

Within-plant allocation of a chemical defense in *Secale cereale*. Is concentration the appropriate currency of allocation?

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The among-leaves allocation of DIBOA, a hydroxamic acid associated with plant resistance, in the shoot of rye (*Secale cereale*) was evaluated over the vegetative development of the plant. The appropriateness of using the concentration of secondary metabolites, DIBOA in this case, as the parameter to evaluate defense allocation in plants is discussed. Both biological and statistical arguments are put forward to suggest that allocation of chemical defenses should refer to absolute content and not to concentration. Results showed that leaf age was significantly linked to leaf concentration of DIBOA, young leaves having higher concentrations. In contrast, leaf content of DIBOA, our proposed currency of allocation, was not significantly higher in younger leaves. Furthermore, a regression analysis showed that the DIBOA content of leaves was better explained by the leaf relative biomass (proportion of shoot biomass) than by leaf biomass itself. It is suggested that, rather than leaf age, leaf