

Effect of defoliation on growth, reproductive characters and yield in mungbean [*Vigna radiata* (L.) Wilczek].

ABSTRACT

Loss of foliage in mungbean [*Vigna radiata* (L.) Wilczek] crop through leaf eating insects and diseases is common in tropical and sub-tropical countries where farmers do not protect their crops adequately. Experiments were carried out with eight levels of defoliations (0, 25, 50 and 75% either from top or from base of the canopy, and 100%) to investigate the growth, reproductive characters, and yield attributes in two high and two low yielding mungbean genotypes. Results revealed that degrees of defoliations parallelly decreased leaf area and total dry matter (TDM) production irrespective of seasons and genotypes. Defoliation not only reduced source sizes but also decreased total sink (flower) production resulting in lower pod and seed yields. However, basal 25% defoliation did not significantly decrease TDM and seed yield plant⁻¹ indicating the fact that the mungbean plant, in general, can tolerate 25% basal leaf loss of the canopy. Furthermore, the high yielding genotypes showed higher compensatory mechanism of source loss than the low yielders. Exceeding this threshold limit (> 25%) either from the base or from the top of the canopy defoliation significantly reduced TDM and seed yield. Reduction in yield was higher with top defoliation than basal defoliation. Implication of the results in relation to pest management is also discussed.

Keyword: Canopy; Defoliation; Dry mater production; Mungbean.