

A B S T R A C T

Physiological and Biochemical Studies on
Abscission of Reproductive Structures of
Pigeonpea (*Cajanus cajan* (L.) Millsp.)

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Studies conducted to find a possible pattern for the abscission of reproductive structures from the UW10, UW17 and UW26 cultivars of pigeonpea indicated that the pattern of abscission at various levels of the canopy and at different positions on branches varied between cultivars. On terminal inflorescences of these cultivars, abscission occurred mainly at the more proximal and the most distal nodes. Podset was highest at the third and fourth nodes from the distal end. Total percentage abscission was not significantly different between cultivars and was in the range 83% to 87%.

Growth regulator studies showed that ethylene increased the percentage abscission of reproductive structures and this result is discussed in relation to the possible existence of an abscission zone which contains ethylene-sensitive cells. Application of indole-3-butyric acid (IBA) at all selected concentrations, significantly reduced the percentage

abscission of reproductive structures. Benzyl amino-purine (BAP), gibberellic acid (GA_3) and indole-3-acetic acid (IAA) were not as successful in reducing the percentage abscission.

Comparison of peroxidase activity in pedicels and ovaries of abscising and non-abscising reproductive structures showed that activity was higher in samples from abscising structures. Isozyme analysis indicated one isozyme which may have had a role in abscission.

Suggestions for future work are discussed.