

ABSTRACT

The use of high soyabean populations and narrow row spacings to enhance chemical weed control was studied in two experiments in Trinidad. The herbicides used were (1) a mixture of chloramben plus diphenamid applied pre-emergence and (2) paraquat as an inter-row directed spray. These were compared with clean weeded and minimal weeded controls. The row spacings were 30.5cm (narrow rows) and 61.0cm (wide rows), and within each row spacing there were low and high plant populations. Randomised block designs were used for both experiments.

Weed growth, assessed by visual scores and by yields of weed dry matter, was reduced by high soyabean population (approximately 300,000 plants/ha) and by narrow rows, in the November planted experiment, which received comparatively little rainfall. In the other experiment, grown during the wet season, no combination of herbicides and crop density gave improved weed control. This was partly due to more rapid and dense weed growth during the wet season.

The highest soyabean seed yields, up to 2,200 kg/ha, were obtained from the clean weeded control treatment in the dry season experiment. Soyabean yields from the best herbicide treatments were approximately 15% lower. This yield reduction was attributed to competition from weeds not adequately controlled by any combination of herbicides and soyabean planting methods.

It is concluded that high soyabean populations and narrow rows do enhance herbicide effects. More than one herbicide application, however, would be needed to fully control perennial grasses such as Paspalum fasciculatum Willd. (bamboo grass) and Panicum muticum Forsk (para grass). Paraquat caused some leaf scorch to the soyabeans. Chloramben plus diphenamid depressed the % oil in the seeds without affecting the growth of the soyabean plants.