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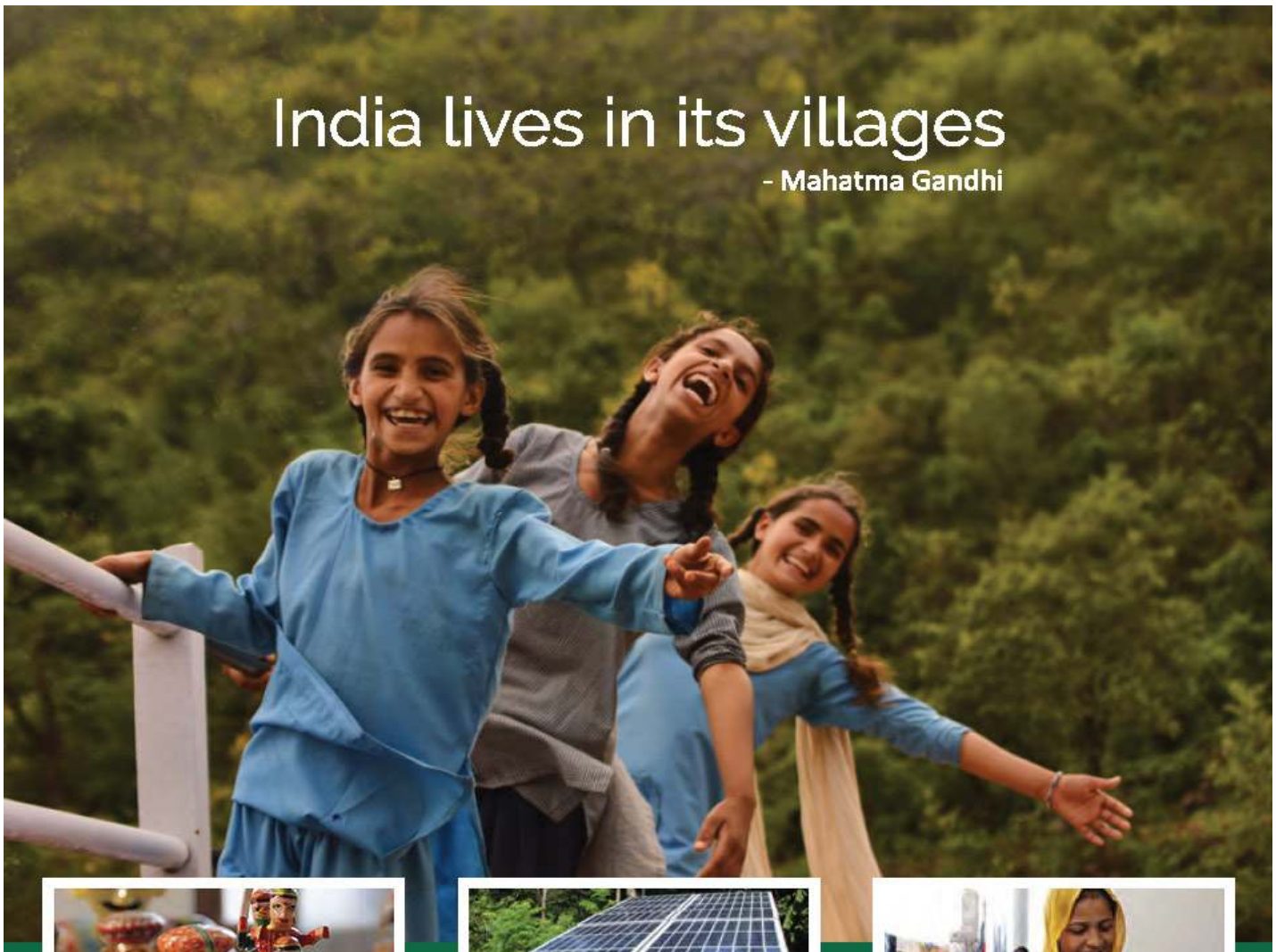
ABSTRACT BOOK

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PLANT GROWTH, PHYSIOLOGICAL PROPERTIES AND YIELD OF GINGER (ZINGIBER OFFICINALE) AS INFLUENCED BY PLANT GROWTH-PROMOTING BACTERIA

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ABSTRACT

Plant growth promoting bacteria (PGPB) promote plant growth and yield by producing phytohormone which increases the growth, yield and physiological traits of the host plant. A net house experiment was carried out at Institute of Genetics and Plant Experimental Biology, Uzbekistan Academy of Sciences, Kibray, Uzbekistan. In this study, the role of plant-growth promoting bacteria on plant growth, physiological properties and yield of ginger (Zingiber officinale) was investigated. The pot experiment was a completely randomized block design with five replications. Five PGPB strains (B. subtilis IGPEB 1,B. pumilis IGPEB 2, B. altitudinisIGPEB 8,P. koreensis IGPEB 17 and B.endophyticus IGPEB 33) were used in the experiment.

The results showed that plant-growth-promoting B. SubtilisIGPEB1,P. koreensis IGPEB 17and B.endophyticus IGPEB33significantly increased the plant height, leaf number, leaf length and leaf width as compared to the control treatment. Moreover, inoculation of B. endophyticusIGPEB33 treatment significantly enhanced the relative water content, chlorophyll a, chlorophyll b, total chlorophyll and carotenoid contents. Compared to the control, inoculation B. end ophyticus IGPEB 33 treatment significantly enhanced the fresh yield and dry yield in ginger. The results concluded that B. Subtilis IGPEB1,P. koreensis IGPEB 17andB.endophyticus IGPEB33strains positively influence plant growth, physiological traits and yield in ginger.

Keywords: Ginger; plant growth, total chlorophyll content, relative water content, yield.

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