Enzymatic solubilization of a pectinaceous dietary fiber fraction from potato pulp: Optimization of the fiber extraction process - DTU Orbit (18/01/2019)

Enzymatic solubilization of a pectinaceous dietary fiber fraction from potato pulp: Optimization of the fiber extraction process

Upgrading of potato pulp, a byproduct stream from industrial manufacture of potato starch, is important for the continued economic competitiveness of the potato starch industry. The major part of potato pulp consists of the tuber plant cell wall material which is particularly rich in galactan branched rhamnogalacturonan I type pectin. In the work reported here, the release of high-molecular weight pectinaceous dietary fiber polysaccharides from starch free potato pulp was accomplished by use of a multicomponent pectinase preparation from Aspergillus aculeatus (Viscozyme® L). The enzyme reaction conditions for the solubilization were optimized via a surface response design to be addition of 0.27% Viscozyme® L by weight of potato pulp substrate dry matter, 1 h treatment at pH 3.5, 62.5 °C. Analysis of the molecular size and monomer composition of the enzymatically released fibers showed that they were rich in galactose and uronic acid indicating that the solubilized fibers were mainly made up of galactan branched rhamnogalacturonan I type pectin polymers.

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