

# ABSTRACT BOOK



## 2<sup>nd</sup> INTERNATIONAL EURASIAN CONFERENCE ON SCIENCE, ENGINEERING AND TECHNOLOGY (EurasianSciEnTech 2020)

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Gaziantep / Turkey

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### ➤ ORAL PRESENTATION

#### **The biodegradability of dissolved organic nitrogen in cheese production wastewaters**

Sezen Küçükçongar<sup>1\*</sup>, Zehra Gök<sup>2</sup>, Muhammed Kamil Öden<sup>3</sup>, Şükrü Dursun<sup>1</sup>

<sup>1</sup>Konya Technical University, Department of Environmental Engineering, Konya, Turkey

<sup>2</sup>Selçuk University, Construction Technology Programme, Silifke-Tasucu V.H.S., Mersin, Turkey

<sup>3</sup>Selçuk University, Department of Environmental Protect Technology, Sarayonu V.H.S., Konya, Turkey

\*Corresponding author e-mail: [skucukcongar@ktun.edu.tr](mailto:skucukcongar@ktun.edu.tr)

#### **Abstract**

Domestic and industrial wastewaters are important source for nutrient loading to aquatic environments. Dissolved nitrogen in wastewaters includes inorganic (ammonia, nitrite and nitrate nitrogen) and organic forms. Recent studies indicate that dissolved organic nitrogen (DON) represents a significant portion of the total dissolved nitrogen (TDN) in WWTPs's effluent and generally ranging from 25% to 80% of the effluent TDN. Because of its complexity, DON may act as a nitrogenous disinfection by-product precursor, a nutrient for bacterial, algal growth and consume dissolved oxygen in the receiving waters. DON can participate in reactions that lead to membrane fouling, eutrophication and other nitrification issues. As a result of these concerns, management of DON is important issue for wastewater treatment. Biodegradable DON (BDON) is a portion of DON that can be mineralized by an acclaimed mixed bacterial culture. In this study, dissolved nitrogen species (Kjeldahl, ammonia, nitrite and nitrate nitrogen) were analyzed before and after 28-day incubation procedure for to determine the biodegradability of wastewater samples obtained from cheese production industry. DON values were determined between 293.2-313.2 mg/L and the biodegradability of wastewater samples were determined by using a mixed bacteria culture and identified between 19.1-20.1% for cheese production wastewater. BDON/TDN ratio was found in 16.5-17.5% ranges for cheese production wastewaters.

**Keywords:** Dissolved organic nitrogen (DON), biodegradable dissolved organic nitrogen (BDON), cheese production wastewater.

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