Influence of Processing Method and Non-Destructive Technique to Evaluate Green Tea Quality Using Electronic Nose

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Abstract

Green tea with a mellow taste has become increasingly popular to consume because of its perceived health effects. Aroma is a critical indicator of green tea quality. Commonly, evaluation of tea quality conducted through expert human sensing has some limitations including subjective evaluation and unknown aroma formation mechanism. This review aims to determine the effect of fixation and drying on the quality of green tea, and to observe changes in aroma formation during green tea processing. Some studies have found that green tea quality is affected by fixation and drying method including instrument, temperature, and time. Common fixation methods are fan-frying, steaming, and baking at different temperatures (200 to 300 ^{0}C) and time (2 to 15 minutes). Several drying methods such as hot air drying (oven/drum), super-heated steam, vacuum drying, microwave, and microwave vacuum have been studied with different temperatures and times ranging from 65 to 175 ^{0}C and 5 to 120 minutes, respectively. However, there are no reports on optimization for each process. Electronic nose is a non-destructive technique that can be used to monitor tea quality based on aroma and volatile organic compounds rapidly, user friendly, and low cost.

Keywords: Aroma, Electronic nose (enose), Green tea, Non-destructive technique.

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