

## DETERMINATION OF FERTILIZING CHARACTERISTICS OF THREE DIFFERENT MICROALGAE CULTIVATED IN RACEWAYS IN GREENHOUSE CONDITIONS

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### Abstract

Microalgal biomass is rich source of macro elements such as nitrogen, phosphorus, potassium, and calcium. The purpose of this study was to investigate the different algae availability as fertilizer in agriculture. Therefore, three different microalgae were selected for the experiment. *Chlorella* spp., *Neochloris conjuncta* and *Botryococcus braunii* cultures were grown in basal medium in the raceway which have the capacity of 1.5 tonnes. Experiment was ended when the required value of the number of cell was reached. Microalgae were harvested by a centrifuge in 6000 rpm. Wet mass of microalgae were dried in 65°C at oven. Nitrogen, phosphorus, potassium, calcium, magnesium, iron, manganese, zinc, copper, boron, and organic matter were measured. Nitrogen values for *Chlorella* spp, *Botryococcus braunii* and *Neochloris conjuncta* microalgae were measured 5.45, 6.01, and 5.49 %, respectively. Microalgae can be used as nitrogen sources for plant growth and development due to high nitrogen levels. The concentrations of potassium were measured as 1.34, 0.94 and 1.05%. Organic matters were measured as 67.24, 64.15, and 64.65% for *Chlorella* spp, *Botryococcus braunii* and *Neochloris conjuncta*, respectively. *Chlorella* strain is currently used for fertilization purpose. However, this study showed that *Neochloris conjuncta* and *Botryococcus braunii* can used as fertilizer, as well.

**Key words:** *Chlorella* spp., *Neochloris conjuncta*, *Botryococcus braunii*, fertilizer, microalgae

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