

EFFECT OF WEIR HEIGHT OF STEPWISE FLUIDIZED BED DRYER-3 ON OUTPUT AND QUALITY OF MADE TEA

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The thickness of tea bed is controlled by the weir height of each drying section of Stepwise Fluidized Bed Dryer-3 (SFBD-3). The sectional weir heights of SFBD-3 are important to regulate output of the dryer and quality of made tea. A commercial scale study was carried out to determine the appropriate weir height for each section to achieve better output with good quality made tea, using SFBD-3 in orthodox rotorvane tea manufacture. Based on the recommended weir height of Flat Bed Fluidized Bed Dryer (FBFBD), all sectional weir heights of SFBD-3 were adjusted to three different heights *i.e.* 3", 3.5" and 4" respectively, and compared with weir heights adjusted under normal factory condition. Exhaust temperature fluctuation, output of dryer and quality parameters were evaluated. Exhaust temperature fluctuation was steadier at weir height of 3.5", leading to a better drying process. Dryer output was not significantly affected by the weir height. However, the highest average output of 194 kg hr⁻¹ was observed at 3.5" weir height combination. Thearubigins: Theaflavins ratio was significantly lower at 3.5" weir height combination, which is closer to the ideal ratio of 10:1. The highest value of brightness was observed at 3.5" weir height combination. Therefore, liquoring properties of tea produced by adjusting weir height to 3.5" had shown better results. Hence, it can be concluded that adjusting the weir heights to 3.5" would be more appropriate to achieve better output with good quality made tea.

Key words: Dryer output, Made tea quality, Stepwise Fluidized Bed Dryer, Weir height