

**Table S1.** Chemical composition of pretreated solids under DA-SE pretreatment.

Temperature (°C)	Time	RY (%)	Contents (%)			Recovered glucan	Removed Xylan	Removed AIL*
			Glucan	Xylan	AIL*			
180	10	62.5	42.1	2.7	44.6	74.4	82.5	6.8
180	15	62.0	45.9	2.4	43.3	80.6	84.4	10.3
195	5	64.8	41.4	3.3	43.8	75.8	77.8	5.1
195	10	63.6	42.6	1.9	43.5	76.3	87.3	7.9
205	5	57.7	41.6	1.5	47.6	67.9	90.7	8.5
215	5	58.4	39.3	3.1	45.1	64.9	81.3	11.8

\*AIL: Acid-insoluble lignin

**Table 2S.** Composition of liquid fraction (prehydrolyzated) obtained after DA-SE pretreatment. Data are expressed as g/100 dry MFGW except for **vainillin, hydroxybenzoic acid and syringaldehyde** which data are expressed as mg/100 g dry MFGW

Temperature (°C)		180		195		205	215
		10	15	5	10	5	5
Main sugars	Monomeric glucose	4.5	4.0	4.7	5.3	4.6	5.8
	Oligomeric Glucose	0.3	0.0	0.1	0.0	0.0	0.0
	Monomeric Xylose	6.4	7.1	6.4	7.3	6.4	6.2
	Oligomeric Xylose	0.1	0.0	0.5	0.0	0.5	0.0
Degradation products	Furfural	0.5	0.5	0.4	0.5	0.6	0.8
	HMF	0.4	0.3	0.4	0.1	0.4	0.6
	Acetic acid	2.5	2.8	2.2	2.9	2.4	2.8
	Formic acid	0.5	0.5	0.5	0.6	0.4	0.5
	<b>Levulinic acid</b>	<b>0.01</b>	<b>ND</b>	<b>0.01</b>	<b>ND</b>	<b>0.01</b>	<b>0.09</b>
	Vainillin	4	7	4	8	7	8
	Hydroxybenzoic acid	34	50	36	52	ND	ND
Syringaldehyde	6	ND	7	11	10	12	

