Single-cell protein production by Pleurotus ostreatus in submerged fermentation

electronic supplementary information (ESI)

Table 1. *Experimental conditions and results of screening design on the cultivation of P. ostreatus* LGAM 1123

Exp No	Glucose ($g\ L^{-1}$)	Yeast extract ($g\ L^{-1}$)	$NaN0_3$ ($g\ L^{-1}$)	pH	Cultivation time (days)	Biomass ($g\ L^{-1}$)	Protein Content (%)	Protein production ($g\ L^{-1}$)
1	4	1	0.4	5.0	16.0	2.6	30.3	0.8
2	40	1	0.4	5.0	8.0	3.5	23.6	0.8
3	4	10	0.4	5.0	8.0	6.0	36.1	2.2
4	40	10	0.4	5.0	16.0	15.4	41.0	6.3
5	4	1	4.0	5.0	8.0	2.8	26.5	0.7
6	40	1	4.0	5.0	16.0	17.7	36.6	6.5
7	4	10	4.0	5.0	16.0	4.1	19.8	0.8
8	40	10	4.0	5.0	8.0	22.5	25.8	5.8
9	4	1	0.4	7.0	8.0	2.9	27.7	0.8
10	40	1	0.4	7.0	16.0	2.9	28.6	0.8
11	4	10	0.4	7.0	16.0	2.7	7.1	0.2
12	40	10	0.4	7.0	8.0	21.7	26.5	5.7
13	4	1	4.0	7.0	16.0	1.9	29.5	0.6
14	40	1	4.0	7.0	8.0	2.7	29.0	0.8
15	4	10	4.0	7.0	8.0	6.5	56.9	3.7
16	40	10	4.0	7.0	16.0	14.8	37.1	5.5
17	22	5.5	2.2	6.0	12.0	9.3	29.0	2.7
18	22	5.5	2.2	6.0	12.0	10.0	27.0	2.7
19	22	5.5	2.2	6.0	12.0	10.2	28.5	2.9

