

## Proteinase inhibitor accumulation in aphid-infested barley leaves

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Proteinase inhibitors (chymotrypsin and trypsin inhibitors) accumulation in barley leaves was studied when the plants were infested with the aphids *Schizaphis graminum* and *Rhopalosiphum padi*. Aphid infestation resulted mainly in the accumulation of chymotrypsin inhibitors (about two fold increase) and this response was higher with *S. graminum*. Frontera, a cultivar which was more resistant to aphids, accumulated more inhibitors than other cultivars. Compounds responsible for the inhibitory activities were separated by gel filtration chromatography. The separation revealed two peaks of chymotrypsin inhibitors and one peak of trypsin inhibitor.  $M(r)$  estimations for these proteins indicated sizes similar to those inhibitors found in barley seeds. These inhibitors had no effect on survival of *S. graminum* reared on artificial diets, but decreased survival of *R. padi*.