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Monitoring on the migration of formaldehyde in melamine utensils and containers

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Melamine resin is widely used as kitchenware. It is formed by condensation reaction of melamine and formaldehyde. It is required to manage for safety, because unreacted formaldehyde in melamine resin migrates into food. Accordingly, this study was to investigate the migration of formaldehyde in four simulants(Water, 4% acetic acid, 20% ethanol, n-heptane). A total of 200 samples were purchased from local market in Korea. The levels of formaldehyde in simulants were analyzed quantitatively and qualitatively by HPLC(UV). Method validation was performed by determining linearity, limit of quantification(LOQ) and recovery. The method presented good linearity over the range assayed 74.6-1865 ug/L and the LOQ ranged from 0.11 to 4.93 ug/L, respectively. Recovery was above 95% for four simulants. As a result of monitoring, formaldehyde is within the Korea Food and Administration standard(4.0 mg/L) in four simulants. Among the four simulants, the migration into 4% acetic acid was the highest and most of the migration into n-heptane was not detected. According to this study, it could be conclude that formaldehyde level of melamine resin was safe to use for kitchenware.

Biography

Mi-kyoung An took a college course in food and nutrition from Duksung Women's University. She has completed her master's degree in food and technology at the age of 26 years from Dongguk University. She is currently serving as scientific researcher at Korea Food and Drug Administration(KFDA) and handling all of the standard and specifications of food.

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