Abstract: Introduction<br>
Lindner’s group in Germany during World War I were conducted first trials on the commercial production of microbial oil. Microorganisms that, accumulate lipids more than 20% of their biomass are called oleaginous microorganisms and among them fungi are the best group of valuable fatty acids producers. Microbial lipids has been considered due to the microorganisms cheap and easy growth conditions, high growth rate, safety and production of valuable and different lipids with good physiological functions in human body. In this study, the efficiency of total lipid production was investigated by Mucor hiemalis PTCC 5292 in different media cultures.<br>

Method<br>
M.hiemalis was grown on PDA at 25°C for 7 days. 1 x 10⁷ spores were inoculated on 50 ml of media A (glucose, yeast extract) or B (glucose, yeast extract and different mineral salts) in 250 ml Erlenmeyer flask. The media cultures were grown at 25°C with shaking at 150 rpm for 72h. Total lipid, dry biomass, glucose and pH measured at 24, 48, 72 and 96h. Lipid extraction of mycelia were according to the modified procedure of Bligh and Dyer (2009).<br>

Result<br>
The total lipid content of media A and B were 41% and 58% respectively. Maximum production occurred in 72h. Glucose and pH curves along the time confirmed our results.<br>

Conclusion<br>
The results showed that, media B was more suitable for lipid production comparing to media A and high yield of lipid production in 72h. By extended research the total lipid production in M.hiemalis is optimized. In addition, the fatty acid profile and it’s quantity is investigated.