5th World Bioenergy Congress and Expo

June 29-30, 2017 Madrid, Spain

Quality of organic amendment obtained from organic waste fraction in old landfill

Khalid Fares, Bouchra Bouftila, Khadija Zakri, Nabila Saadaoui, Sabira Benmoussa and Maroua Ait Tastift Cadi Ayyad University, Marrakech, Morocco

18 000 tons of solid household wastes are produced daily in Morocco and joined generally the dump sites which reach the optimal capacity and needs therefore to be closed through rehabilitation programme. Morocco has recently undertaken a vast controlled landfill construction program and rehabilitation of old dumps. This rehabilitation is based mainly on the land filling of all wastes and construction of green spaces without any recycling or valorization of the organic part of these wastes which may constitutes a big proportion. The present work aims to determine the physicochemical and microbiological characteristics of organic substrates in the old landfill in order to use it as an organic amendment. Three samples of 100 kg each were taken from the landfill of Sidi Bennour, sieved later and the organic substrates fraction (OSF) was analyzed chemically and microbiologically. The OSF represents 65% in weight. This OSF was stable and hygienic especially when sugar beet lime sludge (SBLS) is added: the pH value was reduced to 8.4, the C/N ratio to 12 and no microorganism pathogen was detected. The concentrations of heavy metals were lower than the limit values recommended. The germination test using aqueous extracts of the OSF showed no phytotoxicity for all plant tested. Tests on radish crop showed the lack of any toxicity and gave a good production yield. The addition of sugar beet lime sludge to the OSF and the reuse of this substrate as organic amendment could be considered as sustainable solution for the rehabilitation of the old landfill.

Biography

Khalid Fares is a Professor, Teacher and Researcher at Cadi Ayyad University (Department of Biology), Marrakech, Morocco. He is the Head of Biochemistry and Biotechnology of Plants Unit, President of the "Federation of African Societies of Biochemistry and Molecular Biology" (www.fasbmb.org.za) and Former President of the "Moroccan Society of Biochemistry and Molecular Biology" (www.mobsa.org) as well as many professional bodies. He is also Reviewer for *European Journal of Agronomy, Carbohydrate Research, Annals of Applied Biology, Journal of Agricultural and Food Chemistry and Acta Agriculturae Scandinavica*. His research in the field of Food Science and Biochemistry as well as the valorization of waste was published in several journals and communicated in many international congresses. He was the organizer of many international meeting and congresses.

fares@uca.ac.ma

Notes: