

籽粒苋蛋白质的提取研究

Technology for the extraction of protein from grain amaranth

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中文摘要:

为了探索籽粒苋蛋白质的提取工艺,研究了不同的介质pH值、提取时间、提取温度和加水比例对籽粒苋蛋白质的可溶出率的影响,分析了3种pH值下提取的蛋白质氨基酸组成。结果表明:pH值极大地影响籽粒苋蛋白质的溶出率,pH 2.0~4.6时,随pH值上升,溶出率下降,pH 4.6~12.0时,随pH值上升,可溶出率增大;pH值4.6时为最低点,此时可能为籽粒苋蛋白质的等电点;水与籽粒苋之比为20时,蛋白质的可溶出率较其它比例为高;其它因素对籽粒苋蛋白质的溶出率影响不大。因此,籽粒苋蛋白质最佳提取工艺条件采用料液比为1:20,在pH 8~10的碱性环境下,室温浸提1 h。

英文摘要:

To study the technology for the extraction of protein from grain amaranth, the effect of pH value, extracting time, extracting temperature and the ratio of extracting medium were studied. The amino acid profile of extracted protein at three pH values was analyzed by the HPLC. The results showed that pH value greatly influenced the solubility; and a minimum solubility was found at pH 4.6. The solubility decreased as pH value increased at pH 2.0~4.6, while the solubility increased as pH value increased at pH 4.6~12.0. High protein solubility was found at a 20:1 ratio of water to Amaranth. It was observed that other factors did not significantly affect the solubility of the protein. Based on the primary results, extracting 1 h at room temperature, a 20:1 ratio of water to amaranth and pH 8~10 may be the best technology for the extraction of protein from grain amaranth.

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