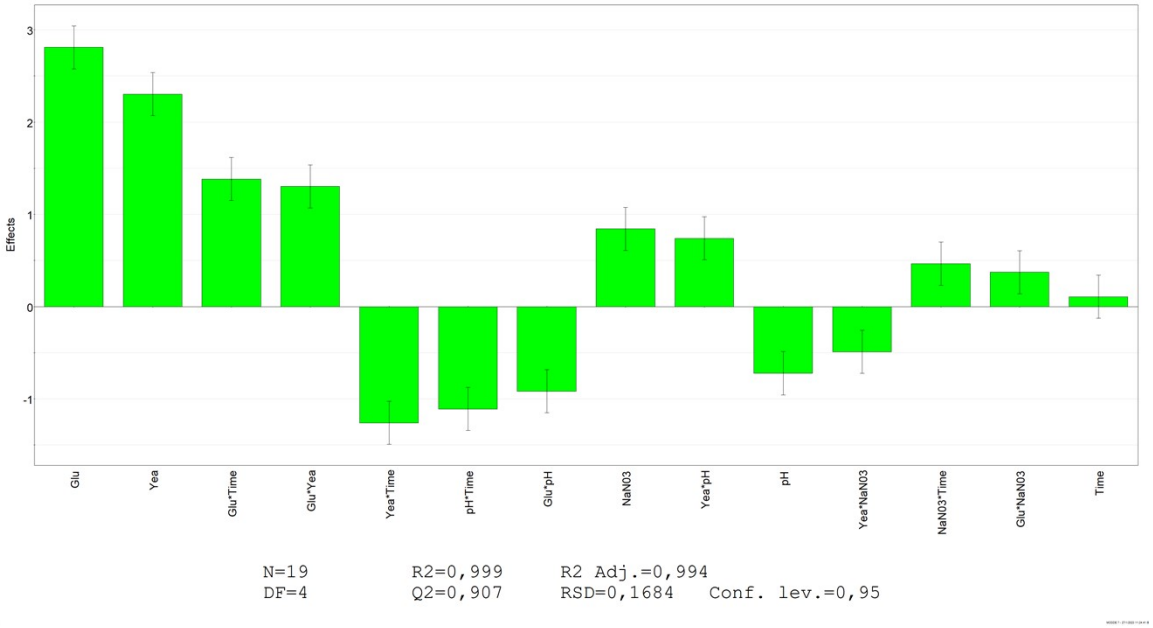

Fig. 1 Effect bar plot for cultivation conditions used in the screening for protein production by *P. ostreatus* LGAM 1123. Insignificant, those where the confidence interval includes zero ($p>0.05$).

Table 2 *Analysis of variance (ANOVA) for the regression model describing protein production as a function of different cultivation conditions in submerged cultivation of P. ostreatus* 1123

Protein production	**DF**	**SS**	**MS (variance)**	**F**	**p**
Regression	5	21	4	28	**0.00**
Residual	5	0.75	0.15		
Lack of Fit (Model Error)	3	0.59	0.20	2	**0.31**
Pure Error (Replicate Error)	2	0.17	0.08		
Total Corrected	10	22	2		
R2 =0.966 $F_{(0.95,5,5)}$=5.05; $F_{(0.95,3,2)}$ =19.16					

Table 3 Analysis of variance (ANOVA) for the regression model of RSM representing protein production by P. ostreatus LGAM 1123.

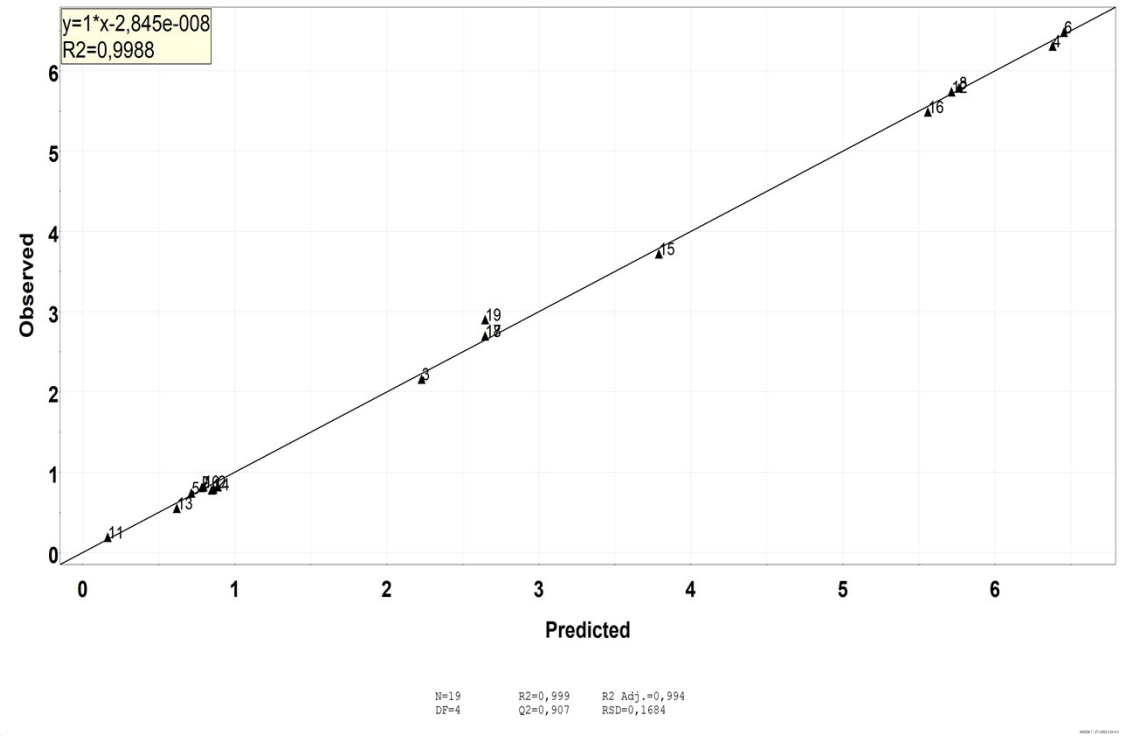

Fig. 2 *Observed vs predicted values of RSM representing protein production by P.* 1123. *The continuous line represents the correlation between measured and simulated values.*

