



Received : May, 2011; Accepted : June, 2011

Research
Paper

NPK content and uptake in Indian mustard (*Brassica juncea* L.) varieties as influenced by limited irrigation and nitrogen levels

R.K. SAUD AND B.P. SINGH

See end of the article for authors' affiliations

Correspondence to :

R.K. SAUD

Agricultural Technology
Information Centre,
Directorate of Extension
Education, Assam
Agricultural University,
JORHAT (ASSAM) INDIA
Email : rksaud@yahoo.com

ABSTRACT

A field experiment was conducted during winter season of 1999-2000 and 2000-2001 to study the effect of limited irrigation and nitrogen levels on NPK content and their uptake by Indian mustard [*Brassica juncea* (L)] varieties. The variety 'Laxmi' recorded higher N,P and K per cent content and NPK uptake both in seed and stover. Application of irrigation increased N,P and K contents both in seed and stover but the difference were non significant. One irrigation applied at flowering stage recorded higher NPK uptake both in seed and stover over other irrigation levels during both the years. The increase in nitrogen levels increased significantly the nitrogen content both in seed and stover upto 60 kg Nha⁻¹. However, P and K content in seed and stover was not influenced during any of the year. The nitrogen application increased significantly the uptake of NPK by seed and stover upto 100 kg Nha⁻¹.

Saud, R.K. and Singh, B.P. (2011). NPK content and uptake in Indian mustard (*Brassica juncea* L.) varieties as influenced by limited irrigation and nitrogen levels. *Adv. Res. J. Crop Improv.*, 2(1): 131-134.

Key words : NPK content, NPK uptake, Limited irrigation, Nitrogen levels

INTRODUCTION

With the increase in irrigation facilities and to fetch better prices of oilseeds, Raya or Indian mustard (*Brassica juncea* L.) is preferred over other crops of rapeseed-mustard group. It has also maximum production potential and established as more responsive to irrigation and fertilizer management by its other virtue viz., profuse foliage, deep and extensive root system and comparatively better tolerance to low temperature, pest and disease hazards. The high yielding varieties of Indian mustard have been found to respond well to nitrogen but the information on the effect of nitrogen under limited water supply condition on NPK content and its uptake is meagre. Hence, present investigation was undertaken.

MATERIALS AND METHODS

A field experiment on Indian mustard varieties was conducted during rabi seasons of 1999-2000 and 2000 – 2001 at the Agronomy Research Farm of C.C.S.Haryana Agricultural University, Hisar. The experiment was laid

out in a Split-plot design with three replications keeping two varieties of Indian mustard viz., V₁-RH 9304, V₂-Laxmi and three irrigation levels viz., I₀- no post sowing irrigation, I₁- one irrigation (60 mm) at flowering stage, I₂- one irrigation (60mm) at siliqua development stage in main plots and six nitrogen levels viz., No-no nitrogen application, N₁-40 kg N ha⁻¹, N₂- 60 kg N ha⁻¹, N₃- 80 kg N ha⁻¹, N₄- 100 kg N ha⁻¹ and N₅- 120 kg N ha⁻¹ in sub-plots. The field trial was conducted on sandy loam soil with 172 and 168 kgha⁻¹ available N, 16 and 14 kgha⁻¹ available P, 381 and 379 kgha⁻¹ available K during 1999-2000 and 2000-2001, respectively. Entire nitrogen as per treatment as urea and phosphorus in the form of SSP were applied at sowing. The crop was sown on 14 November 1999 and 15 November 2000 at a row spacing of 30 cm apart in the same field during both the years. Thinning was done 30 days after emergence to maintain plant to plant distance of 15 cm. A measured quantity of water (60 cm depth) in each irrigation was applied as per requirement of treatments. The total rainfall received during the winter season of 1999-2000 and 2000-2001 was 19.0 and 15.0 mm, respectively. The crop was harvested