DATA OBTAINED FROM PREVIOUS EXPERIMENTS

STARTING MATERIAL

RYE BRAN

Sugar in mg per mg sample (72% prehydrolysis and 4% hydrolysis)

	Fuc	Ara	Rha	Gal	Glc	Xyl	Man	GalA	GlcA	Total
Average (n=3)	0.0007	0.064	n.d.	0.0088	0.27	0.15	n.d.	n.d.	n.d.	0.49
STDAV	0.0001	0.004		0.0006	0.02	0.001				0.01

Amount of monosugars (mg) per gram dry Rye bran

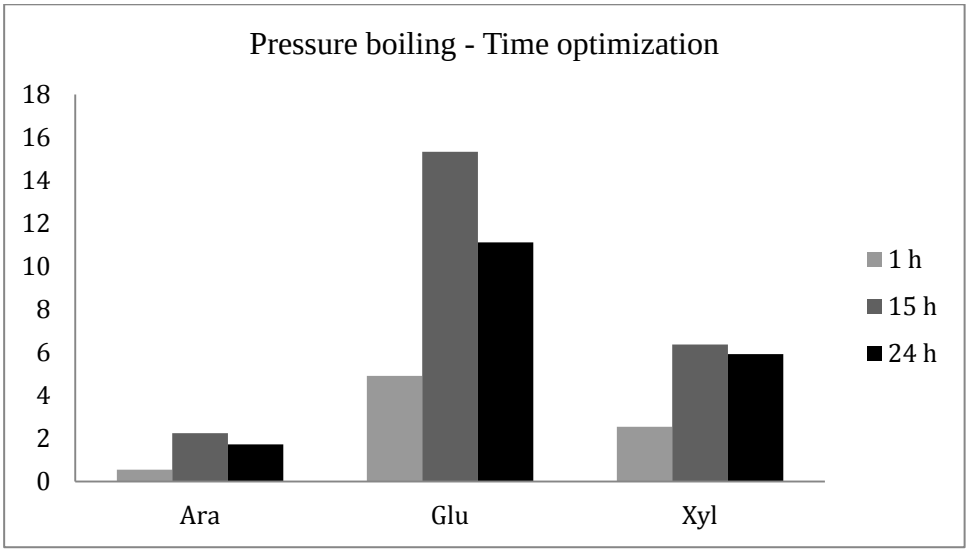
	Ara	Gal	Glc	total		Ara	Gal	Glc
Sample-1	0.94	0.28	20.02	21.24	avg	1.07	0.26	21.36
Sample-2	1.14	0.27	22.05	23.46	stdev	0.11	0.02	1.15
Sample-3	1.13	0.24	21.99	23.36				

PRESSURE BOILING

CHOICE OF DW (Falck, 2010)

Dry weight %	Monosaccharides (µM)			
	Arabinose	**Galactose**	**Glucose**	**Xylose**
10	200	23	1452	524
20	170	20	1334	416
40	80	11	667	164
90	92	20	950	275

CHOICE OF TIME (Falck, 2010)



PREVIOUS EXTRACTION PRODUCT COMPOSITION

Sugar in mg per mg sample

	Fuc	Ara	Rha	Gal	Glc	Xyl	Man	total
Extract standard deviation	0.003	0.085	0.000	0.009	0.239	0.280	0.000	0.616
Extract	0.003	0.001	0.000	0.002	0.010	0.003	0.000	0.006

XYLANASE TREATMENT

ACTIVITY OF RMXYN10A XYLANASE

(Two different xylan substrates at 70 °C)

Substrate	Rmxyn10A (nkat/ml)		Rmxyn10A (U/ml)			
	Catalytic.	Full length	Catalytic.	Full length	U	U/g xylan
Birchwood xylan 1% in water pH 7.5	13676	18973	821	1138	148	25
Rye bran arabinoxylan 1% in water/ethanol pH 6.5	20172	21556	1210	1293	218	36

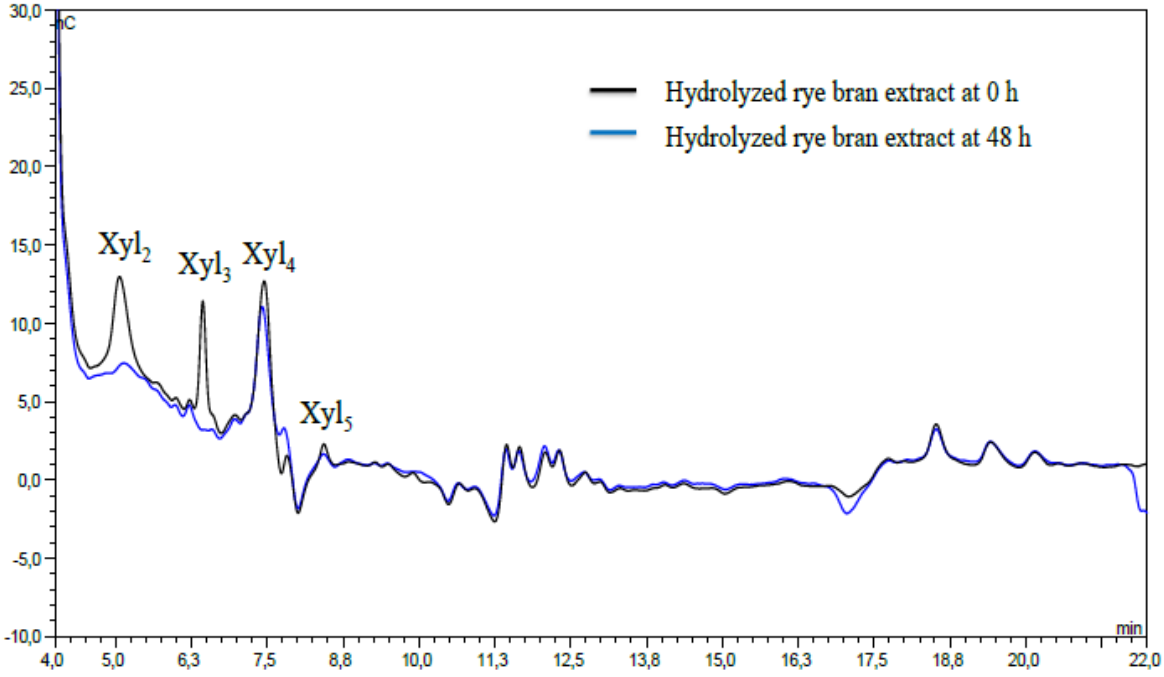
SPECIFIC ACTIVITY OF RMXYN10A XYLANASE

(Two different xylan substrates at 70 °C)

Substrate	Rmxyn10A (nkat/mg)		Rmxyn10A (U/mg)		Rmxyn10A (U/g)	
	Catalytic.	Full length	Catalytic.	Full length	Catalytic.	Full length
Birchwood xylan 1% in water pH 7.5	5698	4125	342	247	341890	247477
Rye bran arabinoxylan 1% in water/ethanol pH 6.5	8405	4686	504	281	504294	281169

OLIGOSACCHARIDES FERMENTATION

Utilization of hydrolyzed rye bran extract by *L. brevis* after 48h fermentation (Phositlimpakul, 2011).



Note :Xyl_2=xylobiose, Xyl_3=xylotriose, Xyl_4=xylotetrose, Xyl_5=xylopentose