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SUMMARY

Introduced to Yucatan in 1980 and cultivated by the traditional, manual methods of dryland agriculture on the region's rocky, unmechanizable limestone soils, jackbean initially appeared to offer potential for the production of proteinaceous animal feed to substitute for imported grains. The studies reported here were designed to evaluate the performance of the crop in Yucatan, to determine cultural practices and comprised field experiments carried out over 4 successive seasons (1982-6). The accumulation of biomass, seed yield responses to defoliation, fertilizer application, plant density, time of sowing, weed control and intercropping with maize, and the variation between 18 Accessions of jackbean were examined. Jackbean produced forage with a high nitrogen content but regrowth after defoliation only occurred in a long growing season. Seed yield was closely related to final crop biomass, depended on the duration of the wet season and ranged from 390-950 to 2,030-3,100kgha^{-1} between the shortest and longest seasons respectively. Jackbean plants nodulated only sparsely but did not respond to nutrient application. The seed yield-plant density response ranged from nil to strongly positive between short and long growing seasons. Seed yields were reduced by delaying sowing beyond the start of the rainy season, by not controlling weeds and by intercropping with maize, although the intercropped jackbean seed yield was additional to maize yield. Variation between Accessions was encountered for growth habit, flowering time and seed yield characteristics. Flowering in jackbean appeared to be stimulated by short days and to be an important component in the adaptation of the crop to the environment. The experiments showed that jackbean was suited to the physical environment of Yucatan and to the local techniques of crop husbandry, confirmed that the crop had potential for the region and identified lines of research to further develop the crop.