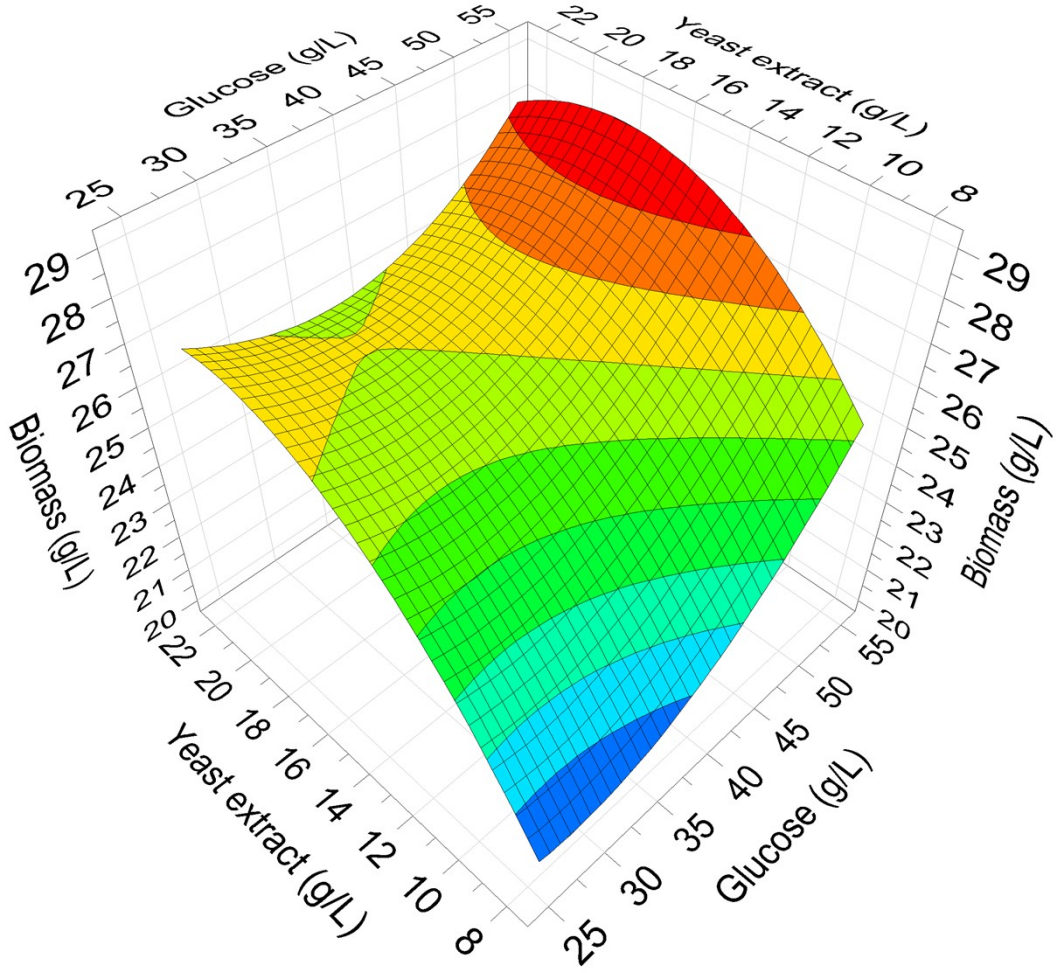

Fig. 3 *3D surface plot of biomass production as a function of glucose and yeast extract concentration from submerged cultivation of P. ostreatus LGAM 1123.*

