

大豆蛋白限制性酶解对乳化性质和吸油性的影响 Limited Hydrolysis of Soybean Proteins and Modifications in Emulsifying Property and Oil Absorption Capacity

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关键词: 大豆浓缩蛋白 大豆分离蛋白 乳化性质 吸油性 酶水解

摘要: 利用中性蛋白酶和胰蛋白酶对大豆浓缩蛋白、分离蛋白进行限制性酶解处理,以SDS-PAGE分析评价酶解产品的蛋白质降解情况。评价水解度为1%、2%的8个酶解产品的乳化活性指数、乳化稳定性、吸油率,考察酶解产品的酶解模式与乳化性质、吸油性变化的关系。结果表明,酶解产品的乳化性质、吸油性变化与所使用的酶或水解度有关。大豆浓缩蛋白的限制性酶解可以提高产品的乳化性质和吸油性,水解度为1%的胰蛋白酶酶解产品具有最好的乳化性质和吸油性。大豆分离蛋白的限制性酶解也可以提高产品的乳化活性指数,但降低了其吸油性;水解度为1%的胰蛋白酶酶解产品也具有最好的乳化性质。 Soybean protein concentrate and soybean protein isolate were both limited hydrolysed with neutrase and trypsin respectively. SDS-PAGE was employed to analyse protein degradation in the hydrolysed soybean protein products. The relationship between hydrolysis pattern and the functional properties of the hydrolysed soybean protein products, such as emulsion property and oil absorption, were investigated. The emulsifying activity index, emulsion stability and oil absorption capacity of eight hydrolysed soybean protein products with the degree of hydrolysis (DH) of 1% or 2% were detected. The experimental data indicate that the emulsifying property and oil absorption capacity correlate with the protease used or the DH. For soybean protein concentrate, hydrolysis with neutrase or trypsin improves its emulsifying property and oil absorption capacity, and hydrolysis with trypsin to the DH of 1% gains the optimal emulsifying property and oil absorption capacity. At the same time, hydrolysis with neutrase or trypsin improves the emulsifying activity index of soybean protein isolate, but reduces the oil absorption capacity, and hydrolysed soybean protein isolate with trypsin to a DH of 1% has the optimal emulsion property.

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