

Volatile-Mediated Plant Interactions: An Innovative Approach to Cultivar Mixture Selection for Enhanced Pest Resilience

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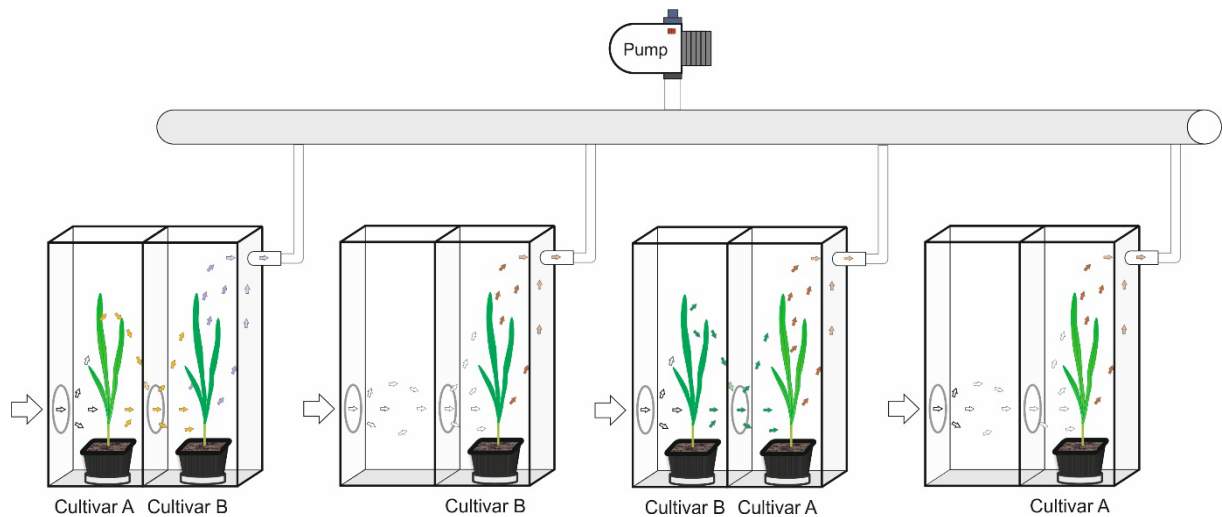


Figure S1. Graphical illustration of the exposure system in which one cultivar was exposed to the volatiles from another one. A receiving cultivar that had been exposed to clean air was utilised as a control.

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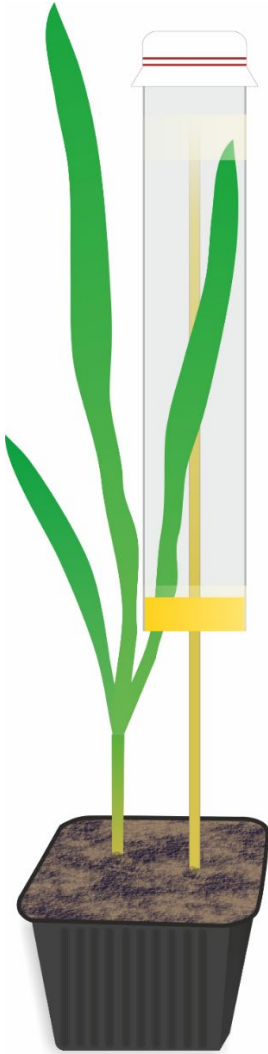


Figure S2. Aphid plant acceptance test setup. The bioassay chamber consisted of 100-ml polystyrene tube (2.5 cm x 25cm). The second leaf of a single ‘receiver’ plant was inserted into one end of the tube through a slit made in a plastic sponge that plugged the tube’s bottom end, without detaching the leaf from the main plant. Ten wingless *Rhopalosiphum padi* were placed in the top of the tube, which was then sealed with nylon netting to prevent their escape. To prevent mechanical damage to the plant, the bioassay tube was attached to a wooden stick to provide support.