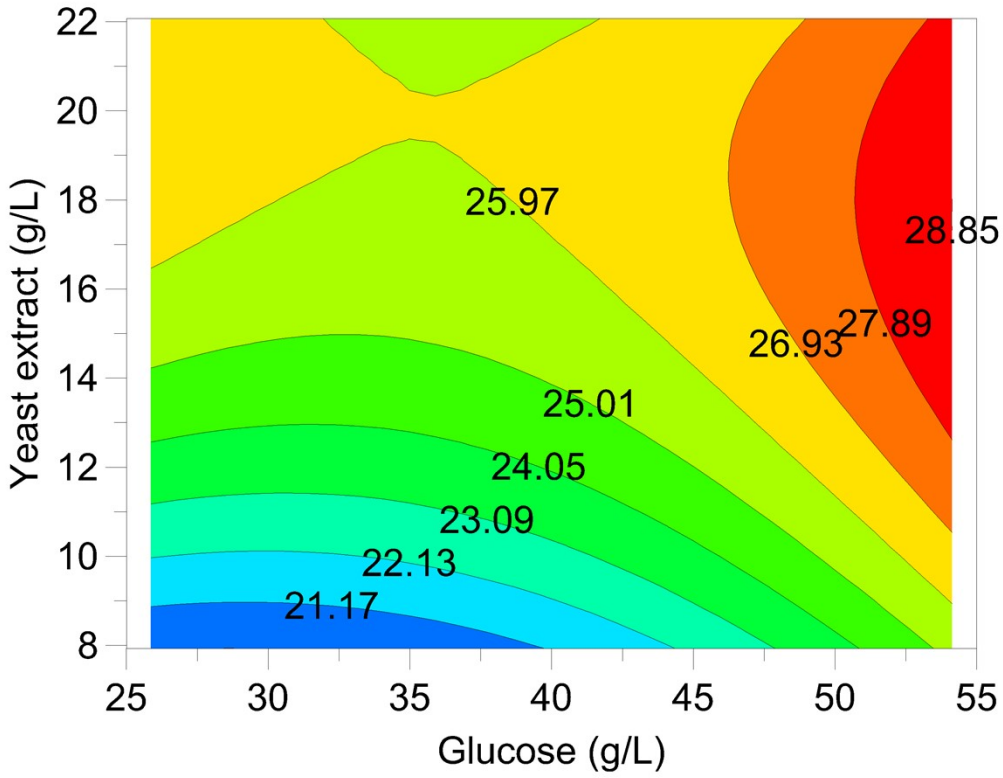

Fig. 4 *Contour plot of biomass production as a function of glucose and yeast extract concentration from submerged cultivation of P. ostreatus LGAM 1123.*

