

Title Surfactants from xylan: Production of n-octyl xylosides using a highly thermostable xylanase from *Thermotoga neapolitana* Author/s [Gashaw Mamo](#), [Sangita Kasture](#), [Reza Faryar](#), [Suhaila Hashim](#), [Rajni Hatti-Kaul](#) Department/s [Biotechnology \(LTH\)](#)

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Abstract English A highly thermostable recombinant xylanase from *Thermotoga neapolitana* was used as a catalyst for single-step synthesis of n-octyl xylobioside and n-octyl xylotrioside from xylan and n-octanol. Effect of xylan concentration, enzyme dose, reaction water content, reaction temperature and initial pH on the yield of these surfactants has been studied. The optimal conditions for n-octyl xylobioside and n-octyl xylotrioside synthesis are found to be different. The maximum n-octyl xylobioside and n-octyl xylotrioside yield were 120 and 38 mg/g of xylan, respectively. The n-octyl xylobioside yield achieved in this study was better than the yield achieved in all other enzymatic synthesis studies reported so far except what is achieved with the use of supercritical fluoroform under high pressure. The n-octyl xylotrioside yield is the highest ever achieved through enzymatic synthesis. An integrated system of production and recovery of n-octyl xylosides has improved the yield of n-octyl xylobioside and n-octyl xylotrioside by a factor of 1.7 and 2.4, respectively. (C) 2010 Elsevier Ltd. All rights reserved. Subject Technology and Engineering Keywords Xylan, Family 10 xylanase, *Thermotoga neapolitana*, Octyl xylosides, Nonionic surfactants, Integrated product removal ISBN/ISSN/Other ISSN: 1359-5113