ABSTRACT

An account of the importance of legume nutrition is given with an introduction to cowpea *Vigna unguiculata* (L.) Walp., its history, origin, distribution and taxonomy. The uses and cultivation of cowpea are also mentioned. The cowpea is known to be affected by a range of diseases, pests and non-pathogenic disorders which undoubtedly presents a major constraint to cowpea production. The most important root and stem diseases of cowpea, viz., anthracnose, sore shin, stem canker *(Rhizoctonia solani)*, *Fusarium* wilt, red stem canker, wet stem rot, charcoal rot and southern blight, are discussed.

A wet stem rot of the shrub-type Los Banos Bush Sitao No. 1 variety of cowpea characterised by chlorosis, stunting and root decay was observed frequently on cowpea plots in Trinidad, and occasionally on Blackeye No. 5. The disease is potentially of great importance because of the increasing acreages planted to Bush Sitao in Trinidad and other Caribbean territories. The etiology of this wet stem rot was investigated and described.

The principal pathogen causing the stem rot was established to be *Pythium butleri* Subram. The organism also caused the pre-emergence damping-off of seeds and death of young seedlings. Mature plants inoculated with the pathogen beyond two weeks old exhibited typical symptoms without collapse. A cultivar from the International Institute of Tropical Agriculture (IITA) showed a higher level of tolerance. Microscopic examination revealed hyphal invasion of the epidermis, cortex, cambium, phloem

and xylem parenchyma but not the xylem vessels. Two other diseases were found in this study: *Fusarium solani* caused a root rot and dry stem lesion at the soil level and *F. oxysporum* a distinctive wilt which started at the growing point. The severity of wet stem rot was affected by soil type and moisture regime and was greatest in Piarco fine sand at a moisture tension of 0.5 atmosphere (55.8 % field capacity). The vigour of the host appeared to be the major factor influencing the development of the disease.

Possible control measures of wet stem rot are discussed, in the light of the findings obtained in the study.