capability for maximum pulvinule response are considered as having physiological effects analagous to the stiff, highly erect leaves of semi-dwarf rice, wheat, and other grasses. They should maximize penetration of light into the leaf canopy, thereby facilitating more uniform distribution of light across total plant leaf area and maximizing net photosynthesis and yield.

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CARBON-14 SOLUTE TRANSLOCATION IN THE REPRODUCTIVE PERIOD OF PHASEOLUS VULGARIS

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The distribution of ^{14}C assimilates was examined in pot-grown Redkote and Michelite-62 bean plants dosed with $^{14}CO_2$. A lower or an upper leaf was dosed at flowering, pod expansion or pod maturation of the plants. Assimilates moved primarily to the roots from the leaf at node four at flowering, but were diverted to actively growing pods at later stages. Dosing of the terminal trifoliate of Redkote resulted in radiocarbon transfer exclusively to the subtending pods during pod expansion and maturation. Distribution from branch leaves of both varieties was restricted to pods on that branch. If the node seven leaf of Michelite-62 was dosed, 51% of the activity was recovered from the axillary pods, and less from pods at nearby nodes. Thus middle and lower mainstem leaves of beans generally supply assimilates to several centers of active growth, while distribution from branch leaves is more restricted.

1/ See previous note for new address.

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A QUEST FOR ROOT MUTANTS

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Although much knowledge has been acquired relative to the genetic control of plant development, very little is known of the genetic control of plant root systems. We have begun the quest for this knowledge using peas, beans and tomatoes. Because of the recent success we have had in acquiring root mutants through mutagenesis in tomatoes, we are extending this procedure to peas.