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RESEARCH PAPER

# Response of different sources and levels of potash on growth, yield attributes and yields of isabgul (*Plantago ovata* Forsk)

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**Abstract :** A field experiment was conducted during *Rabi* seasons of the year 2009-10 at College Agronomy Farm, B. A. College of Agriculture, Anand Agricultural University, Anand, Gujarat to evaluate the productivity of isabgul crop under varying levels of potash. Application of 60 kg $K_2O$ $ha^{-1}$ from potassium sulphate ($K_2SO_4$) was most effective for securing higher seed yield and yield attributes, which resulted in to increased seed yield to the tune of 27.04 % over control. Higher net return (91266 Rs. $ha^{-1}$), cost benefit ratio (1:11.52) and net CBR (1:10.52) were obtained under the treatment combination (application of 60 kg $K_2O$ $ha^{-1}$ from $K_2SO_4$). The interaction effect of different sources and levels of potash was non-significant.

**Key Words :** Isabgul, *Plantago ovata*, *Blonde psyllium*, Potash

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## INTRODUCTION

*Blonde psyllium* is an important medicinal crop of Gujarat. Due to low cost of production and higher return from the crop, Gujarat commands near monopoly in the production and export of isabgul seed and seed husk to the world market. It is cultivated in India about 1.3 lakh ha with production of 77000 MT seed. (Desai and Devra, 2008). Earning about 130 crores rupees from the isabgul seed and 150 crores rupees from husk were exported valued together Rs.280 crores. Isabgul is raised as a *Rabi* season crop and grown in all type of soil under irrigated conditions but does best on loamy soils. Water is scare commodity, which if used judiciously along with suitable agrotechniques would substantially increase the plant growth, yield attributes and yield. Application of fertilizers in proper amount and in proper time will go for higher crop production. Potassium application increases the plant's growth and yield because it participates in the mechanisam of stomatal movement, photosynthesis and helps in osmoregulatory adaption of plant due to water stress (Weimberg *et al*., 1982). With these dual purpose agronomic aspects in mind, an attempt has been made to conduct an experiment on response of different sources and levels of potash on growth, yield attributes and yields of isabgul (*Plantago ovata* Forsk).

## MATERIALS AND METHODS

A field experiment was conducted during *Rabi* seasons of the year 2009-10 at College Agronomy Farm, B. A. College of Agriculture, Anand Agricultural University, Anand, Gujarat. The soil was loamy sand in texture. The soil was low in available nitrogen, medium in phosphorus and low in potash. The experiment was laid out in Factorial Randomized Block Design (FRBD) with four replications. The treatments consisted of two sources of potash and five different levels of potash *viz.*, $S_1$: (Potassium chloride, KCl), $S_2$: (Potassium sulphate, $K_2SO_4$) and levels of potash *viz*., $K_0$: Control; $K_1$: 20 kg $K_2O$ $ha^{-1}$ ; $K_2$: 40 kg $K_2O$ $ha^{-1}$ ; $K_3$: 60 kg $K_2O$ $ha^{-1}$ and $K_4$: 80 kg $K_2O$ $ha^{-1}$. In all, there were ten treatment combinations. Isabgul variety GI-2 was sown in line sowing at 30 cm distance on November 20th during the year 2009-10 and fertilized with

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