C1 Innovations in vineyard inter-row greening to increase biodiversity and resilience in vineyard ecosystems

C1's Project Deliverable Product

Fact sheets of important pest antagonists

The following content is an excerpt from the brochure "Sieg, L., Elias, D., Tischew, S. und Kirmer, A. (2025): Wildkräutergassen in Weinbergen der Saale-Unstrut-Weinbauregion – Tipps für die Anlage und Pflege sowie Steckbriefe typischer Pflanzen und Tiere. Brochure as part of the LIFE VineAdapt project. 58 p."

Summary:
Four important groups of beneficial arthropods are presented that were identified in the surveys of the LIFE VineAdapt project, and which clearly benefited from the flower-rich vineyard inter-rows compared to conventionally grassed, grass-dominated inter-rows. These are the groups of wasps, hoverflies, ladybugs and spiders.

Important beneficial arthropods in the vineyard

By creating flowering inter-rows from native wild plants, beneficial arthropods can be supported that contribute to natural pest control and pollination in the vineyard and beyond. Due to the provision of suitable nectar and pollen sources and increased structural diversity, insects such as wasps, hoverflies and ladybugs, as well as spiders, are attracted to the vineyard. Between the vines, they act as antagonists for vineyard pests such as grape berry moths, aphids and grape rust mites.

In the following, four important groups of beneficial organisms are presented that have clearly benefited from the flower-rich vineyard inter-rows (compared to conventional, grass-dominated inter-rows) within the studies of the **LIFE VineAdapt project**.

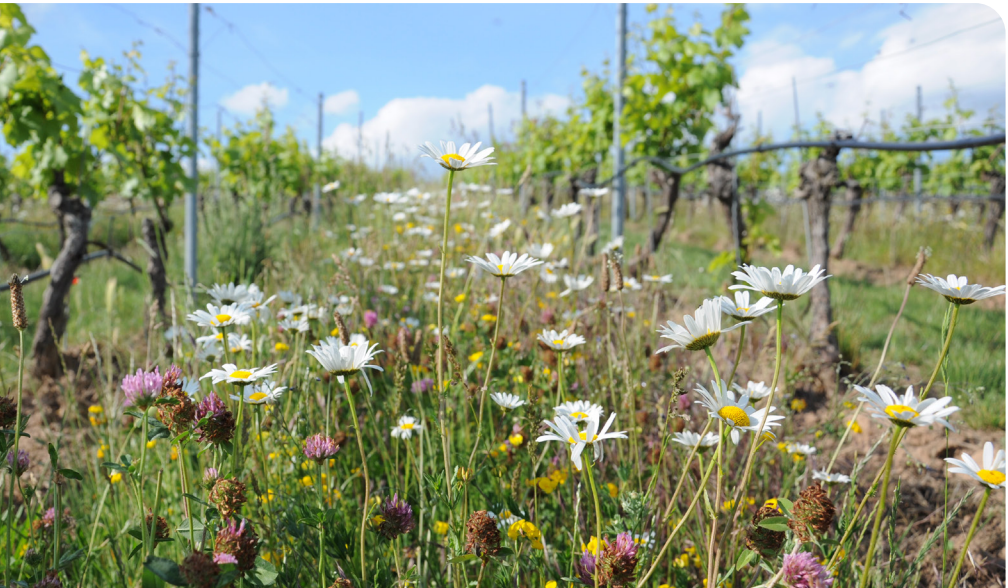

Photo: Lea Sieg

Wasps

The picture below shows a digger wasp in flight an oxeye daisy with a Colletes bee on it, on the Eulauer Heideberg. Adult digger wasps feed on nectar or pollen. However, these wasps collect insects or insect larvae for their offspring, hence they can act as natural predators of pest organisms.

