

Title Storage ascorbic acid contents and scavenging activity of persimmon leaf tea by manufacturing process

Author Y. Tsurunaga, C. Okishima, H. Hayashi, R. Masahiro, and Y. Takabayashi

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Abstract

Persimmon (*Diospyros kaki* Thunb.) leaves, calyxes, and branches have long been used in Chinese medicine to stop hiccups and coughing. Because of the abundance of ascorbic acid and polyphenol in persimmon leaves, its consumption as tea and health foods has been increasing in Japan. However, the ascorbic acid and polyphenol contents in persimmon leaf tea are affected by the manufacturing process. We investigated to determine an effective manufacturing process for persimmon leaf tea that retained the antioxidant compounds. We used persimmon leaf collected during May from 14-year-old orchard grown Japanese persimmon 'Saijo' trees. The raw persimmon leaves were washed with tap water and spin-dried to remove surface water. The leaves were divided into approximately 300 gram lots and then steamed for 0, 1, 3, 5, or 10 min. After steam treatment, persimmon leaves were air-dried at 60°C in a spontaneous convection oven. We then examined for ascorbic acid and DPPH radical scavenging activity in persimmon leaf tea at both right after the manufacturing process and then after storage at room temperature for one year. While the level of ascorbic acid and DPPH radical scavenging activity of non-steamed tea was 3,300 mg/100 g DW and 510 µmol eq./g DW after air drying, after storage for one year they were zero and 370 µmol Trolox eq./g DW, respectively. On the other hand, for leaves steamed for 5 min the levels were 4,700 mg/100 g DW and 450 µmol Trolox eq./g DW after air drying, and then after storage for one year they were 3,000 mg/100 g DW and 450 µmol Trolox eq./g DW, respectively. We concluded that 5 min steaming treatment of May harvested persimmon leaves was an effective manufacturing process that produced persimmon leaf tea containing high levels of ascorbic acid and DPPH radical scavenging activity, even after one year storage.