

Pengaruh Suhu dan Lama Pemanasan Suspensi Pati serta Konsentrasi Butanol terhadap Karakteristik Fisikokimia Pati Tinggi Amilosa dari Tapioka

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Abstract	<p>In food processing, starch was modified in order to improve its properties. One of the modified starches is highamylose starch. This kind of starch is made by fractionation method in which its conditions, such as temperature and time of suspensions heating as well as butanol concentration, would affect the starch properties. This study was aimed to determine the effect of those conditions on the properties of high-amylose tapioca starch. The results showed that higher starch suspension temperature was associated with lower levels of amylose and starch paste clarity. In addition, it was also associated with higher solubility and swelling power. Furthermore, the experiments showed that the longer the heating time and the higher the concentration of butanol, leading to the lower the amylose content of starch. The highest amylose content of the starch was produced from the treatment combination of suspensions heating temperature and time of 70°C and 40 minutes, respectively, with 10% of butanol concentrations. Amylose content yielded from this treatment increased by 37.33%.</p> <p>ABSTRAK Modifikasi pati dilakukan untuk memperbaiki sifat pati ketika diaplikasikan dalam pengolahan pangan. Salah satu produk pati termodifikasi adalah pati tinggi amilosa yang dibuat dengan metode fraksinasi. Kondisi fraksinasi meliputi suhu dan lama pemanasan suspensi pati serta konsentrasi butanol akan mempengaruhi karakteristik pati yang dihasilkan. Penelitian ini bertujuan untuk mengetahui pengaruh suhu dan lama pemanasan suspensi pati tapioka serta konsentrasi butanol terhadap karakteristik pati tinggi amilosa. Hasil penelitian menunjukkan semakin tinggi suhu pemanasan suspensi pati, mengakibatkan penurunan kadar amilosa dan kejernihan pasta pati namun meningkatkan kelarutan dan swelling power. Semakin lama waktu pemanasan suspensi pati dan semakin tinggi konsentrasi butanol menunjukkan kadar amilosa pada pati semakin menurun. Proses fraksinasi pati tapioka pada kombinasi perlakuan suhu pemanasan suspensi pati 70°C, lama pemanasan suspensi pati 40 menit, dan konsentrasi butanol 10% menghasilkan pati dengan kadar amilosa tertinggi. Kadar amilosa meningkat sebesar 37,33%.</p>
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