

ABSTRACT

A total of fourteen experiments were conducted during October 1969 and April 1971 to examine the pattern of flower drop and pod set and to study the influence of defoliation and the removal of different floral organs, bagging of flowering twigs and the foliar application of plant nutrients and exogenous plant growth regulators on flower retention and pod set in two University of the West Indies semi-determinate dwarf cultivars (GI 27/4a and CH 11/33/34) of pigeon pea on River Estate Loam at the University Field Station, Champs Fleurs, Trinidad.

In the Tagging Experiments per cent flower retention and pod set showed considerable variation. Sporadic differences existed in the cultivars and climatic conditions contributed greatly to the patterns of the variations observed. Maximum temperature was apparently the most important single meteorological factor to influence flower retention and pod set. Final pod set varied from 0 to 64 per cent.

Reduced yields were obtained by defoliation either alone or in combination with the removal of different floral organs. The necessity for the control of leaf rust disease in semi-determinate dwarf cultivars which produce few leaves once flowering has begun is emphasised. In both cultivars flowering twigs enclosed in nylon bags gave increased flower retention and pod set, probably through a shelter effect

creating a beneficial microclimate. Abscission was always mostly recorded at the closed flower stage.

In both cultivars application of TIBA caused epinasty of young leaves, loss of apical dominance, delay of flowering and maturity, increased branching and the change of plants from the reproductive to the vegetative phase. Some rates of IAA, TIBA and the liquid fertiliser increased the total number of pods per plant in cultivar GI 27/4a.

The study emphasises the necessity of controlling the variation in pod set if increased yields are to be obtained in the pigeon pea.

I am grateful for the assistance given by the Director and staff of the University of Puerto Rico Agricultural Experiment Station, Mayaguez Campus, especially Mrs. Eleonor Fontanet de Getay.

Finally thanks are also due to the Grain Legume Programme, financed by the Rockefeller Foundation, for providing the research funds; Dr. R. A. I. Bastinante from the Department of Crop Science for his invaluable guidance and help; Messrs. J. Toole and R. Boorchard for assistance in the field work; Mr. Anthony Whitehall for drawing the figures and Miss Juliet Fong for typing the manuscript.