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Herbaceous strip management to enhance beneficial populations in vegetable crops

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Introduction of herbaceous strip close to openfields was demonstrated to be of great interest on the entomological diversity and abundance. While "agri-environmental measures" are developed for several years in Belgium, flower strip seed mixture need to be improved to attract beneficials. Plant composition of herbaceous strip was adapted. Four wild plant species were selected for their attractiveness and the flowering period (*Chrysanthemum segetum* L., *Agrostemma githago* L., *Papaver rhoeas* L. and *Centaurea cyanus* L.). Two seed mixtures were tested in two vegetable crops and compared to conventional seed mixture of Fabaceae and Poaceae species. While Apoidea group was assessed for their pollinator role in crops, Syrphidae family was also studied for its double beneficial function as pollinator and as aphid predator for most of the species found in crops. In 2002 and 2003, insects were trapped on the 15 weeks of the cultivation seasons. Mean density of both Apoidea and hoverfly groups in conventional herbaceous strip were significantly lower than the ones from both adapted herbaceous strip mixtures including the wild flowering species. Yellow traps in both adapted flower strip mixtures contained significantly higher beneficial hoverfly and Apoidea density than in the conventional herbaceous strip mixture. Association of *C. segetum* and *A. githago* was found to be the more interesting wild species to be introduced to attract beneficial species. The management of flower strip close to vegetable openfields was discussed to increase both crop species pollination and natural biological control of insect pests such as aphids by hoverflies.

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