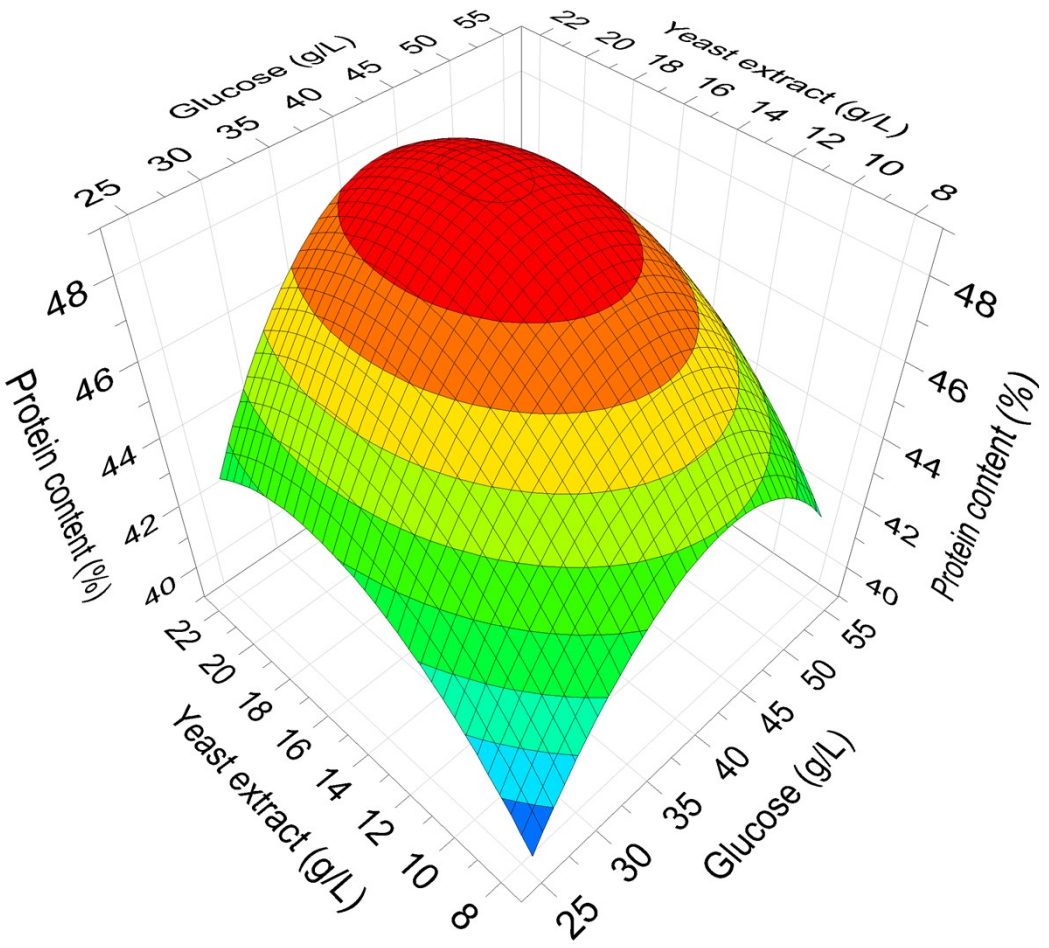

Fig. 5 *3D surface plot of protein content as a function of glucose and yeast extract concentration from submerged cultivation of P. ostreatus LGAM 1123.*

