

## **Influence of Culture Conditions on the Growth and Fatty Acid Composition of Green Microalgae *Oocystis rhomboideus*, *Scenedesmus obliquus*, *Dictyochlorella globosa***

**Authors :** Tatyana A. Karpenyuk, Saltanat B. Orazova, Yana S. Tzurkan, Alla V. Goncharova, Bakytzhan K. Kairat, Togzhan D. Mukasheva, Ludmila V. Ignatova, Ramza Z. Berzhanova

**Abstract :** Microalgae due to the ability to accumulate high levels of practically valuable polyunsaturated fatty acids attract attention as a promising raw material for commercial products. It were defined the features of the growth processes of cells green protococcal microalgae *Oocystis rhomboideus*, *Scenedesmus obliquus*, *Dictyochlorella globosa* at cultivation in different nutritional mediums. For the rapid accumulation of biomass, combined with high productivity of total lipids fraction yield recommended to use the Fitzgerald medium (*Scenedesmus obliquus*, *Oocystis rhomboideus*) and/or Bold medium (*Dictyochlorella globosa*). Productivity of lipids decreased in sequence *Dictyochlorella globosa* > *Scenedesmus obliquus* > *Oocystis rhomboideus*. The bulk of fatty acids fraction of the total lipids is unsaturated fatty acids, which accounts for 70 to 83% of the total number of fatty acids. The share of monoenic acids varies from 16 to 36 %, the share of unsaturated fatty acids - from 44 to 65% of total fatty acids fraction. Among the unsaturated acids dominate  $\alpha$ -linolenic acid (C18:3n-3), hexadecatetraenic acid (C16:4) and linoleic acid (C18:2).

**Keywords :** microalgae, lipids, fatty acids, culture conditions

**Conference Title :** ICEBESE 2014 : International Conference on Environmental, Biological, Ecological Sciences and Engineering

**Conference Location :** Paris, France

**Conference Dates :** June 26-27, 2014