Improving the quality of green tea in acceptability of taste and monitoring aroma compounds using electronic nose

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Abstract

The taste and aroma of tea which is refreshing as well as rich in health benefits make green tea become second-ranked tea beverage after black tea. Bitterness and astringent taste, although not favorable for many consumers, and aroma including clean, fresh, and chest-nutty aroma are quality characteristics of green tea. Those are affected by phenolic compounds (phenolic acids, flavonoids, and tannins) and alkaloid (methylxanthines) content which is influenced by planting, processing, and storage. Tea processing plays an important role in the phenolic composition, as well as some compounds are degraded during this process. This paper aimed to identify the characteristics of green tea from many countries, optimize green tea processing (withering, fixing, rolling, and drying) to improve the quality, and evaluate aroma compounds using an electronic nose (e-nose). The parameters measured are physical parameters (moisture content, color, texture, and tenderness), chemical properties (catechin, polyphenols, amino acid, caffeine, and antioxidants), and sensory evaluation. New techniques in the processing are expected to reduce the bitter and astringent taste and increased the palatability of green tea. Enose is a non-destructive technique that can be evaluated the composition of gases that were related to the physicochemical properties as well as distinguished aroma compounds rapidly.

Keywords: Astringency, Bitterness, Catechin, Electronic nose (e-nose), Green tea.

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