

Towards the development of new methods for the rational control and management of *Popillia japonica*

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The Japanese beetle *Popillia japonica* Newman is an invasive species originated from Japan. The first outbreak in Continental Europe was reported in 2014 in Lombardy and Piedmont regions (Italy) and, from 2017, few occurrences were reported in Switzerland. The species is highly polyphagous. Larval trophic activity might cause damage to the plant's root system while adults may impact on leaves, flowers and fruits of cultivated and spontaneous plants. Since 2014, the Lombardy Region has undertaken actions aimed at monitoring and controlling the species. The GESPO Project was funded by the Lombardy Region with the aim to develop rational (cost-efficient) and sustainable (low-impacts) solutions for managing the diffusion and impacts of *P. japonica*. GESPO aims at: i) investigating the influence of environmental drivers on the species' life-history (e.g., larval survival), ii) exploring the role of land use and environmental variables in determining habitat suitability for the species, iii) developing cost-efficient protocols for monitoring purposes, iv) testing rational control protocols against larval and adult populations, v) developing models predicting the specie's phenology, potential distribution and spread and vi) developing decision support tools making available knowledge, data and models for supporting management decisions. We present preliminary results with particular emphasis on the evaluation of the potential habitat suitability and the phenology of *P. japonica* in the Lombardy Region.

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