



# Psychrophilic Microalgae Cultivation in Outdoor Thin Layer Systems for High Value Products

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Psychrophilic microalgae is able to grow under 20 °C and generates high value compounds like polyunsaturated fatty acids and pigments. Therefore it owns the potential of off season cultivation for industrial application.

*Monoraphidium* sp. from Antarctica was cultivated outdoor in thin layer raceway pond from 02.11.2020 in a weather protected greenhouse for four weeks long. Three cultivation conditions were tested consequently after each other, e.g. natural illumination, natural and artificial illumination and nitrogen deprivation in mixed illumination. Photosynthetic oxygen evolution as well as two chlorophyll fluorescence techniques were used for monitoring the activity of the culture. Temperature, irradiance, pH, dissolved oxygen and carbon-dioxide concentration was monitored and recorded to describe the environment of the culture. Samples were collected for further analysis, e.g. fatty acid and pigment profile.

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