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Physiological effects of bioinoculant (*Novobac*) on growth and yield of vegetable Cowpea

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An experiment was conducted to study the physiological effects of a bioinoculant (*NovoBac*) on growth and yield of vegetable cowpea var.VBN 2. The morpho-physiological, biochemical, nutrio-physiological and yield parameters of cowpea were significantly influenced by the biostimulant. *NovoBac* seed treatment at 2g/kg + soil drenching at 500g/ha on 15 days after sowing (DAS) favourably influenced the plant height. A significant increase in the number of leaves and root length was recorded by *NovoBac* seed treatment at 2g/kg + soil drenching at 500g/ha on 15 DAS. The data on crop growth analysis also revealed the significant influence of *NovoBac* treatments. The physiological and biochemical constituents such as soluble protein content and the IAA oxidase enzymes activity were greatly enhanced. The yield and yield components such as days to 50 percent flowering, number of flowers per plant, number of pods per plant, fertility co-efficient, number of seeds per pod, pod weight per plant, pod length and hundred seed weight were significantly influenced by the biostimulant (*NovoBac*). The quality of seeds was also improved by this treatment through enhanced protein content. A close scrutiny of the data on correlation studies showed that pod yield was significant and positively correlated with the traits such as plant height, root length, leaf area index, leaf area duration, crop growth rate, dry matter accumulation, chlorophyll, soluble protein, IAA oxidase, uptake of NPK, bacterial population and soil dehydrogenase activity. It is concluded from the present study that *NovoBac* seed treatment at 2g/kg + soil drenching at 500g/ha on15DAS resulted in higher vegetable pod yield (6.22 t ha-1). However, considering the B:C ratio, *NovoBac* seed treatment at 2g/kg + soil drenching at 250g/ha on 15 DAS) was found to record higher ratio of 1: 2.26.

Biography

P. Jeyakumar has completed his M.Sc. (Agriculture) in Crop Physiology from Tamil Nadu Agricultural University (TNAU), Coimbatore and Ph.D. from Forest Research Institute (FRI), Dehradun, India. He has undergone postdoctoral training in postharvest physiology at McGill University, Canada and ARO Volcani Centre, Israel. He has received the Best Researcher Award from Tamil Nadu Agricultural University, Coimbatore and Eminent Scientist Award from National Environmental Science Academy, New Delhi. He has published more than 60 papers in reputed journals and presented many papers in International Conferences across the globe. Prof. P. Jeyakumar is serving as the Technical Editor of The Madras Agricultural Journal and as Research Coordinator, Department of Crop Physiology, TNAU, Coimbatore, India.

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