

Resource concentration hypothesis: effect of host plant patch size on density of herbivorous insects

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The resource concentration hypothesis (Root 1973) predicts that specialist herbivorous insects should be more abundant in large patches of host plants, because the insects are more likely to find and stay longer in those patches. Between August 1989 and January 1990 we experimentally tested Root's hypothesis by analyzing the numerical response of four species of herbivorous insects associated with patches of 4, 16, 64 and 225 cabbage plants, *Brassica oleracea* var. *capitata*. In addition, we studied the colonization of patches by adults of *Plutella xylostella* (L.) (Lepidoptera: Plutellidae), and the migration of their larvae in patches of different sizes. No herbivorous insect densities differed significantly with patch size. Adults of *P. xylostella* colonized all kind of patches equally. Larvae did not migrate between patches, and their disappearance rate did not differ between patches. The resource concentration hypothesis is organism-dependent, being a function of the adult and juvenil