DEGREE OF WITHER ON PREMIUM GRADES IN LOW COUNTRY ORTHODOX BLACK TEA MANUFACTURE

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The tender shoot of tea [*Camellia sinensis* (L) O. Kuntze] is processed into black (orthodox or CTC), green or oolong tea. Orthodox black tea manufacture includes several stages, of which withering is the most critical operation. Degree of wither (DOW) plays a significant role in tea manufacture. Hence, present study investigated the effect of degree of wither on achieving premium grades in low country orthodox black tea manufacture.

Green leaves were loaded into a withering trough at a rate of 26.9 kg/m^2 and similar withering conditions were maintained with the air flow rate of 0.6 m^2/min/kg of green leaves, 3-6 °C of hygrometric difference and 12-15 mm pressure of water gauge. Standard of green leaves, moisture % of green leaves and withered leaves were measured. Withered leaves were subjected to the subsequent processing events and weight of the made tea was measured to calculate the degree of wither. After grading, main, secondary and off grade percentages were calculated.

Regression analysis showed the relationship of moisture % of wither leaf (M%WL) = 57.2 0.074 Standard leaf % + 0.174 Sub Standard leaf % + 0.016 Coarse leaf % ($p > 0.05$). Since DOW = (1 - M%WL) x 100, the degree of wither that can achieve under the given withering conditions can be calculated by analyzing the green leaves at the time of trough loading. Further, with the relationship between premium grade percentages and degree of wither, it will be possible to estimate the premium grade percentages that can achieve under the given withering conditions. This will enable forecasting the premium grade percentage at the time of trough loading and to achieve more of premium grades by adjusting the withering conditions, which will be a step forward in commercial tea manufacture.

Key words: Degree of wither, Orthodox black tea, Tea manufacture, Withering