

Determining the Geographical Origin of Beer Using Isotopes and Multielements

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The development of effective and reliable analytical methods is of primary importance to determine the geographical origin of beer, which is a mixture of various organic compounds that differ in their origin. Beers imported to south Korea from a variety of countries were analyzed for carbon, oxygen, and strontium isotopes, and multielemental contents. Analysis of the data enabled discrimination among the beers based on their geographical origin over four continents (America, Australia/Oceania, Asia, and Europe). Five elements (S, Li, Cr, Ni, and Sr) and three isotopes ($\delta^{13}\text{C}_{\text{DIC}}$, $\delta^{18}\text{O}$, and $^{87}\text{Sr}/^{86}\text{Sr}$) were particularly useful for distinguishing the beers. The results of this study should facilitate the determination of the geographical origin of various foods containing complex components.