

Management of source limitation by foliar spray of nutrients and growth regulators in blackgram

■ R. AMUTHA, S. NITHILA AND T. SIVA KUMAR

SUMMARY

Foliar spray of nutrient mixture combined with salicylic acid (100 ppm) at 20, 30 and 40 DAS proved to be the best treatment in showing the significant results in leaf area index, leaf area duration, specific leaf weight, total dry matter accumulation and seed yield. Foliar spray of nutrient mixture with salicylic acid was helpful in increasing LAI to 3.51 from 2.13 and the per cent increase over control is 37. The LAD is extended to five days and per cent increase over control is 16. By increasing the source size by the nutrient mixture with salicylic acid, the yield is raised to 26 per cent over control.

Key Words : Growth regulators, Blackgram, Foliar spray, Dry matter accumulation Micro nutrients

How to cite this article : Amutha, R., Nithila, S. and Siva Kumar, T. (2012). Management of source limitation by foliar spray of nutrients and growth regulators in blackgram. *Internat. J. Plant Sci.*, 7 (1) : 65-68.

Article chronicle : Received : 10.08.2011; Sent for revision : 25.10.2011; Accepted : 16.11.2011

Urdbean [*Vigna mungo* (L.) Hepper] is an important pulse crop grown throughout India. It is grown in an area of about three million hectares in India. It is mainly used as 'dal' and in preparation of many dishes in our diet. It is very rich in protein, containing about 25 per cent protein in its seeds and is the richest source of phosphoric acid among the pulses. Beside, green fodder of urdbean is very nutritive and is especially useful for milch cattle. It can also be used as green manure. It also acts as a cover crop and its deep root system protects the soil from erosion. It has the capacity to fix atmospheric nitrogen and thus restoring the soil fertility. The yield of black gram is comparatively lower than the other grain legumes. Over past three decades there has been a dramatic improvement in the yield of cereal grains. This was achieved by manipulation of the genetic make up and physiological

characteristics of these crops. The lower yield of black gram is due to shorter growth duration, particularly the slow rate of dry matter accumulation prior to flowering, unfavourable canopy structure, abscission of reproductive organs etc.

It was observed that black gram developed less than 50 per cent of canopy prior to flowering (Biawas and Mandal, 1988). Total dry matter produced prior to flowering was around 20 per cent of total dry matter attained at maturity. Maximum CGR synchronized with the attainment of maximum leaf mass immediately after flowering which was also for a brief period. Dry matter accumulation after flowering greatly influences seed yield, for most of the photosynthates produced at this stage is used for pod and seed development. Balanced nutrition ensures high yield and quality. Often, a starter dose of nitrogen and adequate phosphorus dressing is essential to achieve the desired yield. In the past, several workers have reported increase in growth and yield parameters with use of micro nutrients and growth regulators. So keeping in the view of above points, proposed study was undertaken on blackgram with the objective, to find out the most effective and optimum concentration of micro nutrients and plant growth regulators to increase the source size thereby improvement in yield.

MEMBERS OF THE RESEARCH FORUM

Author to be contacted :

R. AMUTHA, Division of Crop Physiology, Department of Seed Science and Technology, Agricultural College and Research Institute, MADURAI (T. N.) INDIA
E-mail: amuthar2003@yahoo.co.in

Address of the co-authors:

S. NITHILA AND T. SIVA KUMAR, Division of Crop Physiology, Department of Seed Science and Technology, Agricultural College and Research Institute, MADURAI (T. N.) INDIA