Title:

Wastewaters – source of nutrients for microalgae cultivation

Authors & affiliations:

Miroslav Kajan

[1] Czech biogas association, Na Zlaté stoce 1619, 370 05 České Budějovice (E-mail: aqua@trebon.cz)
[2] Městská Vodohospodářská s.r.o., Palackého nám. 46, 379 01 Třeboň
[3] Institute of Microbiology, CAS, 379 01 Třeboň, Czech Republic

The advantages of mineral fertilizers used for algae cultivation over wastewaters are in high concentration of nutrients, stable nutrient content, small storage capacities , no problem with delivery. And what is important, they are certified - composition, content of impurities (heavy metals).

When using other nutrient source then it should not contain compounds toxic for algal growth or compounds accumulating in them and devaluing the product and/or other algal biomass uses (HM, PCB, medicaments, etc).It should ideally have the same ratio and concentrations of nutrients as required by growing algae. Waste water source should be close to the production site and should be producing wastewaters at least during the algae cultivation season.

Even though there are nutrients in waste water and no one wants it, its use for algal cultivation is not necessarily free because it has to be transported to the consumption site, it might require adjustments (pH, addition of nutrients, mixing, dilution, sterilization (UV)), it has to be stored etc.

These represent significant investment (capital) and operating expenses which should be evaluated by cost assessment for each project.