

# Agriculture & Food Chemistry

July 23-24, 2018  
Rome, Italy

Nurgül Kitir, J Food Nutr Popul Health 2018, Volume 2  
DOI: 10.21767/2577-0586-C2-005

## EVALUATION OF SOME LEONARDITE SOURCES IN TURKEY FOR BIOLOGIC HUMIC PRODUCTION VIA BIOTECHNOLOGICAL METHOD FOR ORGANIC FARMING USAGE

**Nurgül Kitir**

Konya Food and Agriculture University, Turkey

**N**owadays, the developing countries became follower of the developing countries and accepted the strategies based on obtaining economic and optimum products via efficient usage of agricultural technology. In these strategies the main target is to increase the production amount and due to these strategies, the sustainability of biodiversity and natural balance aren't taken into account and usage of chemical inputs without control cause a lot of problems in short and long terms. In the study leonardite samples were taken from different leonardite deposits and the quality of ores were determined and from these ores of Adana Tufanbeyli, Turkey was selected due to best properties and bioleaching method was applied to obtain biotechnologically produced humic acid and to determine the leaching ratio. California method was used as standard method. To optimize the best conditions for maximum and economic bioleaching several leonardite ore and microorganism solution rates of 20, 30, 40, 50, 60, 70%, several media pH of 6.5, 7.0, 7.5, 8.0, 8.5, different efficiency durations of 1, 2, 3, 4, 5, 6, 7 days and different temperature conditions 10, 20, 30, 45, 50°C were tested. As a result of the study the most efficient pH 8.5, fermentation degree at 45°C, 40/60% ore/bioleaching solution and 4 days incubation duration were determined. The stabilized product was tested in field conditions at 0, 30, 60, 90 and 120 L/Ha dosages in tomato in Bursa Karacabey, Turkey. The divided parcels randomized to two sources as standard and biologic humic acid, five application dosages and three

repeats and for each plant 30 repeats were done. As a result of the study, the most appropriate dosages in biologic humic acid were determined for tomato was 83 L/Ha and compared with standard humic acid the yield increase were determined as 24.5%. Due to this increase in yield, the determined macro and microelement, organic and amino acid, hormone, hydrogen peroxide and antioxidant enzyme contents, this product has a good potential to use in organic farming as fertilizer.

### Biography

Asst. Prof. Nurgül Kitir In 2008, she graduated from Ankara University, Faculty of Agriculture, Department of Horticulture, as Agricultural Engineer. She has worked and studied in several countries as George August University and Kassel University in Germany and Aristotle University and NAGREF (National Agricultural Research Foundation) in Greece related with scientific research groups. At Yeditepe University, she has completed her master's degree in Biotechnology with her graduate thesis titled "Assessment of Toxicity of Various Carbon and Boron Nanotubes on Wheat and Barley Germination" in 2014 with honour degree. In 2017 "Evaluation of Some Leonardite Sources in Turkey for Biologic Humic Production via Biotechnological Method For Organic Farming Usage" on "Yeditepe University with a high honour degree she received Doctor title by completing her PhD in Biotechnology program. She is currently working in Turkey, Konya Food and Agriculture University, Agriculture and Natural Sciences Faculty, Plant Production and Technologies Department.

nurgul.kitir@gidatarim.edu.tr