

INFLUENCE OF CASSAVA (MANIHOT ESCULENTA) INTERCROP ON GROWTH AND FRUIT YIELDS OF PEPPER (CAPSICUM SPP.) IN SOUTH-WESTERN NIGERIA

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Abstract

In tropical Africa, pepper (*Capsicum* spp.) is grown as a rainfed crop, and its production is limited by the long, hot growing season. Field experiments were conducted in Nigeria to evaluate the effects of cassava (*Manihot esculenta*) on the growth and yields of three pepper cultivars and gross returns in 2001–2003. In Experiment 1, pepper (cv. Sombo) was planted between rows of cassava cvs Idileru (PI), Odongbo (PO) and TMS 30572 (PT). In Experiment 2, pepper cvs Sombo, Tatase and Atarodo, were mixed with TMS 30572 (MS, MT or MA). The growth environment for the intercropped pepper differed from sole crops of pepper. Radiant energy reaching the soil surface, maximum diurnal soil and canopy temperatures, and weed growth were lower with intercropping, with the lowest values being observed in the PI and PT intercrops. Similarly, soil moisture content and the number of earthworm casts were greater with intercropping, with the highest values also occurring in the PI and PT intercrops. In both experiments, fresh fruit yields of pepper depended on the duration of harvest, the number of fruits per plant and the weight of fruits. In Experiment 1, although the number of fruits and fruit yield of cv. Sombo were greater in the sole crop (SP) than the PO intercrop, the fruit yields in the PI and PT intercrops were similar to those of the SP plot. In Experiment 2, the number of fruits and yield of intercropped pepper cvs Tatase, Sombo and Atarodo were 25–28 % higher, on average, than in pure stands. Cassava tuber yield was not affected by intercropped pepper in either experiment. Total gross returns were greater than growing either pepper or cassava in monoculture. Increased total gross returns in the intercrops were obtained in the PI and PT treatments and in the MS and MA treatments without a significant reduction in pepper fruit yield. By promoting early fruit set and harvest, and bearing in mind the cumulative gross returns, mixing pepper and cassava enhanced the value of the vegetable, as early fresh pepper fruits command a premium price. It is concluded that pepper can be grown between cassava rows to provide a suitable environment for growth, but that this depends on the cassava cultivar. Using the less tall early cassava cultivar, with a relatively moderate leaf area index in a mixture with pepper is therefore recommended.