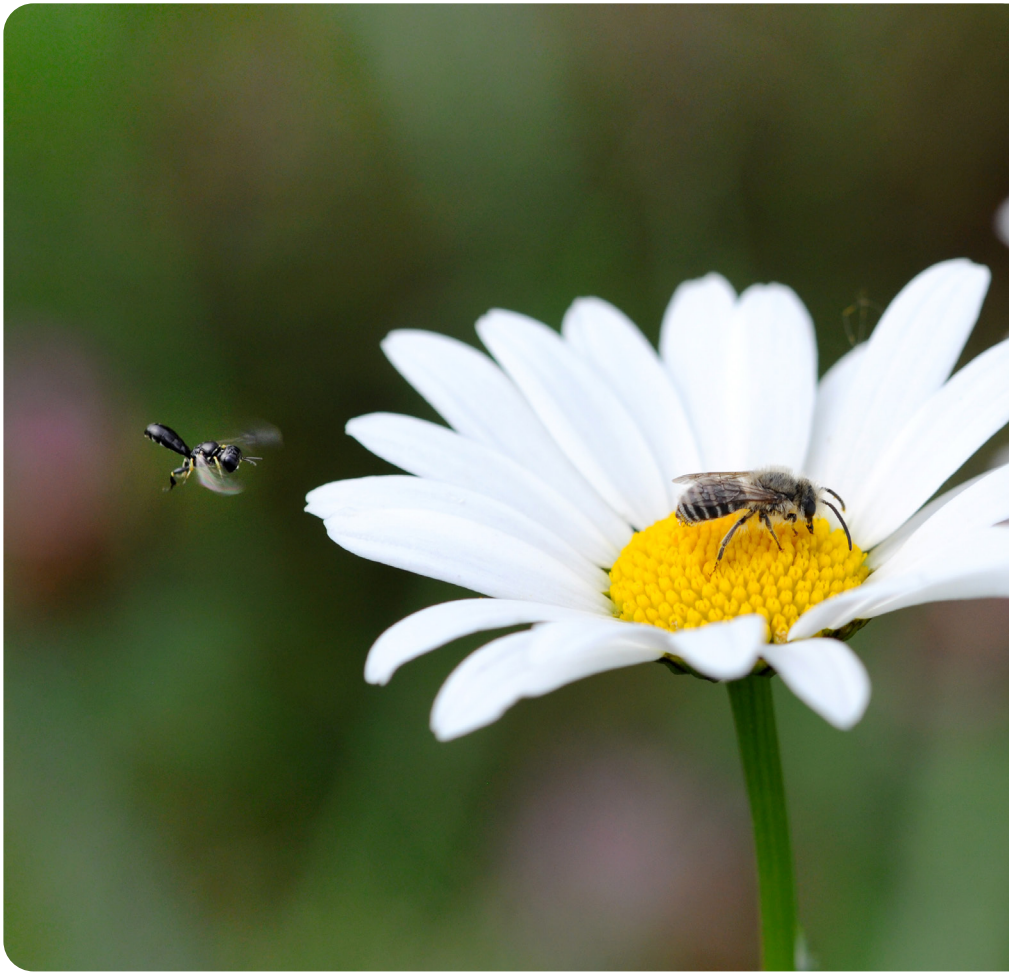

Photo: Lea Sieg

Hoverflies

The hoverfly on viper's bugloss in the picture below was taken in a project vineyard in Eger (Hungary). While the adult flies are extremely relevant as pollinators due to their visits to flowers, the larvae of hoverflies are predators and eat various insect larvae – including potential pests in viticulture.

Photo: Tamás Miglécz

Ladybugs

Ladybugs are further beneficial antagonists of crop pests. Both the adult beetles and in particular their larvae consume large quantities of e.g. aphids and spider mites. The picture below shows a ladybug on sown red clover in a vineyard near Denstedt (Weimar).

