

Details of commercial enzymes

- 1) Celluclast 1.5L (700EGU/g , 60 FPU/ml)
- 2) Hemicellulase from aspergilus niger (1.5 U/mg)
- 3) β -Glucosidase from almonds (6 U/mg)

Table s1 enzymes ratio used for enzymatic hydrolysis condition optimization.

Name of Enzymes	cellulase	Hemicellulase	β -Glucosidase
A	1	1	1
B	1	0	0
C	1	2.5	2
D	2	1	1
E	0	1	1

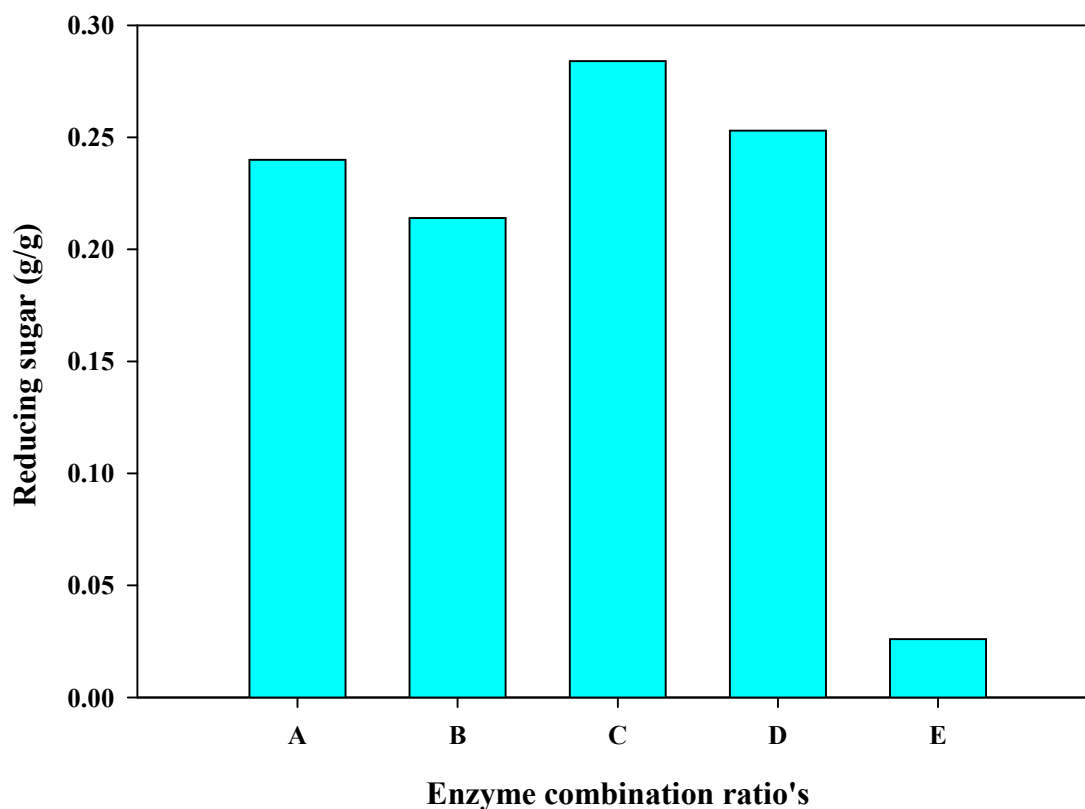


Fig s1 Enzyme combination ratio optimization for enzymatic hydrolysis.

Table s2 Table 1 Coded values of the variables for the central composite design

Variable	Symbol	Actual and coded values				
		coded				
		-2	-1	0	1	2
Biomass loading(w/v) variable	A	10	12.5	15	17.5	20
Incubation time (hour)	B	0	24	48	72	96
Protein loading (mg/g)	C	25	50	75	100	125
Surfactant concentration (w %)	D	0	0.050	0.125	0.200	0.275