

Section III
Root-Feeding Coleoptera and Symphylans

INFLUENCE OF SYMPHYLAN ROOT INJURY ON SNAP BEANS

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Studies were conducted to determine the effects of garden symphylan root injury on physiological processes of snap beans. Under controlled conditions, symphylan-induced root injury significantly ($p=0.05$) reduced leaf water potential of plants infested with 10 or 20 symphylans. Severe water deficits in these plants occurred 32 days after infestation which caused serious leaf wilting and loss of cell turgor.

In conjunction with reduced leaf water potential, there were simultaneous reductions in photosynthesis and an accumulation of soluble leaf sugars (mainly sucrose, raffinose and stachyose) in leaves of plants infested with 10 and 20 symphylans.

Symphylan-induced root injury did not affect nutrient adsorption and conduction since infested plants accumulated nutrient elements in their leaves in the same amounts as uninfested plants.

Symphylan-induced stress caused a reduction in yield of plants infested with 10 and 20 symphylans. Leaf size, leaf fresh weight, total dry weight of shoots and roots of plants infested with 10 or 20 symphylans were significantly reduced 32 days after infestation ($p=0.05$).