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Effect of auxin and gibberellic acid on growth and yield components of Linseed (*Linum usitatissimum* L.)

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Linseed (*Linum usitatissimum* L.), or flax, is a crop of interest from ancient times, as it is used both for fiber and oil. India is the fourth largest oilseed growing country in the world, and third largest producer of linseed. In India, approximately 2,009,100 tons of linseed is produced annually. Linseed has long been used as a cash crop and is mainly grown for its oil, which is continuously being utilized for various industrial purposes and also as a food supplement. A major alteration in demand of linseed oil and its other byproducts was observed in the last decade, which has elevated in recent times due to its increased demand as functional food and higher industrial uses. Its low productivity is ascribed to non-availability of superior cultivars to suit the diverse agroclimatic environment. The commercial importance of linseed (*Linum usitatissimum* L.) has attracted breeders to increase its seed yield using various breeding approaches. Plant growth regulators (PGRs) have a significant role in enhancing yield and its related traits in linseed. In the present study, two plant growth hormones, auxin and gibberellic acid, were applied individually, as well as in combinations, in order to study their effect on yield and its components in "Neelam", which is a high yielding variety of linseed. A comparative study was done under pot and field conditions. A combined dose of auxin (1.0 mg L⁻¹) and gibberellin (200 mg L⁻¹) is recommended for the enhancement of seed yield, whereas a 0.5 mg L⁻¹ dose of auxin is recommended for the enhancement of vegetative growth. It was concluded that the plant growth regulators can be successfully employed to enhance the yield in this economically important oil seed crop.

Biography

Ameena Siddiqui has completed her M.Sc. in Botany from Kanpur University, and presently pursuing Ph.D. in Dept. of Genetics and Plant Breeding, National Botanical Research Institute, Lucknow and registered for Ph.D. in Academy of CSIR.

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Water quality assessment of groundwater in Nira River basin area for agricultural and drinking purpose

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Freshwater is a finite resource; essential for agriculture and drinking purpose. Groundwater quality of Nira River basin area has undergone degradation due to unlimited use of canal water for irrigation purpose. This area is under irrigation by Nira River left canal. The hydrochemical investigations in the present study were carried out by using standard methods of APHA (APHA, 1998). An investigation was carried out by collecting thirty groundwater samples for Pre-monsoon season (PRM) February 2012 to May 2012 to decipher hydrochemistry and groundwater quality for determining its suitability for agriculture & drinking purposes. The results of analysis were compared with the water quality standards of Indian Standard Institute (ISI), and World Health Organization (WHO). The groundwater is neutral to alkaline in nature with pH ranging from 6.36 to 9.53. Higher electrical conductivity was noted in Kalamb, Khorochi, Nimsakhar villages. Residual sodium carbonate value indicates, 66% samples are not suitable for irrigation purpose. 40% samples are hard water and 37% are very hard water. High salinity of groundwater is recorded by 27% samples and such saline water affect on the quality and total production of agriculture. Groundwater in study area is not suitable for drinking purposes without conventional treatments.

Biography

Rajaram Dhok completed his M.Sc. from Shivaji University Kolhapur and MPhil from Madurai Kamraj University. He is working for Doctoral Studies in University of Pune. The topic of study is groundwater quality. He is Assistant Professor at Shardabai Pawar Mahila Mahavidyalaya, Sharnanagar, Baramati, India. He has published 10 research papers in reputed peer reviewed international journals and national conferences.

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