STUDY OF CIGARETTE SMOKE EXPOSURE MODEL ON HEAVY METAL CONTENTS OF FLOUR-COATED FRIED FOODS

Uswatun Hasanah and Sukarno
Department of Food Science and Technology, Faculty of Agricultural Technology, Bogor Agricultural University, IPB Darmaga Campus, PO BOX 220, Bogor, West Java, Indonesia
Phone: +62 852 17998454, E-mail: uswah19@gmail.com

ABSTRACT

Fried food (gorengan) is a kind of food that processed by frying. These foods are the most preferred snack in Indonesia. Factor that increase the risk of fried foods to be consumed is the presence of contaminants. Heavy metal contamination on fried foods that are sold roadside can also be derived from cigarette smoke due to smoking behavior of sellers. The purposes of the research are to study the effect of cigarette smoke exposures on heavy metal content of flour-coated fried foods, and to study the relationship between the amounts of cigarette smoke exposures with heavy metal contents of fried foods. The research consist of four stages: preliminary study, production of flour-coated fried foods for samples, cigarette smoke exposures on samples, and analysis of heavy metal contents. Preparation of samples for analysis were done by wet ashing method. Heavy metal contents (Cd, Pb, As, Co, and Cr) were analyzed by using flame Atomic Absorption Spectrophotometer. Cigarette smoke exposure were done by using cigarette filter A with amount of 1, 6, and 12 cigarettes. The results proved that cigarette smoke exposure cause heavy metal contamination on flour-coated fried foods. Increase in amount of cigarette smoke exposure cause bigger amount of heavy metal contamination on flour-coated fried food. Cigarette smoke exposure caused the heavy metal content of fried food exceed its maximum limit according to SNI 7387:2009 (Pb for 6 and 12 cigarette smoke exposure). Estimated consumption of heavy metals from fried foods are still below Acceptable Daily Intake, but the accumulation effects should still be considered as hazard for humans health.

Keywords: fried food, cigarette smoke, heavy metal