

## **Abstract**

This experiment was conducted for studying the effects of nitrogen fertilizer levels and plant density on the yield and yield components of green gram (*Vigna radiate*) in Sistan during 2015-2016. The experiment was as factorial split plot design with three replications. The main factor was for levels of pure nitrogen application (0- 50- 100- 150 kg/ha) and plant density as the subplot in four levels including: 30, 40, 50 and 60 plants at meter square. That each includes 4 line planting, to over 3 meters and distance of lines was 50 cm. Cultivation was conducted at May and use from Sistan local mass. And the characteristics includes: plant height , number branch at plant, the length of pod, number of pod in plant, number of seed in pod, seed yield, biological yield, harvest index, protein percent, carbon hydrate percent, nitrogen percent, fat percent and ash percent. Based on the results interaction nitrogen fertilizer levels and plant density was significant on treatments of number of seed in pod, weight of hundred seed, biological yield and harvest index. So that the highest number of seed in pod obtained of 150 kg/ha nitrogen fertilizer application and plant density of 50 plants at meter square with 29.59 seed, the highest weight of hundred seed obtained of 150 kg/ha nitrogen fertilizer application and plant density of 50 plants at meter square with 103.53 gram, the highest biological yield and harvest index respectively with 1529.36 Kg and with 43.39 percent obtained of 150 kg/ha nitrogen fertilizer application and plant density of 50 plants at meter square, and the highest protein percent obtained of 150 kg/ha nitrogen fertilizer application and plant density of 60 plants at meter square. In general, in Sistan weather conditions, the use of 150 kg/ha nitrogen fertilizer application and plant density of 50 plants at meter square appears good to produce green gram.

**Keywords:** Nutrition, Plant Density, *Vigna Radiate*



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**The effect of nitrogen fertilizer and plant density on  
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