Ontogenesis- and Biotic Stress-Dependent Variability of Carbohydrate Content in Snap Bean (*Phaseolus vulgaris L.*)

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Physiological examination of resistant and susceptible bean genotypes has shown that the concentration and quantitative ratios of carbohydrates measurable in leaf tissues depend on the age of leaves. During the phases of ontogenesis, the glucose and sucrose levels are the lowest in the primary leaves and highest in the youngest upper leaf. There is a continuous increase in the concentration of both carbohydrates from the oldest to the youngest leaves. The glucose/sucrose quantitative ratio decreases with ageing of the leaves until blooming. Our results indicate that the glucose concentration decreases considerably in the susceptible bean leaves after infection with the bean pathogen *Pseudomonas savastanoi* pv. *phaseolicola.* It has been proved that the glucose plays an important role in the formation of the bacterial extracellular polysaccharide (EPS) coat. Because there is a positive correlation between the age-dependent bacterial-resistance and the low sugar (especially glucose) content in older leaves of the originally susceptible bean plant, we think that in the old leaves there is not enough glucose for production of the EPS coat. Lacking EPS coat the bacterial and plant cell walls come in direct contact which permits the induction of hypersensitivity response characteristic of resistance.