

Bioenergy Research Projects

Endophytic yeasts are adapted to the plant sugars and phytochemicals, potentially making them better equipped for fermentation of plant biomass to useful biochemical. Endophytic yeast strains isolated from poplar trees were able to ferment both hexoses and pentoses, an ability that traditional brewer's yeast is lacking. The endophytes were resistant to common inhibitors of fermentation.

Undergraduate researchers have isolated more promising endophytic yeast strains that have yet to be characterized fully.

Xin, G., Glawe, D., and **Doty, S.L.** 2009. Characterization of three endophytic indole-3-acetic acid-producing yeasts occurring in *Populus* trees. *Mycological Research* 113:973-980.

Xu, P., Bura, R. and Doty, S. L. 2011. Genetic analysis of D-xylose metabolism by endophytic yeast strains of *Populus*. *Genetics and Molecular Biology* 34(3):471-478.

Bura, R., Vajzovic, A., and Doty, S. L. 2012. Novel endophytic yeast *Rhodotorula mucilaginosa* strain PTD3: I. Production of xylitol and ethanol. *Journal of Industrial Microbiology & Biotechnology* 39(7):1003-1011.

Vajzovic, A., Bura, R., and Doty, S. L. 2012. Novel endophytic yeast *Rhodotorula mucilaginosa* strain PTD3: II. Production of xylitol and ethanol in the presence of inhibitors. *Journal of Industrial Microbiology & Biotechnology* (in press)

