and restore pastures conclude the presentation.

Keywords: Jussie, Water Primrose, Wetlands, Agriculture, Adaptation, Biological Invasion

*Speaker