IMPACTS OF SOAKING TIME AND STEAMING TIME ON PROXIMATE, VITRO-STARCH DIGESTIBILITY AND AMYLOSE CONTENT OF SHORT, MEDIUM AND LONG RICE GRAIN TYPE

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ABSTRACT

This study aimed to evaluate the impacts of soaking time, steaming time and rice grain type (FARO 15 (short rice grain), FARO 60 (medium rice grain) and FARO 62 (long rice grain) on the proximate composition, in-vitro starch digestibility (rapidly digestible starch (RDS), slowly digestible starch (SDS), resistance starch (RS) and glycemic index (GI)), amylose and amylopectin contents of rice using Taguchi design. A Pareto chart was used to identify the most significant process factor. The highest crude protein content (12.14%), ash content (1.06%) and carbohydrate content (83.85%), amylose (25.06%) and GI (67.24%) were obtained in long grain rice while the highest RS (22.46%) and amylopectin (81%) were obtained in medium grain rice. The type of rice grain had the most significant impact on moisture, carbohydrate, ash, RS and GI. In contrast, the interaction of rice grain type and soaking time had the most significant influence on crude protein, fibre and SDS. The interaction of rice grain type and steaming time influences amylose and amylopectin contents. This study provides valuable information for rice processors on the nutritional and starch digestibility of three different classes of rice varieties and their optimum processing conditions.