



**“Gheorghe Asachi” Technical University of Iasi, Romania**



---

## **MUNICIPAL SOLID WASTE CHARACTERISTICS AND MANAGEMENT IN SINOP, TURKEY**

**Nurdan Gamze Turan<sup>1\*</sup>, Oylum Gökkurt Baki<sup>2</sup>, Osman Nuri Ergun<sup>1</sup>**

<sup>1</sup>*Department of Environmental Engineering, Ondokuz Mayıs University, 55139, Samsun, Turkey*

<sup>2</sup>*The Faculty of Fisheries, Sinop University, 57000, Sinop, Turkey*

---

### **Abstract**

This paper presents municipal solid waste (MSW) responsibility and management structure in Sinop, Turkey together with the current situation of collection, recycling, transport and disposal of MSW. In order to examine the MSW management, a long-term study was conducted between 1994 and 2010. In this study, physical composition of MSW was determined. Proximate analysis (moisture content, density and calorific value) and ultimate analysis (carbon, hydrogen, oxygen, nitrogen, sulfur and ash) of the MSW were also done. Based on the survey results, an integrated MSW management plan is proposed and presented. In Sinop, a mean of 175 tons of MSW are generated each day or 1.71 kg/day/capita. Approximately 50% of the MSW generated were collected, and the mean density of these is 162 kg/m<sup>3</sup>. MSW in Sinop has high moisture content and low calorific value, making aerobic composting the best treatment strategy. Composting can help to divert more than 60% of the total waste and will lead to enormous savings in cost of waste collection, transport and disposal. The remaining waste can be disposed off in a sanitary landfill.

*Key words:* developing countries, solid waste management, Turkey, waste characteristics

*Received: March, 2012; Revised final: October, 2012; Accepted: November, 2012*

---

---

\* Author to whom all correspondence should be addressed: e-mail: [gturan@omu.edu.tr](mailto:gturan@omu.edu.tr); Phone: +90 3623121919 (exp.1329); Fax: +90 3624576094