

**DETERMINATION OF THE EFFECT OF WATER
QUALITY ON THE SENSORY PROPERTIES OF TEA
LIQUOR**

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ABSTRACT

Tea is a worldwide aromatic beverage which is demanded by consumers because of its unique taste, color and aroma known as sensory properties of tea liquor. These sensory properties of tea liquor are influenced by several factors including quality of raw materials, manufacturing conditions, processing techniques, brewing techniques, grade and etc. The major ingredient of beverage tea is water and therefore water used to brew tea can be effected for its sensory properties. This study was therefore, conducted to find out whether there is an effect of water quality on tea liquor properties by analyzing some most important water quality parameters namely total hardness, total alkalinity, pH, electrical conductivity and total dissolved solids contents of water and to develop a profile of suitable water for brewing of tea comprised with optimum ranges of these water quality parameters. In this view, ten water samples were obtained from ten DS divisions of each Matara, Colombo, Ratnapura, Puttalam, Anuradhapra and Kandy districts. This study was conducted in two steps; a sensory evaluation of teas of DUST 1 grade prepared with different water was conducted by trained panelists and a water analysis to determine the contents of selected water quality parameters of collected water samples. As it can be seen from the results of water analysis, values for all the selected water quality parameters within districts as well as among districts were varied significantly. Therefore, it is evident that the water quality in terms of these parameters is varied within a district as well as among districts substantially. Puttalam, Anuradhapura and Kandy districts showed considerably high total hardness, total alkalinity, conductivity and total dissolved solids than that of other districts and phenolphthalein alkalinity was negligible. Results of sensory evaluation conclude that the area used to obtain water for brewing of tea has a significant effect on the sensory properties of tea liquor. According to the Pearson's correlation test, there is a noteworthy negative relationship between total hardness, electrical conductivity and total dissolved solids contents of water and tea liquor properties, yet the relationship between pH and total alkalinity parameters with tea liquor properties is insignificant. Therefore, liquor properties of tea are affected by water quality in terms of water hardness, conductivity and total dissolved solids. Approximately, total hardness of 25-218 ppm, electrical conductivity of 5.45-86 $\mu\text{s}/\text{cm}$ and total dissolved solids of 3.27-51.6 ppm ranges are preferable for brewing of tea.

Key Words: water quality, Tea liquor Properties, Water quality parameters