

Assessing the steps of black tea process for its quality enhancement using the response recording of a resistive gas sensor

Masoumeh Saeedi Mirakmahaleh*, Dr. Seyed mohsen hosseini-golgoo,

Tea is an economic plant and, after water, is the second most popular drink which is consumed in Iran and some other countries. Black tea is the most common form used by human. In the conversion process of tea green leaves to black tea, the fermentation is one of the important processes in which interactions and chemical reactions occur on the green leaves. During this process, with the passage of time, the vegetation and grass smell of green leaves change to floral smell and its green color turns to brown or copper. For tea factories owners, recognition of the appropriate time for completion the fermentation of black tea is crucial, because a few minutes earlier or later end to the process of fermentation, would be leading to loss of quality of the final product tea. Since, in these factories, proper fermentation time is detected by the human expert and in use of breathe, so this procedure is not sufficiently accurate for reasons of fatigue, mood and personal differences. In this research, we utilized a resistive gas sensor to determine the appropriate time for completion of fermentation. To this end, the fermentation stage were tested on green leaf harvested the north orchards of the country, in two region of the Lahijan and Roudsar, and of the Chinese hybrid type during the spring, summer and fall. Tea manufacturing was performed in the usual way in Iran (orthodox). The results of the best fermentation times extracted response recording of a resistive gas sensor were highly consistent with that of the smell and sensory test reviewed by tea research center experts.

Keywords : Resistive gas sensor, Tea green leaves, Black tea, Fermentation, Tea quality

