

Volatile Compounds and Sensory Characteristics of Herbal Teas and Bush Tea Blends with Selected Herbal Teas South Africa

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Abstract : Rooibos (*Aspalathus linearis* (Burm.f.) R.Dahlgren), honeybush (*Cyclopia* Vent. species), bush tea (*Athrixia phylicoides* DC.) and special tea (*Monsonia burkeana*) are traditionally consumed herbal teas in South Africa. The volatile and sensory qualities of rooibos and honeybush tea have previously been described although there is a dearth of information regarding the sensory attributes and volatile compounds analysis of special tea and bush tea. The objective of this study was to describe the sensory properties, compare the differences in descriptive sensory analysis (DSA) and volatile compounds of bush tea, special, rooibos, honeybush and the blend of bush tea with special, honeybush and rooibos in a 1:1 ratio and subsequently to determine the influence of blending bush tea with other herbal teas. DSA was used to assess the sensory attributes of the teas while gas chromatography-mass spectrometry (GC-MS) was used to quantitatively determine the volatile components of the teas. Rooibos tea and honeybush tea had an overall sweet-caramel, honey-sweet, perfume floral and woody aroma with slight astringency, consistent with the taste and aftertaste attributes. In contrast, bush tea and special tea depicted green-cut grass, dry green herbal, cooked spinach aroma as well as taste and aftertaste characteristics. GC-MS analyses revealed that the seven tea samples had similar major volatiles, including 2-furanmethanol, 2-methoxy-4-vinylphenol, acetic acid, D-limonene terpene and phytol. Cluster analysis revealed that the sweet and woody flavour of honeybush and rooibos were ascribed to the presence of α -myrcene, phenylethyl alcohol, phytol and vanillin. The bitter, medicinal flavour attributes of special tea were attributed to (-)-carvone. Blending of bush tea with rooibos and honeybush tea toned down its aversive flavour components, typically the bitter, green-cut grass and herbal properties, thus minimising the possibility of consumer aversion.

Keywords : bush tea, rooibos tea, honeybush tea, sensory, volatile compounds

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