

2nd World Chemistry Conference

August 08-10, 2016 Toronto, Canada

HPLC–UV method development and validation for the determination of low level formaldehyde grown culture mushrooms in Turkey

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Mushrooms are important nutritional source for people health. 73% of people consume mushroom in Turkey. Under favor of, climate and soil conditions, many of the mushroom kinds grow up in Turkey. Formaldehyde is used in some processes of mushroom agriculture and harvesting. These processes are incubation, sterilization of cover soil and reusage preparation processes of compost soil. Formaldehyde is colorless and burnable gas. International Agency on Cancer (IARC) categorizes formaldehyde as a group carcinogenic matter. In this work, formaldehyde amount analyzed by HPLC, originated from mushroom consumption. After the preparation of different concentrations formaldehyde solutions, calibration curve was created. Extract of muddy and clean mushrooms and washing water of mushrooms injected to HPLC with 2,4-Dinitrophenylhydrazin (DNPH) derivation. The amount of formaldehyde in samples calculated with using linear calibration graph and peak areas. After the calculations, the maximum concentration is 0.981 ± 0.012 mg formaldehyde kg^{-1} wet mushroom and the minimum concentration is 0.309 ± 0.002 mg formaldehyde kg^{-1} wet mushroom. Experimental outcomes compared with literature data and it shows they behave similar.

Biography

Dilek Ozyurt has completed her PhD from Istanbul Technical University in 2014 and received best PhD thesis award. She is a Research Chemist in the same university. Her research subject is determination of antioxidants method. She has published 14 papers in international journals.

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