

Antago-Senecio: local and specialized biological control agents against poisonous tansy ragwort (*Jacobaea vulgaris*, syn. *Senecio jacobaea*) in grasslands

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The rising number of tansy ragwort (*Jacobaea vulgaris* Gaertn., syn.: *Senecio jacobaea* L.) in grassland, especially in extensive ones, is highly problematic for grazing livestock due to the poisonous impact of pyrrolizidine alkaloids in these plants. This phenomenon also exacerbate the use of those ragwort-rich grasslands for grazing or hay and silage production. Current management and control practices are time consuming and inefficient wherefore an innovative and self-regulating method is in need to secure the livelihood of farmers and the preservation of diverse and protected grasslands. Therefore, one aim of the EIP-Agri-Project “Antago-Senecio” is finding local and specialized herbivorous insects as potential biological control agents for the regulation of tansy ragwort. Here, the well-known cinnabar moth, *Tyria jacobaeae* L. (Lepidoptera, Arctiidae) and ragwort flea beetle, *Longitarsus jacobaeae* Waterhouse (Coleoptera: Chrysomelidae), as well as the less studied ragwort crown boring moth, *Cochylis atricapitana* Stephens (Lepidoptera: Cochylidae) may be an option.

First collection of these insects were performed in the season 2022 and more than 150 larvae of *T. jacobaeae* were collected from several locations. However, at least one population was infected by microsporidia and only 26 % of collected insects survived and pupated successfully. The mean weight of the 44 surviving *Tyria*-pupae is 142.59 ± 21.81 mg and represents a solid weight for further development. Additionally, *L. jacobaeae* and *C. atricapitana* were collected in the field and are currently reared in the greenhouse. Laboratory tests are planned for the establishment of successful rearing technique as well as feeding trials to evaluate the harmful effects of the potential biological control agents. Besides their suitability for the control of *J. vulgaris*, also other ragwort species like *Jacobaea aquatica* G. Gaertn., B. Mey. & Scherb (syn.: *Senecio aquaticus* Hill), *Jacobaea erucifolia* G. Gaertn., B. Mey. & Scherb (syn.: *Senecio erucifolius* L.) and *Senecio inaequidens* D.C. are investigated. Moreover, field tests in the Westerwald in Hesse and Rhineland-Palatinate will be conducted and will complement the laboratory studies. Finally, the result will be used as basis to evaluate the potential of these herbivorous insects to regulate the dominance of ragwort in extensive grasslands as well as perspectives of their long-term establishment and application processes in grasslands.