

## **Assessment of radiation effective dose from lung cancer screening pilot project in Institut Kanser Negara: a preliminary finding**

### **ABSTRACT**

The aim of this study is to evaluate effective dose received by participants from Lung Cancer Screening program in Institut Kanser Negara (IKN), Putrajaya. This retrospective study was performed between April 2016 – December 2016 where all scanning acquisition protocols and dose information from forty (40) participants were recorded and investigated. The screening process involves two types of imaging technique, the Dual Energy Subtraction (DES) Chest Xray and Low-Dose Computed Tomography (LDCT) imaging technique. Participant's effective dose (ED) from DES and MSCT were analysed by using PCXMC (Version 2.0, Finland) and CT-EXPO (Version 2.3, Germany) software, respectively. It was observed that the mean ( $\pm$ SD) value for DES (at 60 kV), DES (at 120 kV) and MSCT examinations were  $0.006 \pm 0.005$  mSv,  $0.018 \pm 0.005$  mSv and  $1.558 \pm 0.129$  mSv, respectively. In a whole, the total cumulative ED values for participants were ranged from 1.376 mSv to 1.986 mSv. It was summarized that both optimized techniques were useful for screening needs and the ED value from this study were lower when compared to other established reference.

**Keyword:** Amylase activities; Dietary fibre; Growth performance; Hybrid lemon fin barb; Leaf meals