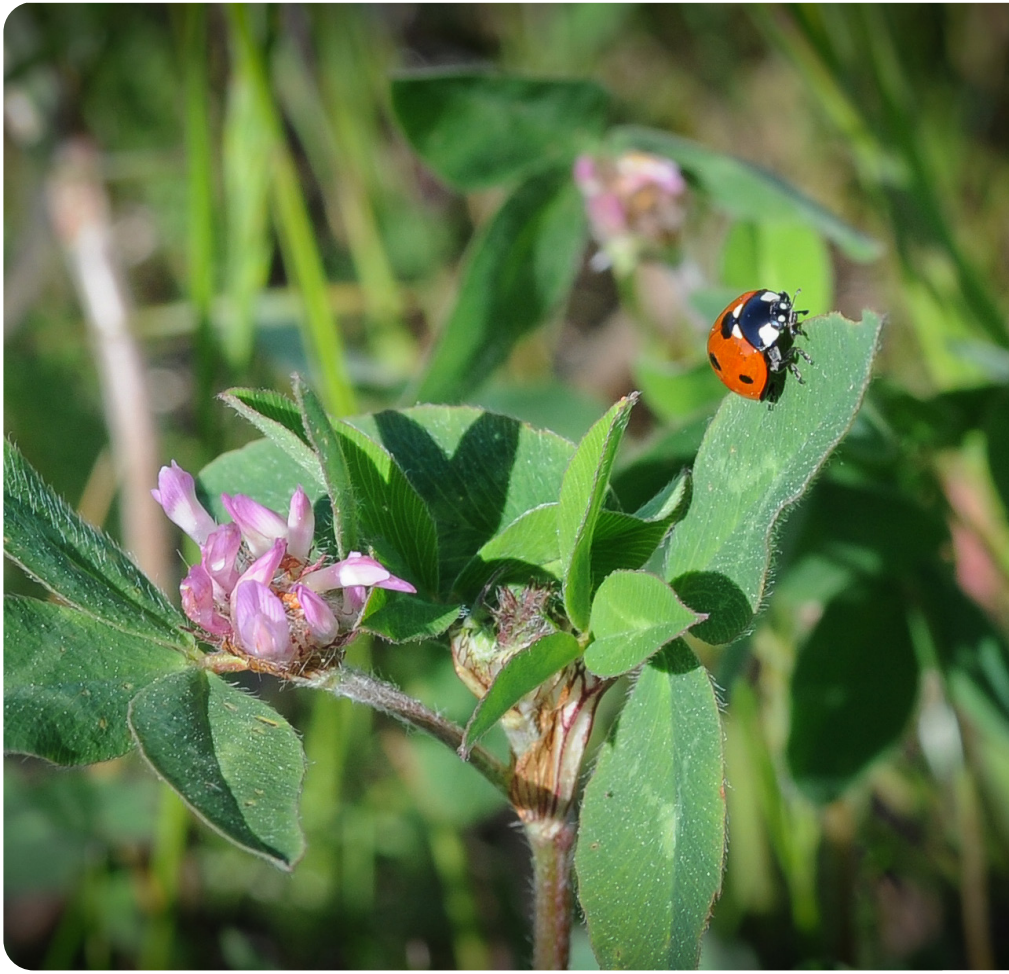

Photo: Lea Sieg

Spiders

Spiders live mainly as predators. They are important beneficial arthropods in viticulture and agriculture, as their main diet consists of flies, mosquitoes, (winged) aphids, fungus gnats, whiteflies and other insects. The picture below shows the goldenrod crab spider, a so-called ambush hunter, on field scabious on the Köppelberg near Bad Kösen, which is greened with wild plants.

