

PC-10

Monitoring fructooligosaccharides production using *Aspergillus aculeatus* by HPLC-ELSD

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Fructooligosaccharides (FOS) are present in plants and fruits at low concentrations, thus their extraction from natural sources may not be economically viable for a large scale industrial application. Therefore, FOS production by fermentation using fungi can be an alternative. In this work, FOS were produced using *Aspergillus aculeatus* at different sucrose initial concentrations (88 to 265 g/L) and at temperatures from 22 to 32°C. FOS production was monitored by HPLC-ELSD, allowing to confirm that the initial sucrose concentration significantly influenced biomass growth (a maximum value of 16 ± 2 g was achieved) although it did not significantly affect the maximum FOS yield (amount of FOS produced per initial sucrose) obtained, which varied from 51 to 59 g/g obtained, which varied from 51 to 59 g/g. Finally, the preliminary results enabled verifying that depending on the fermentation conditions, slightly different FOS production profiles were obtained (Figure 1), revealing differences in the individual FOS concentrations (i.e., 1-kestose, nystose and fructofuranosyl nystose), which could be of interest since it has been reported that the beneficial health effects of FOS may depend on the relative FOS composition.

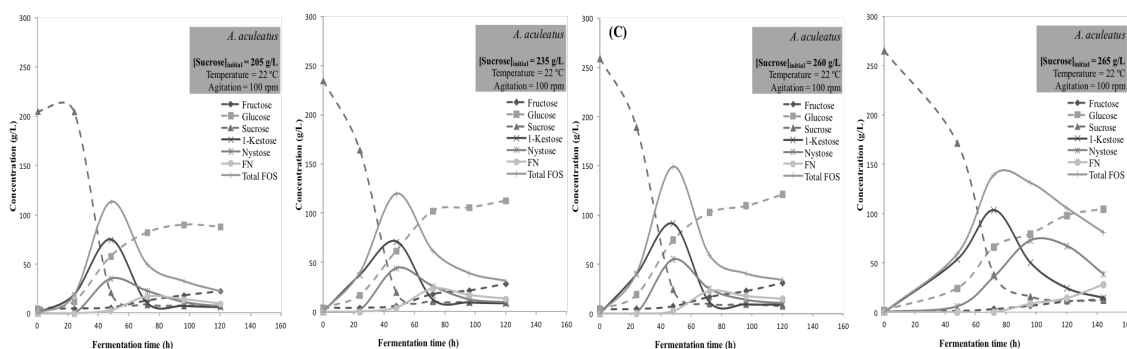


Figure 1. Concentration profiles of substrate (sucrose) and fermentation products (glucose, fructose, 1-kestose, nystose, fructofuranosyl nystose and total FOS) determined by HPLC-ELSD.

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