Chicken meat and liver are important for human diet because they provide a great part of nutrients (protein, lipids), including necessary minerals and trace elements. Accumulation of toxic metals in chicken liver, a rich natural source of essential elements, can present health risks to regular consumers of liver. Fe, Cu and Mn are the essential metals which are required in small quantities and occur naturally in various vegetables and meat foodstuffs. However, those essential metals are given special attention due to their toxic effect in the body when their concentrations exceed limits of safe exposure. Toxic metals contaminate the environment and enter the food chain. Contamination with these metals is serious threat because of their toxicity and bioaccumulation in the food chain [1-4].

Since the consumption of chicken and chicken products are high in Turkey and moreover metals are mainly deposited in liver, the determination of mercury, copper, lead, cadmium, iron and manganese levels in chicken liver is of great importance. For this purpose, chicken livers (six brands) were collected from different markets in Izmir, Turkey. Subsequently the content of Cu, Pb, Cd, Fe, and Mn in the liver samples was determined by flame atomic absorption spectrometry (FAAS) and mercury was determined by cold-vapor atomic fluorescence spectrometry (CVAFS) [5] after digestion. For the sample decomposition, one gram of each sample was dried at 100 °C in an oven, weighed again and then digested with 5.0 mL of HNO₃ (65%) and 5.0 mL of H₂O₂ (35%) in vessels placed in a water bath at 100 °C. The mixtures were evaporated to near dryness. Then, the residue was dissolved and diluted to 25.0 mL with distilled water. A blank digest was carried out in the same way.

Trace element content in chicken livers were found to be in the range of 102.3–140.9 mg kg⁻¹ for manganese, 26.4–50.4 mg kg⁻¹ for copper, 13.6–13.6 mg kg⁻¹ for lead (LD:10 mg kg⁻¹) and BLD for cadmium (LD:1.50 mg kg⁻¹). Levels of iron were the highest (205.2–360.6 mg kg⁻¹) in the liver samples examined. The mercury concentration was found to be 107.2–402.1 μg kg⁻¹.

REFERENCES: