

Effect of Frying-Cooking on Nutritional and Bioactive Compounds of Innovative Ovo-Vegetarian Diets

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Abstract

Vegetarian diets are becoming increasingly popular as meat prices as well as health concerns rise. Many people are cutting down or cutting out meat in favor of a full vegetarian diet. In present study, the applicability of different vegetables for producing ready-to-use and ready-to-eat chickpea-based ovo-vegetarian diets (OVDs) was investigated. Herein, six different vegetables (cauliflower, taro, green zucchini, pea, bean and spinach) were formulated with 25% chickpea and additional edible ingredients to produce ready-to-use OVDs. Subsequently, chemical composition, minerals content, bioactive compounds and antioxidant activity of those OVDs were investigated. However, ready-to-eat OVDs were organoleptically evaluated after frying as common cooking method. Results of composite analysis indicated 67.73% to 73.17%, 23.20% to 37.12%, 1.86% to 2.63%, 7.63% to 9.53%, 9.06% to 9.82% and 39.24% to 55.28% for moisture, crude protein, lipids, ash, fiber, and carbohydrates contents in ready-to-use OVDs, respectively. After frying, lipid content was increased in fried diets which changed the chemical composition and caloric value. Significant differences ($p < 0.05$) were found between macro- and micro-nutrients content of ready-to-use and ready-to-eat OVDs. The ready-to-use OVDs exhibit appropriate content of ascorbic acid, chlorophylls, carotenoids, flavonoids, and flavonols which basically depends on their ingredients. Frying process dramatically affected the ascorbic acid, chlorophylls, flavonoids, flavonols, and carotenoids contents. High organoleptic acceptability of ready-to-eat OVDs was recorded to confirm the consumer attractiveness further. In conclusion, the possibility of producing healthy ready-to-eat and ready-to-use OVDs incorporated with common consumed vegetables could provide a promising approach for improving human health and dietary pattern as well as for selecting the optimum processing conditions for innovative OVDs.