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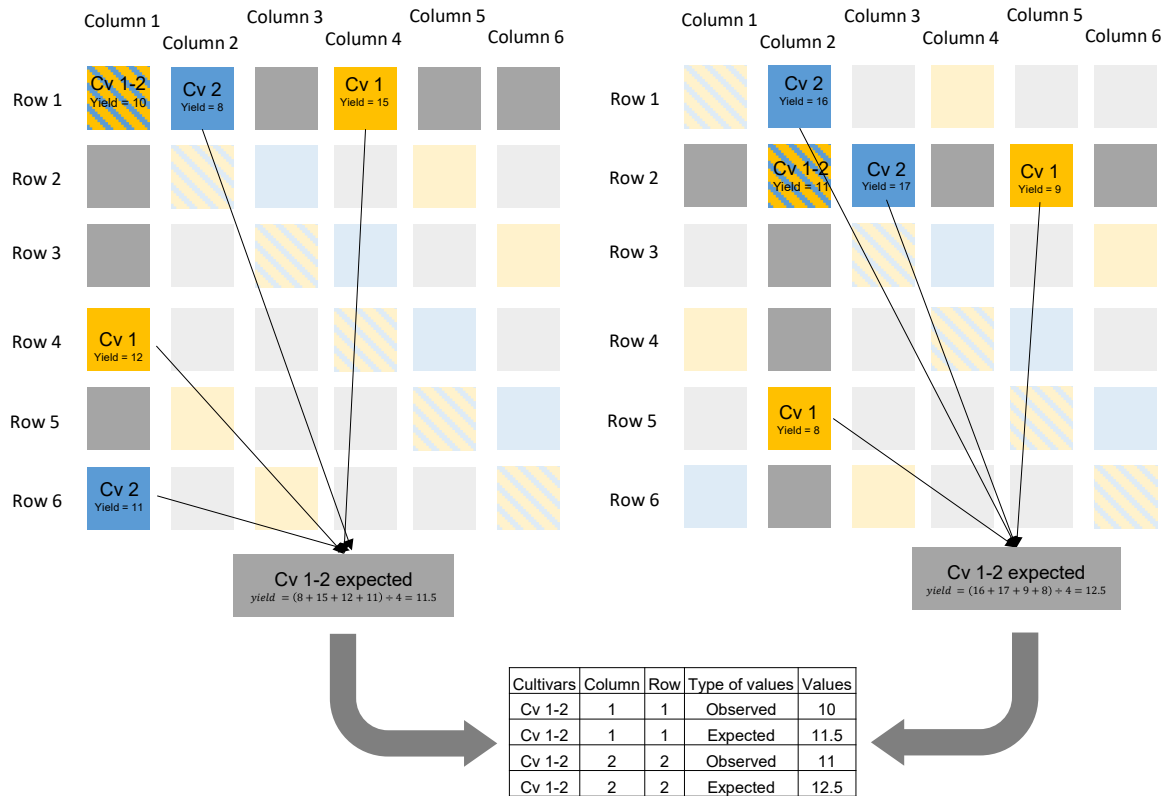


Figure S3. Example of calculation of the expected cultivar mixture values based on plot position according to rows and columns.

