

Abstract

The rising demand of gluten-free products for celiac people has led to important technological research on the replacement of the gluten matrix in the production of high quality gluten-free foods. The main objective of this study was to formulate gluten free pasta with black rice (BR), Joha rice (JR) and Egg white (EW) powder. Optimization of the composite flour was carried out and the optimal value was found to be 30.00: 55.32: 14.68 (BR: JR: EW). The optimized composite flour was pre treated prior to extrusion in order to maintain its acceptability in various aspect like taste, colour, texture, etc. Three precooking treatments were adopted in the preparation of gluten free pasta namely conventional treatment, sous-vide treatment and microwave treatment. In the conventional and sous-vide treatments, the temperature was maintained at 60°C, 70°C, 80°C and 90°C, while for microwave treatment four power levels (300W, 450W, 600W and 900W) were fixed. In the product, analysis for the total phenolic content and the radical scavenging activity was carried out. The result for total phenolic content (TPC) was found highest at the conventional treated at 70°C and the lowest at microwave treated at 900W. The result for the DPPH scavenging activity was found highest in microwave treated at 300W and lowest at sous-vide treated at 90°C. The total monomeric anthocyanin content of the product was carried out. It was found out that the total monomeric anthocyanin content was highest in the oven treated at 60°C and the lowest was observed at the sous-vide treatment in 90°C. The best treated gluten free pasta based on the colour, texture and sensory evaluation among all the other pastas was found to be the conventional treated at 60°C.