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ORIGINAL PAPER

# *Chlorella* sp. Cultivation Using Parboiled Rice Effluent and Utilization of the Microalgae as Co-organic Fertilizer for Brinjal (*Solanum melongina*)

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## Abstract

**Purpose** *Chlorella* sp. was cultivated in the parboiled rice effluent without any other nutrient supplement and the potential of the biomass as organic fertilizer in combination with organic or inorganic fertilizers was studied.

**Methods** *Chlorella* sp. was cultivated in a raceway reactor for 14 days in parboiled effluent. A pot experiment with Brinjal (*Solanum melongina*) was conducted with combinations of either 50% organic (cow manure) or 50% inorganic fertilizer with *Chlorella* soil application or foliar application, sole organic or inorganic and control. An incubation experiment was also planned in parallel to measure the soil available nutrients. The growth and yield parameters in pot experiment were measured at regular intervals.

**Results** The incubation study revealed that *Chlorella* at 3 g $kg^{-1}$ gave similar available nitrogen as inorganic fertilizer, while improving available phosphorus and potassium. All the combination treatments of *Chlorella* gave similar or higher pod yield than the sole inorganic fertilizer treatment except the control.

**Conclusion** This study therefore, highlights the potential of *Chlorella* sp. grown in parboiled effluent as a complementary organic fertilizer.

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