Formulation of a Green Tea Weight-Loss Meal Replacement

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ABSTRACT

The primary aim of this study was to determine the amount of green tea power, selenium yeast and chitosan which related to fat reduction, and formulate a new low-calorie, high-fiber, and good satiety weight-loss meal replacement, in order to match all the criteria of a commercial formula. We selected three different amounts of these three main ingredients as the test formula which were green tea powder (5g, 5.5g, 6g), selenium yeast (1g, 1.5g, 2g) and glucose powder (7g, 7.5g, 8g). A 3-factor, 2-level Response Surface Methodology (RSM) design was used to derive a second-order polynomial equation and to obtain the optimal viscosity and combination of the test formulas. The actual values of nutrient compositions were examined by different tests to make sure its correspondences to the designed values, Dietary Reference Intakes (DRIs). The storage time was assessed by measuring moisture content after it was laid aside for 180 days. The result showed that the most suitable combination of formula for green tea powder, selenium yeast and glucose powder was 5.4±0.07g, 1.3±0.2g, and 7.5±0.2g, respectively. The best viscosity value was 78 CPS ($p < 0.05$). From the result of 9-scale hedonic sensory evaluation, it showed that the milk-based formula had better taste than soy-based formula (p

Keywords : weight-loss meal replacement ; green tea powder ; selenium yeast ; chitosan ; dietary reference intakes (DRIs)

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