

Effects of Sowing Date and Plant Density on Yield and Yield Components of Grass Pea (*Lathyrus sativus* L.) in Birjand Region

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(Received: Nov. 26-2010; Accepted: Nov. 1-2011)

Abstract

Grass pea (*Lathyrus sativus* L.) is a crop which could substitute soybean in poultry ration in arid and semi-arid regions. To investigate the effects of sowing date and plant density on yield and yield components of grass pea, a factorial experiment based on randomized complete blocks design with four replications was conducted at Research Farm of Faculty of Agriculture, University of Birjand in 2008. Treatments included three sowing dates (March 5, March 21 and April 4) and four plant densities (30, 40, 50 and 60 plants per m²). Number of pods per plant, number of seeds per pod, number of seeds per plant, 100-seed weight, seed yield, biological yield and harvest index were measured. Results showed that by delaying the planting date, number of pods per plant, number of seeds per plant, seed yield and biological yield were decreased significantly. Maximum seed yield (2524 kg/ha) was achieved at the early sowing date (5th of March). These traits were increased with increasing plant density up to 50 plants per m². But, increasing the plant density to 60 plants per m² caused a decrease of these characteristics. Different planting dates and densities did not show any significant changes in number of seeds per pod, 100-seed weight and harvest index. Based on these results and the fact that Birjand is overwhelmed by an arid climate, planting grass pea at the first possible date at the end of winter with a moderate planting density (50 plants per m²) can lead to a reasonable seed yield.

Keywords: Grass pea, Sowing date, Plant density, Seed yield, Biological yield, Harvest index.

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