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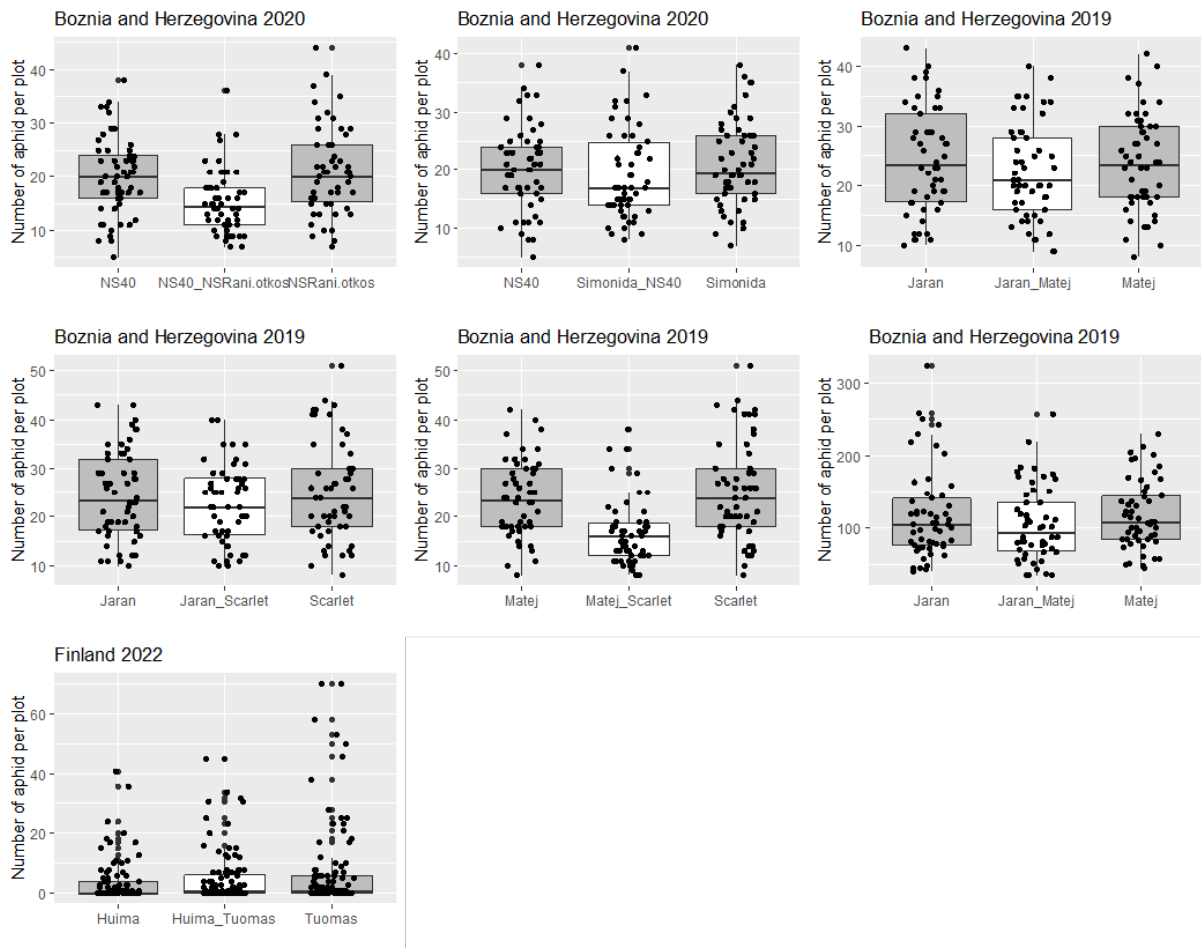


Figure S4. Boxplots (25-75 percentiles and median) of the number of aphids per plot per sampling occasion in different treatments (one cultivar or mixtures of cultivars) of different field trials where a significant effect of the cultivar mixture was observed. Black dots represent the raw data of the number of aphids per plot.

