Isolation of Natural Colorant Producing *Aspergillus niger* from Soil and Extraction of Pigment

***Maria Afroz Toma [1], Md. Muket Mahmud [2], Pravin Mishra [2], Md. Kowser Ali [1], Ajran Kabir [2], Md. Ahosanul Haque Shahid [2], Md. Abdul Alim [1], K H M Nazmul Hussain Nazir [2]**

[1] Department of Food Technology & Rural Industries, Bangladesh Agricultural University, Mymensingh, Bangladesh
[2] Department of Microbiology & Hygiene, Bangladesh Agricultural University, Mymensingh, Bangladesh
Correspondence: Maria Afroz Toma- matomaftri@bau.edu.bd (https://orcid.org/0000-0001-5892 030X)

Abstract: This study was conducted to isolate colorant-producing *Aspergillus niger* from the soil for its potential use to extract natural colorant for food production. A total of 14 soil samples were collected from Madhupur National Park at Madhupur Upazila under Mymensingh district. The Aspergillus niger was isolated and identified from the soil samples by following conventional mycological methods, followed by confirmatory identification by a polymerase chain reaction using specific oligonucleotide primers. For pigment production, a mass culture of *A. niger* was done in Sabouraud Dextrose Broth in shaking conditions for seven days. The biomass was subjected to extraction of the pigments following ethanol-based extraction methods. The extracted colorant was then concentrated using a rotary evaporator to obtain the pigments. An *in vivo* experiment was done with mice to assess the toxicity of the pigments. The extracted pigments were used to make cookies and lemon juice. *A. niger* could be isolated from three samples. The yield of pigment from A. niger was 0.75% (w/v). This is the first attempt to use *A. niger* isolated from soil samples for successful food production in Bangladesh. The fungal pigments can be used in the emerging fields of food and textile industries in Bangladesh.

Keywords: Natural colorants; Filamentous fungi; *A. niger*; PCR