

Pilot Plant Progress

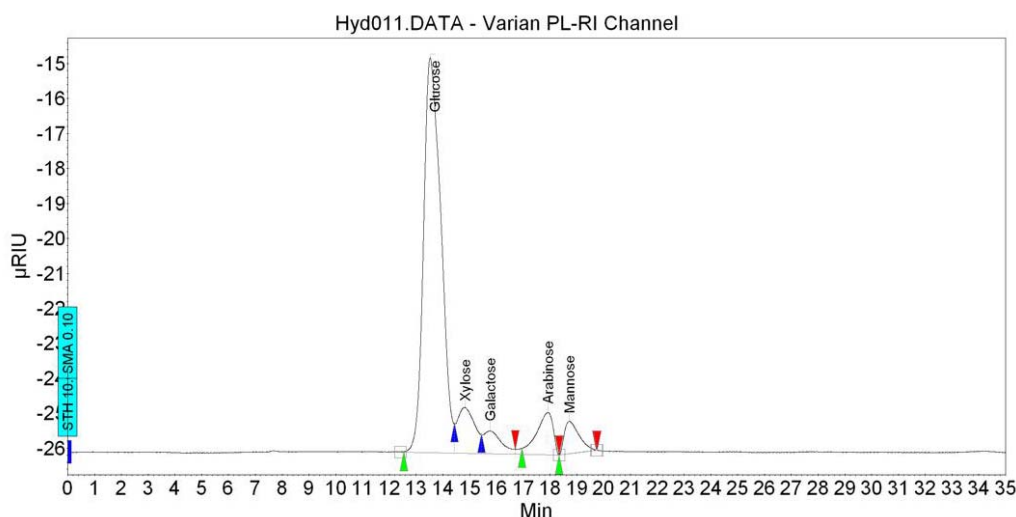
Development of the Pilot Plant at Harwood Sugar Mill is progressing well. Phase One is currently scheduled to be completed during April 2009.

Phase One of the Project consists of process Stages 1 and 2. Stage 1 aims to demonstrate that a twin screw extruder (TSE) can be used to efficiently impregnate dried raw timber, sugarcane bagasse and other lignocellulosic feedstocks with concentrated sulphuric acid, enabling subsequent efficient conversion (“hydrolysis”) of the hemicellulose and cellulose components of the feedstock to sugars in Stage 2.

To reduce the technological and financial risks associated with the development of this new technology, an initial work program has been undertaken involving the conduct of trials using a second-hand Werner and Pfleiderer 37mm TSE to determine the basic operating parameters of a TSE when used in this unique application. Results to date from the trials using radiata pine and sugarcane bagasse as feedstocks have been very encouraging. High levels of conversion of the hemicellulose and cellulose contents of the feedstocks to sugars are being achieved in minutes. These trials have facilitated the final specification of the TSE to be used in Stage 1 of the Pilot Plant at a cost saving to the Project. The scientific team will shortly select a manufacturer to supply the Stage 1 TSE.



Initial TSE trials in progress



HPLC Chromatogram Showing Sugars Obtained on Hydrolysis of a Sample of Radiata Pine