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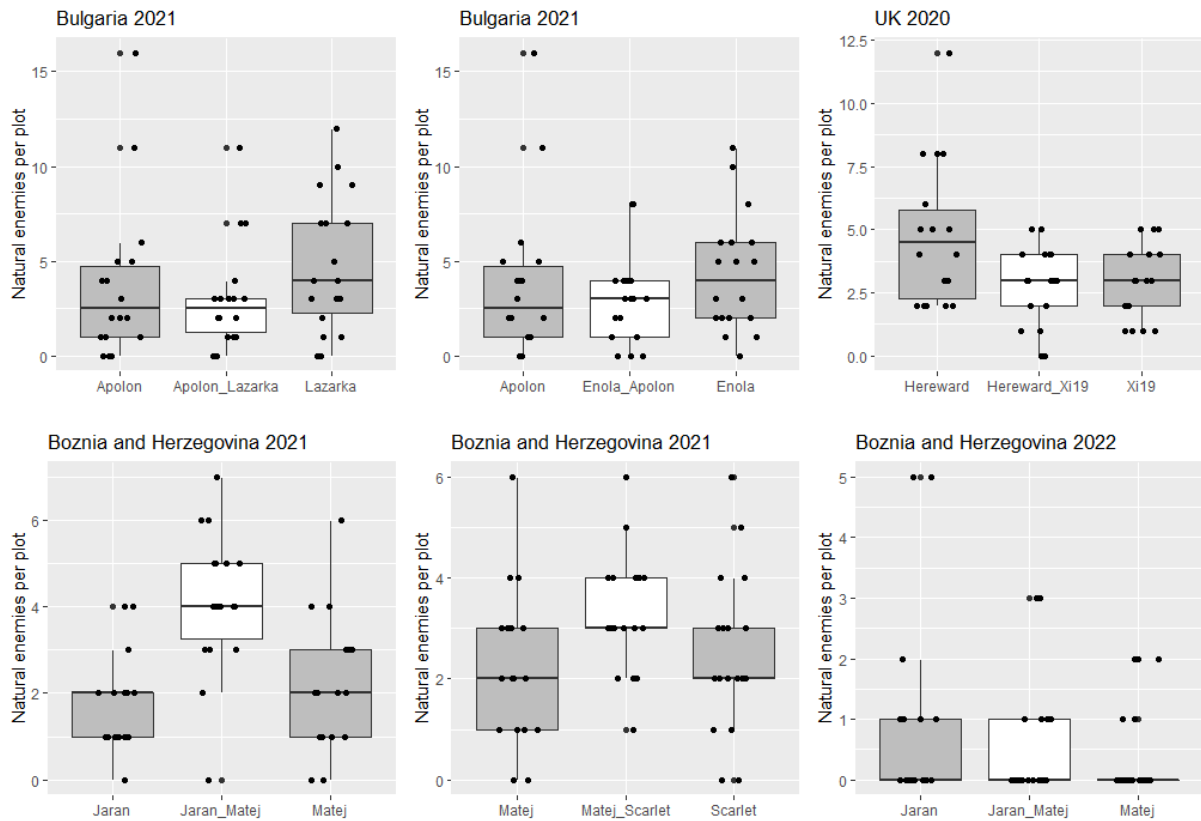


Figure S5. Boxplots (25-75 percentiles and median) of the number of natural enemies (ladybirds and hoverflies) per plot per sampling occasion in different treatments (one cultivar or mixtures of cultivars) of different field trials where a significant effect of the cultivar mixture was observed. Black dots represent the raw data of the number of natural enemies per plot.

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Table S1. Proportion of the three cereal aphid species found in the field trials completed in six countries (2019-2022).

Country	Season	<i>Sitobion avenae</i>	<i>Rhopalosiphum padi</i>	<i>Metopolophium dirhodum</i>
Bosnia and Herzegovina	2019	100%	0%	0%
	2020	100%	0%	0%
	2021	100%	0%	0%
	2022	100%	0%	0%
Bulgaria	2020	100%	0%	0%
	2021	100%	0%	0%
	2022	100%	0%	0%
Finland	2022	96%	1%	3%
Serbia	2020	100%	0%	0%
	2021	100%	0%	0%
	2022	100%	0%	0%
Sweden	2021	0%	100%	0%
	2022	96%	4%	0%
United Kingdom	2020	56%	23%	21%
	2021	16%	34%	50%
	2022	77%	9%	14%