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### Abstract

Two field experiments were carried out at El-Kassasien Horticulture Research Station, Ismailia Governorate, during 2001-2002 and 2002-2003 seasons . The study aimed to investigate the effect of three sowing dates (15<sup>th</sup> Sept., 15<sup>th</sup> Oct. and 15<sup>th</sup> Nov.), three plant densities ( 11.11, 16.16 and 33.33 plant/m<sup>2</sup>) and four biofertilization ( phosphorine, rhizobacterine, rhizobium and phosphorine + rhizobacterine + rhizobium) treatments on growth, yield and its components as well as chemical constituents of pea . Results showed that sowing plants at 15<sup>th</sup> Oct. was the best date for improving vegetative growth, expressed as plant height, number of leaves and branches and dry weight of whole plant, yield and its components (number and weight of green pods / plant (g), total green pods yield (tons/fed.) and chemical constituents (photosynthetic pigments, NPK, protein, carbohydrates, TSS and total sugars) . Sowing plants at 16.16 plants/m<sup>2</sup> was the best plant density for increasing all vegetative growth characters , except plant height and photosynthetic pigments which were increased with plant density at 11.11 plants/m<sup>2</sup>. This treatment also increased yield and its components and enhanced chemical constituents . The best biofertilization treatment for increasing vegetative growth, yield and its components as well as chemical constituents was the mixture of phosphorine + rhizobacterine + rhizobium with half recommended dose of mineral fertilizers . In conclusion, optimum pea plant performance was obtained as a result of the interaction among sowing date ( 15<sup>th</sup> Oct ) plant density ( 16.16 plants/m<sup>2</sup> ) and biofertilization by phosphorine + rhizobacterine + rhizobium at a rate 1 kg / fed., each of them with half recommended dose of mineral fertilizers.

Key words : *Pisum sativum* L. , Sowing dates , Plant spacing , Phosphorine + Rhizobacterine + Rhizobium .

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