

THE INFLUENCE OF METHODS OF MAKING STRUCTURANTS ON THE QUALITY OF GLUTEN-FREE PASTA

Corn flour does not contain the proteins that form gluten. Obtaining quality gluten-free product requires searching of ingredients which can replace it. This work studies ways of making the structurants in dough: dried egg protein, gelatin, starch, xanthan gum and carboxymethyl cellulose. The influence of dosage, water temperature and duration of swelling structurants on the viscosity of colloidal solutions, boundary shear stress test, quality semifinished and finished products were studied. Comparison of methods of making egg protein in dry and restored form showed improvement of finished products in the case of using the restored egg protein and increasing its dosage. There is a relation that with increasing dosage of the restored egg protein decreases the amount of solids that have fallen into the cooking water. Rheological characteristics of colloidal solutions of gelatin concentration of 0.5—1.25% in water temperature of 20, 40, 60°C were determined. It is proved that the best quality of gluten-free pasta is achieved the dosage of gelatin 1% of the weight of flour and water temperature of 20°C. The viscosity of the colloidal solution of gelatin is 531 Pa·s. In case of addition of 10—50% of the dry potato starch instead of corn flour and gum xanthan to 0.5% by weight of the mixture of flour and starch products of acceptable quality are produced. Their optimum quality indicators is achieved by introducing 30% starch in dry form and 0.5% xanthan. Pre-brewing starch provides improved quality products without the use of gum xanthan. It was investigated the use of carboxymethyl cellulose as structurant in an amount of 0.3 to 0.9% by weight of flour. It was established that the products have the best quality at minimum dosage of carboxymethyl cellulose — 0.3% and swelling in water of 60°C. The viscosity of colloidal solution is 4.4 Pa·s.

KEY WORDS: *structurant, cornflour, starch, xanthanum*