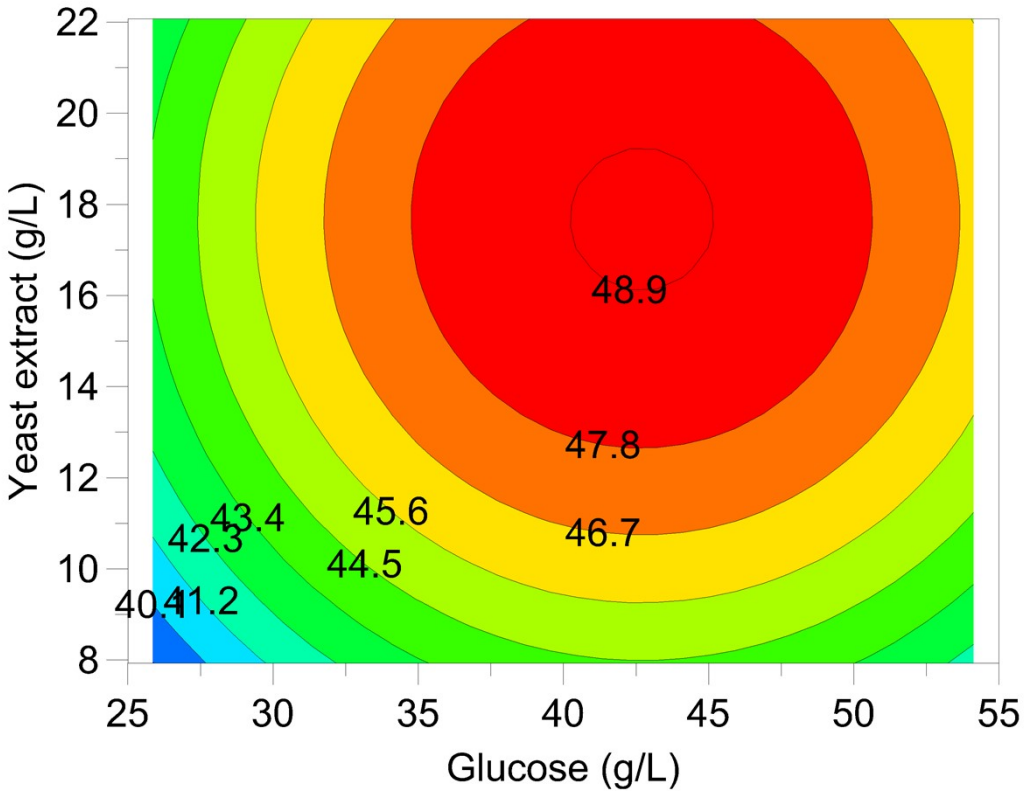

Fig. 6 *Contour plot of protein content as a function of glucose and yeast extract concentration from submerged cultivation of P. ostreatus LGAM 1123.*

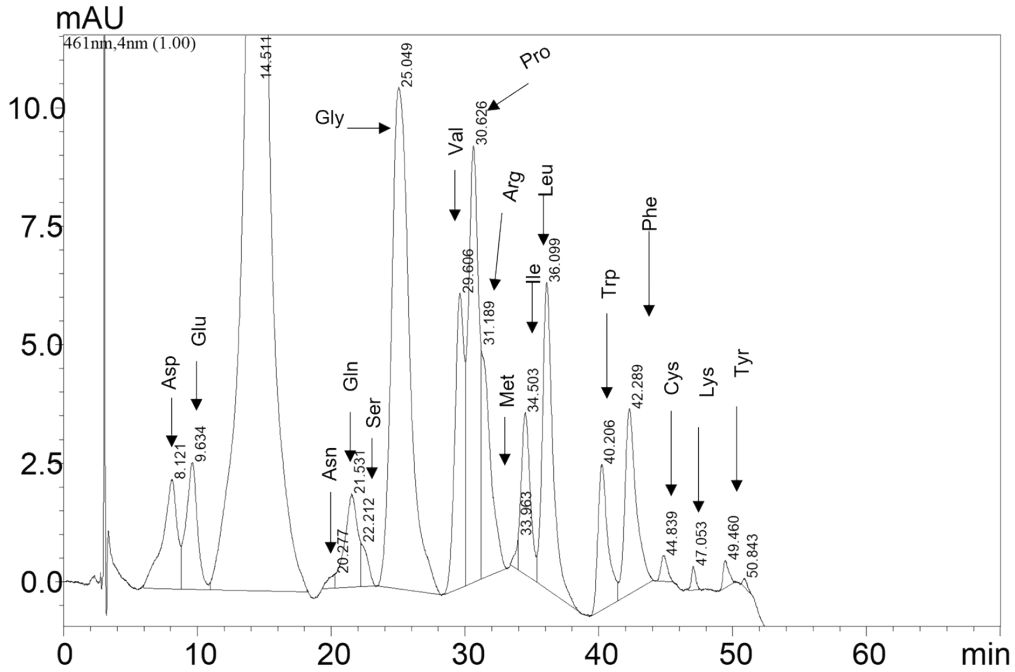

Fig. 7 *HPLC chromatograph for amino acid analysis using Dabsyl derivatization method from submerged cultivation of P. ostreatus LGAM 1123, at Glucose (54.14 g L^{-1}) and yeast extract (18.14 g L^{-1}).*