ABSTRACT

The purpose and goal of this research were to study and to know the effect of phosphate salt concentration toward instant black sticky rice porridge characteristics and the exact use of sucrose concentration.

The experimental design in this research used 3x3 factorial design in a randomized complete block design (RAK) with 3 times repetition, so that there were 27 experiment units. In this research, the factors that used were concentrations of phosphate salt (Na$_2$HPO$_4$) 0.2%, 0.4%, and 0.6% and concentrations of sucrose (C$_{12}$H$_{22}$O$_{11}$) 20%, 30%, and 60%. There were several responses used, which were organoleptic response with the attributes of color, texture, aroma, and taste, physical responses by measuring sticky rice volume and cooking time, and chemical response was water content. For the selected treatment, there were analyses of anthocyanin and phosphate residue.

Based on the result, found that the phosphate salt (Na$_2$HPO$_4$) concentration significantly affected the sticky rice volume and cooking time as physical responses, water content as chemical response, and organoleptic response of taste and texture. Sucrose (C$_{12}$H$_{22}$O$_{11}$) concentration affected the organoleptic response of taste. The interaction of phosphate salt (Na$_2$HPO$_4$) concentration and sucrose (C$_{12}$H$_{22}$O$_{11}$) concentration affected the organoleptic response of taste.

Based on the responses, the best treatment was a3b2 (0.6% of phosphate salt (Na$_2$HPO$_4$) and 30% of sucrose (C$_{12}$H$_{22}$O$_{11}$)) with the cooking time was 2 minutes, the sticky rice volume was 171.944%, water content was 4.66%, anthocyanin was 934.3048 mg/L, and phosphate residue content was 90.59 mg/kg which showed that the phosphate residue was still in the safe limits.

Key words: Phosphate Salt Concentration, Sucrose Concentration, Rice Volume, Cooking Time, Water Content, Anthocyanin, Phosphat Residue, and Instant Black Sticky Rice Porridge.