Response of maize grain yield to different intercropping patterns

Kamel Ali Eldoubi

Four field experiments were carried out during 1988 and 1989 seasons at the Agricultural Research and Experiment Center of the Faculty of Agriculture at Moshtohor, kalubia Governorate.The experiments were laid out in a compeletly randomized block design with four replications Intercropping was carried out in alternate double rows in the four experiments. The first experiment aimed to evaluate 9 maize and soybean intercropping systems including the possible combinations of 3 population densities of each spieces. The population densities were 50, 75 and 100% of the pure stand density of each intercrop. In this experiment maize and soybean were planted simultaneously. In addition maize and soybean were grown in solid planting at the normal population densities which were 20,000 plants /fed. for maize and 120,000 plants/fed. for soybean.The second experiment aimed to evaluate the same intercropping systems of the first experiment but soybean 193was planted 3 weeks earlier than maize.The third experiment aimed to evaluate 9 maize and sunflower intercropping patterns including also the possible combinations of 3 population densities of each spieces. The population densities were 50, 75 and 100% of the pure stand density of each intercrop. In this experiment maize and sunflower were planted simultaneously. In addition, maize as well as sunflower were also planted in pure stand at the normal population densities which were 20,000 plants/fed. for maize and 24,000 plants/fed. for sunflower. The fourth experiment aimed also to evaluable thesame intercropping patterns of the third experiment but maize was planted 3 weeks earlier than sunflower .Intercropping was done in all experiments in alternate double rows. Varieties grown in both seasons were Giza 2 for maize, Clark soybean, Majak sunflower (of medium plant height). The normal cultural practices were applied for all crops, either in pure stand or intercropped as recommended for the region. N fertilizer was applied for all plots at 105 kg N/fed.) regardless the intercropping treatments. 194 Data on growth , yield components and yield were recorded, and the competitive relationships and yield advantages, namely, land equivalent ratio (LER), relative crowding coefficient (K) and aggressivity (A) were calculated.