

Distribution of gamine and hydroxamic acids in barley and wheat leaves

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The first leaf of 12-day-old barley seedlings, contained 1.3 $\mu\text{mol/g}$ fr. wt gamine while the concentrations were 2.2, 2.0 and 3.1 $\mu\text{mol/g}$ fr. wt in lower and upper epidermis and mesophyll parenchyma, respectively. Gamine was not detected in the vascular bundles, nor in xylem exudates or guttation drops. Thus, about 70% of total gamine in the leaf was found in the mesophyll parenchyma and 30% in epidermal tissue. The content of hydroxamic acids was 3.0 $\mu\text{mol/g}$ fr. wt in the first leaf of 12-day-old wheat plants, while the concentrations were 6.8 and 4.1 $\mu\text{mol/g}$ fresh wt in the vascular bundle and mesophyll parenchyma, respectively. These compounds were not detected in epidermis, xylem exudates and guttation drops. About 50% of total hydroxamic acids were found in the vascular bundles. The significance of these results in plant protection against aphids is discussed. © 1987.