Effect of intercropping mungbean with maize on yield, yield components and competition relationship

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Two field experiments were conducted in 2003 and 2004 seasons in the farm of Sers El-Lian Agricultural research Station, A.R.C. Minufiya Governorate, A.R.E. to evaluate three maize varieties i.e. (S.C.10, T.W.C. 321 and Giza 2 under three levels of nitrogen fertilizer (100, 120 and 140 kg N/fed.) and intercropping maize with mungbean at different patterns (2 : 1, 2 : 2 and 2 :3) and their effect on growth, yield and its components as well as competitive relationships of the two crops.The soil type was clay with pH 8.1 and 7.40 in the first and second seasons, respectively.Each experiment included 31 treatments which were the combination of three maize varieties, three levels of nitrogen fertilizer and three patterns of intercropping as well as three treatments of pure stand for maize varieties and one treatment of pure stand for mungbean, Kawmy 1, variety (Vigna radiate L. wilezelk). The experimental design was split- split plots with four replications. Maize was grown on both sides of the ridges (140 cm), 30 cm between hills with three patterns intercropping of mungbean (one row, two rows and three rows on the ridge), 20 cm between hills and two plants per hill. Mungbean was sown on May 24 and 20 in 2003 and 2004 seasons, respectively. While maize varieties were sown at 7 and 3 June in the first and second seasons, respectively.Summary-167-The studied characteristics were as follow : I. Maize :1-Growth characters: plant height, ear posi ion, stem diameter, number of green leaves/plant, le f area of the topmost ear and time of tasseling and si g.2-Yield abd yield components: percentage f double —eared plants, ear length, ear diameter, n ber of rows/ear, number of grains/row, ear weig t, weight of grains/ear, shelling percentage, weight of 100-grains and grain yield/feddan.3-Chemical analysis : protein content, oil co tent and carbohydrate content in maize grains. H. Mungbean :1-Growth characters: plant height, number of branches/plant, number of leaves/plant and leaf area index.2-Yield and yield components: number of pods and seeds/plant, weight of pods and seeds/plant, weight of 100-seeds and seed yield/feddan .3-Chemical analysis : protein content, oil content and carbohydrate content in mungbean seeds. III. Competitive relationships and yield advantage :Land equivalent ration, relative crowding co efficient and aggressivity.