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Biogenic amines in ready-to eat foods and alcoholic beverages

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Biogenic amines (chiefly histamine, tyramine, putrescine and cadaverine) are present in many foods and beverages, although their concentrations vary widely. High levels of biogenic amines can occur in fermented food products (seafood, cheese, sausages, vegetables, seasonings) and alcoholic beverages (wine and beer) as the results of high and uncontrolled microbial enzymatic activity. Although some biogenic amines (polyamines such as putrescine, cadaverine, spermine and spermidine) are important in many physiological processes, a high daily intake of biogenic amines, particularly histamine and tyramine can produce toxicological effects in humans. The highest histamine content is produced in decomposed and spoiled dark-muscle fish and fermented food products. High histamine content in fish products (>200 mg/kg) can cause histamine poisoning (scombroid poisoning). On the other hand, food intolerance and food induced migraines are associated with the consumption of moderate or low daily amine intake in susceptible individuals. In such individuals, the metabolism of histamine and tyramine is slowed down due to genetic factors, certain diseases, drug intake (antidepressants, MAO-I and DAO-I drugs) and intake of potentiators (alcohol and tobacco smoke). Interestingly, the typical symptoms of histamine poisoning, histamine/tyramine intolerance and allergy to food products are similar (headache, rhinitis, diarrhoea and tachycardia). The selective avoidance of biogenic amine-rich foods is the universal treatment for sensitive consumers. Since histamine/tyramine intolerance is a growing problem, certifying manufactured products as histamine-free or histamine-low, would undoubtedly benefit sensitive individuals. It is also important to stress that biogenic amines are not destroyed by cooking, freezing or canning which suggests the importance of applying the HACCP safety system.

Biography

Ljerka Prester is working as a Senior Research Associate at Institute for Medical Research and Occupational Health, Croatia. Her experience includes various programs, contributions and participation in different countries for diverse fields of study. Her research interests reflect in her wide range of publications in various national and international journals.

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