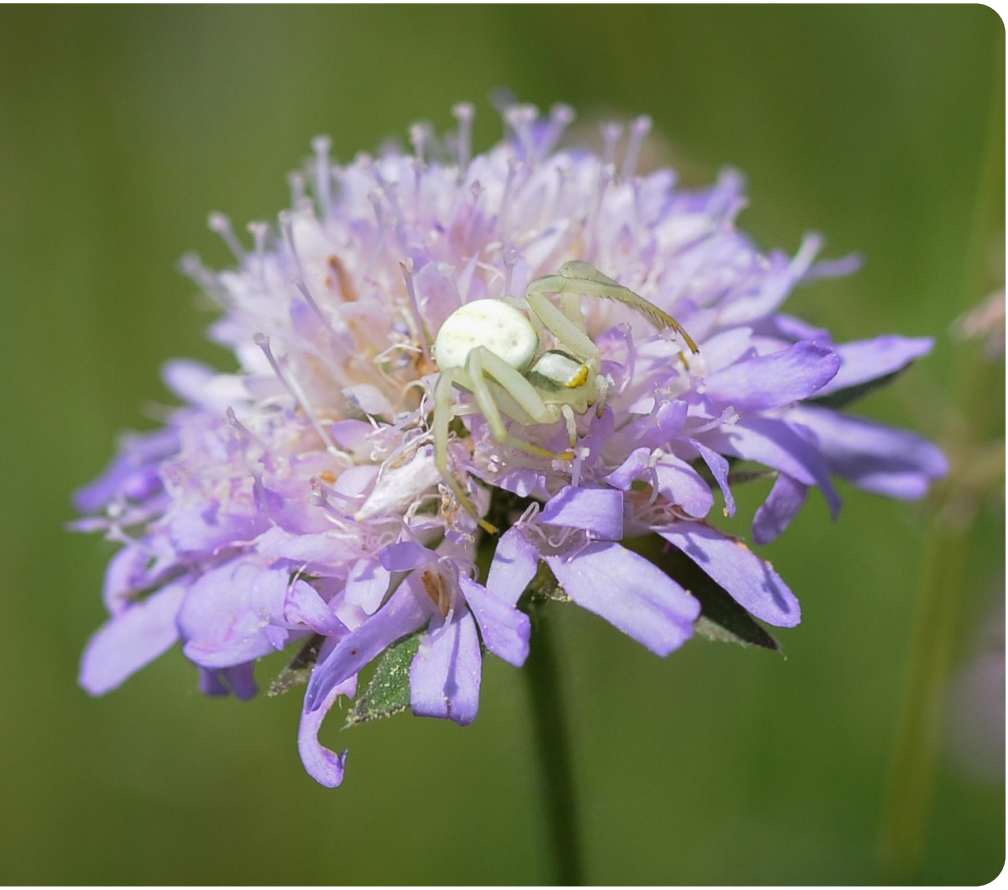

Photo: Lea Sieg

The wandering crab spider (picture below) is a running spider that stalks its prey and then catches it very quickly. In the picture it is sitting on the oxeye daisy in a wild plant inter-row on the Kreisberg near Höhnstedt.

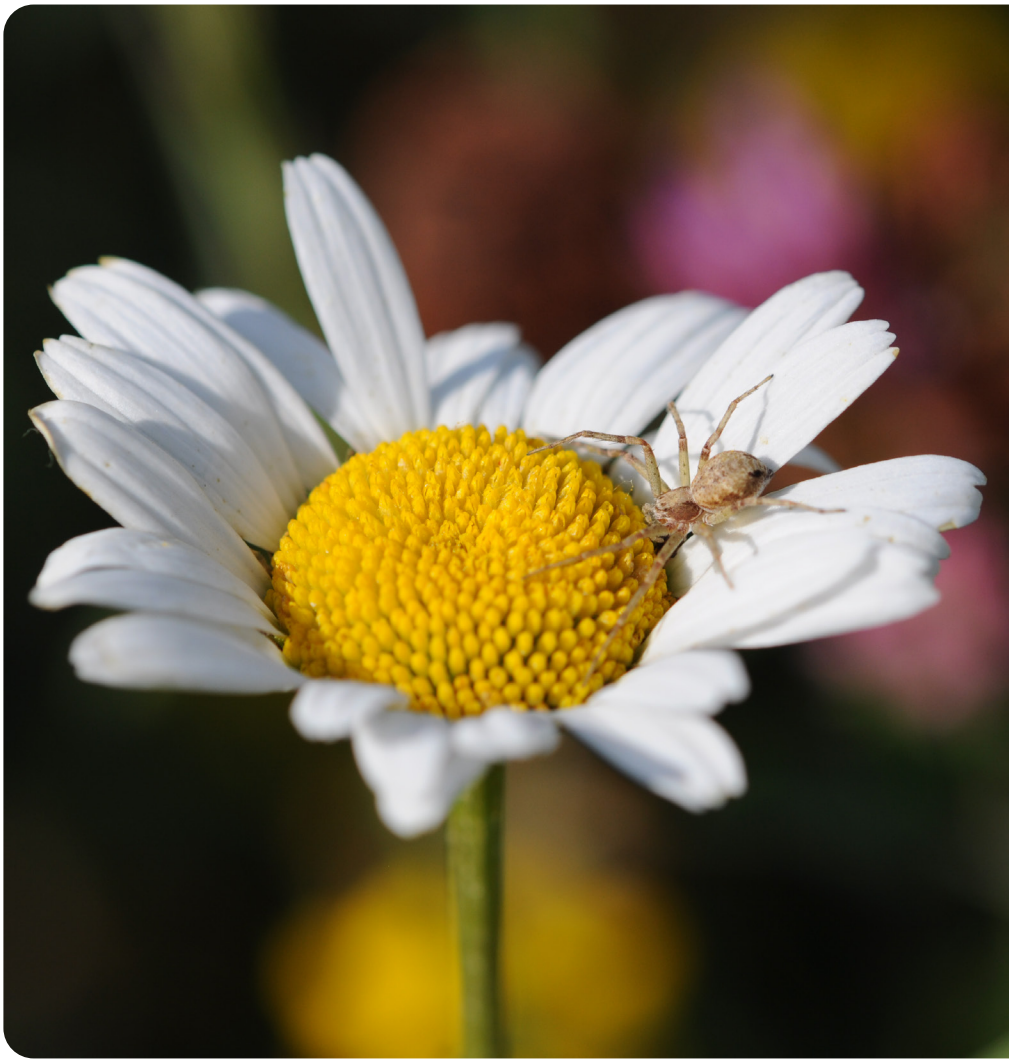

Photo: Lea Sieg