Response Of Blond Psyllium (*Plantago Ovata* Forsk.) To Irrigation And Nitrogen Fertilization

G.S. Chouhan*, A. Joshi and N.K. Padiwal

Department of Agronomy, Rajasthan College of Agriculture, Maharana Pratap University of Agriculture & Technology, Udaipur (Rajasthan)- 313001

**ABSTRACT**

A field experiment was conducted at Rajasthan College of Agriculture, MPUAT, Udaipur during rabi 1998-99 to 2000-2001 to study the effect of irrigation and nitrogen fertilization on yield and quality of Blond psyllium. Three irrigation schedules, viz; 2 irrigations (at tiller initiation and full tiller stages), 3 irrigations (at tiller initiation, full tiller and 75% flowering stages) and 4 irrigations (at tiller initiation, full tiller, 75% flowering and seed development stages) were tried at 3 nitrogen rates (15, 30 and 45 kg/ha) in split plot design with 6 replications. Results showed that application of 3 irrigations resulted in significantly higher plant height, effective tillers per plant, spike length and seed yield compared to 2 irrigations. Variation between 3 and 4 irrigations with respect to these characters was found non significant, except husk yield which was significantly higher due to 3 irrigations compared to 4. Swelling factor and husk recovery of seeds were reduced when irrigation intensity was increased. Increasing levels of nitrogen up to 30kg/ha significantly increased effective tillers per plant, spike length, seed yield and husk yield but a significant reduction in swelling factor and husk recovery of seeds was observed due to increase in nitrogen rates. Plant height, however, was increased significantly up to 45 kg N/ha.

**Key words:** Blond psyllium, nitrogen, irrigation, swelling factor, husk recovery.

**INTRODUCTION**

Blond psyllium (*Plantago ovata* Forsk.) locally known as Isabgol is a winter season crop, the seeds of which are valued for mucilaginous rosy white husk, which is used against constipation, irritation of digestive tract etc. In addition, it is also used in food industries in various preparations. India is the leader in Blond psyllium production and largest exporter of husk and seed. On an average, export worth of about Rs.1600 million is done annually. In spite of such high market potential and importance of the crop the agronomic aspects, particularly irrigation based on critical physiological growth stages and nitrogen fertilization for Blond psyllium are still not developed and studied in detail.

Irrigation water is a costly and scarce resource and availability of water to agriculture is expected to reduce. Therefore, scheduling of irrigation at moisture sensitive and more responsive stages of plant growth is need of the moment. Nitrogen is vitally important plant nutrient. Though, Blond psyllium is a non exhaustive crop Gupta, (1982), an adequate supply of nitrogen is associated with its vigorous vegetative growth and better yield and quality with regards to its texture and uniformity of seeds. The higher rates of applied nitrogen, however, decreases the swelling factor of seeds which is not desirable Kalyansundaram et al.,(1982).

*Author for correspondence*