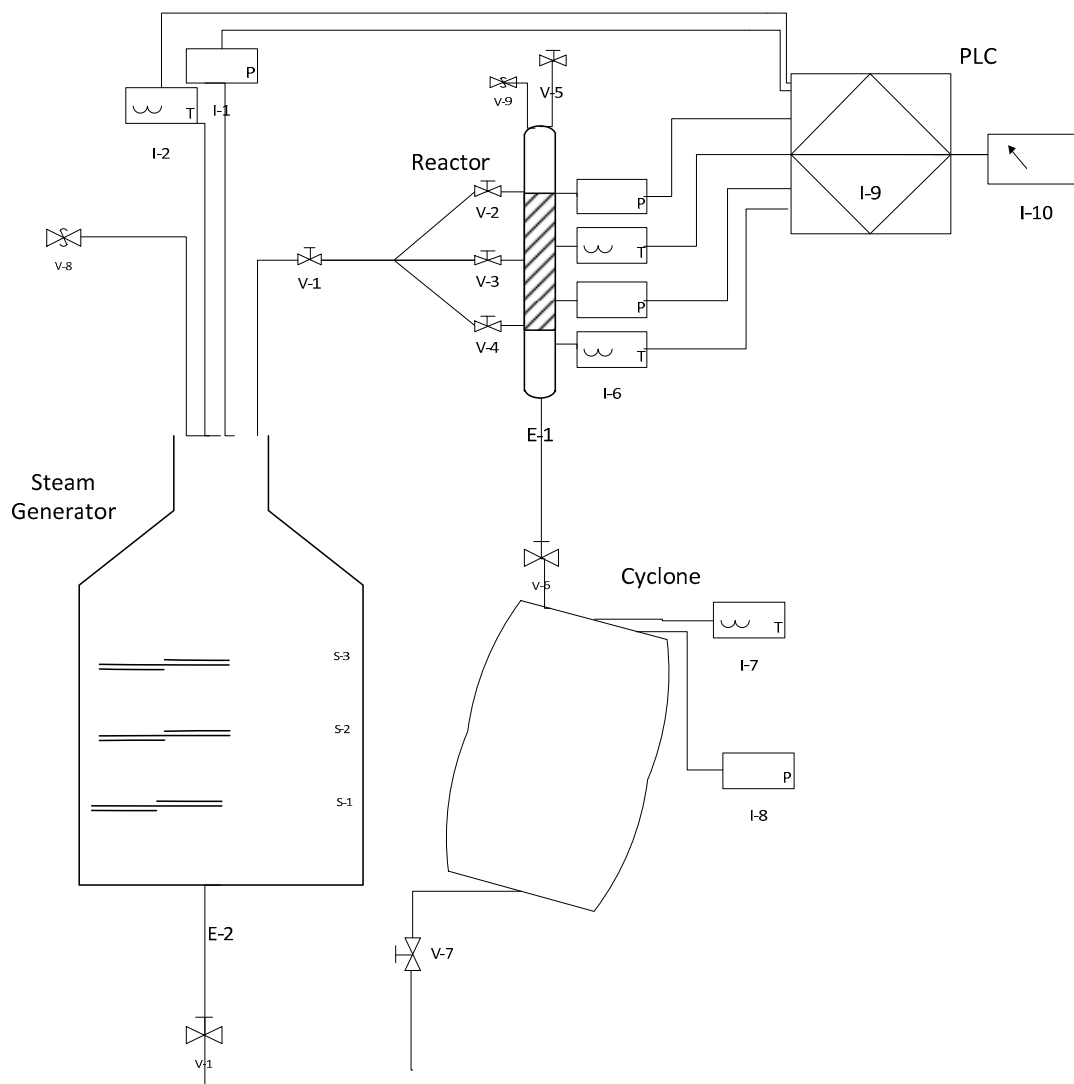


Figure 1S. Schema of steam explosion unit.

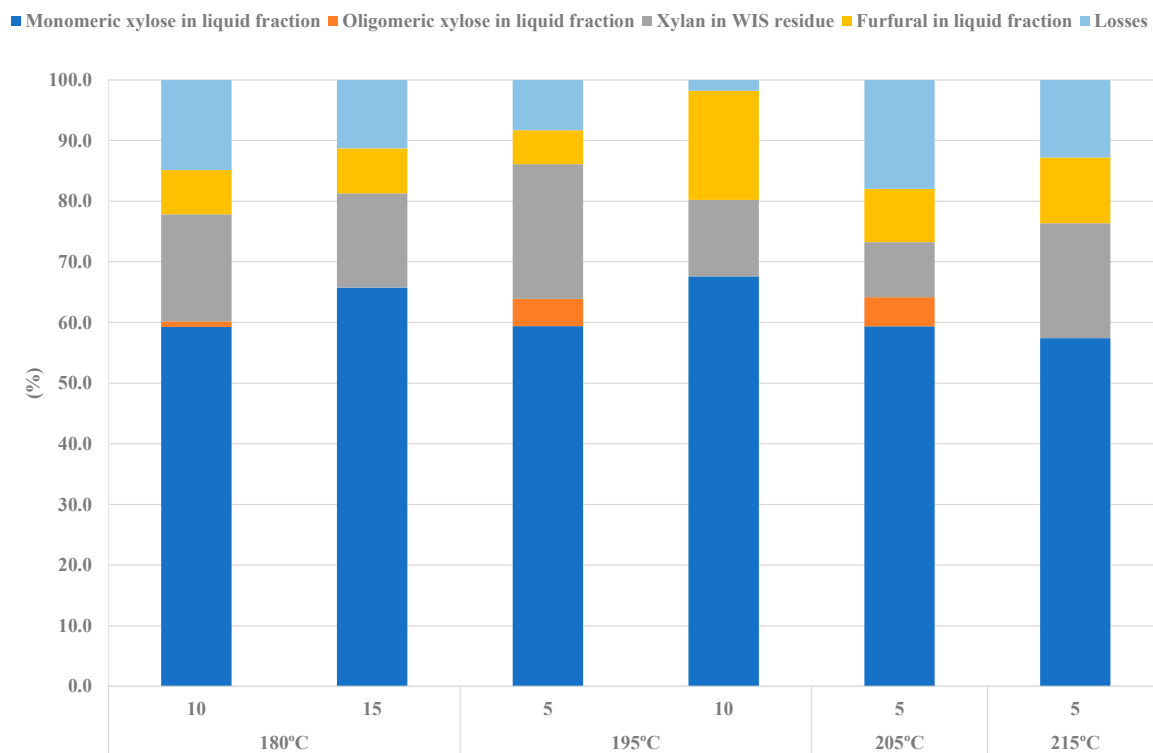


Figure 2S. Xylan distribution in MFGW pretreated with DA-SE pretreatment.