

Figure 3: Effect of sucrose on decolorization and biomass

Effect of Different Nitrogen Sources on decolorization and biomass

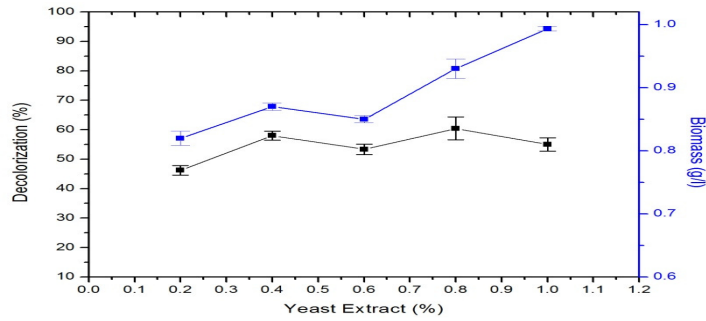


Figure 4: Effect of Yeast extract on decolorization and biomass

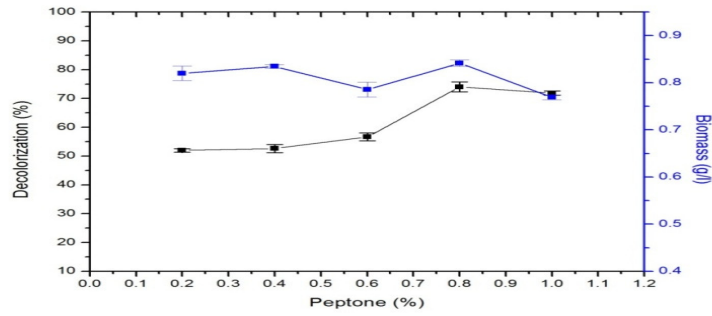


Figure 5: Effect of Peptone on decolorization and biomass

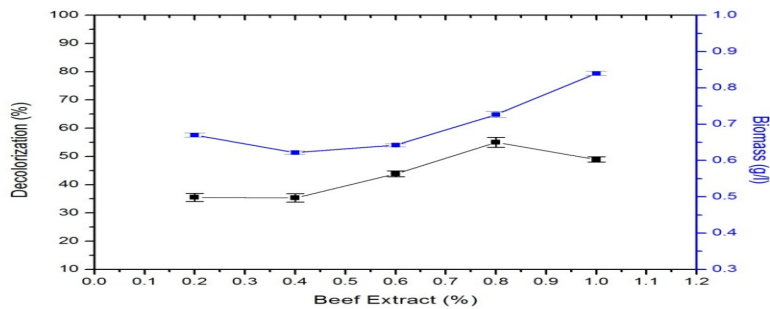


Figure 6: Effect of Beef extract on decolorization and biomass
 Experimental run from Design expert

Table 1: Experimental runs

		Factor 1	Factor 2	Factor 3	Response 1
Std	Run	A:Glucose	B:Peptone	C:KH ₂ PO ₄	Decolorization
14	1	0.8	0.8	0.075	74
15	2	0.8	0.8	0.075	74
2	3	1	0.6	0.075	61
3	4	0.6	1	0.075	70
12	5	0.8	1	0.1	60
13	6	0.8	0.8	0.075	74
8	7	1	0.8	0.1	65
6	8	1	0.8	0.05	69
5	9	0.6	0.8	0.05	67
16	10	0.8	0.8	0.075	74
10	11	0.8	1	0.05	71
17	12	0.8	0.8	0.075	74
11	13	0.8	0.6	0.1	75
4	14	1	1	0.075	68
7	15	0.6	0.8	0.1	62
1	16	0.6	0.6	0.075	66
9	17	0.8	0.6	0.05	64

VI. ANOVA RESPONSE AND VALUES

Use your mouse to right click on individual cells for definitions.

Response 1 R1

ANOVA for Response Surface Quadratic Model

Analysis of variance table [Partial sum of squares - Type III]

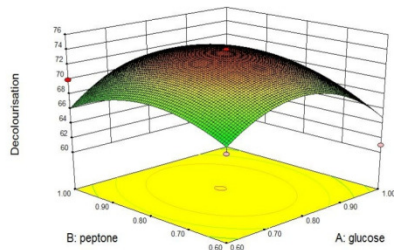
Source	Sum of Squares	df	Mean Square	F Value	p-value Prob > F	significant
Model	1.420E+007	9	1.577E+006	11.34	0.0004	significant
A-A	1.351E+005	1	1.351E+005	0.97	0.3476	
B-B	6.683E+005	1	6.683E+005	4.80	0.0532	
C-C	1.298E+006	1	1.298E+006	9.33	0.0122	
AB	6728.00	1	6728.00	0.048	0.8304	
AC	12482.00	1	12482.00	0.090	0.7706	
BC	1.358E+006	1	1.358E+006	9.76	0.0108	
A ²	3.382E+006	1	3.382E+006	24.32	0.0006	
B ²	5.897E+006	1	5.897E+006	42.39	< 0.0001	
C ²	3.494E+006	1	3.494E+006	25.12	0.0005	
Residual	1.391E+006	10	1.391E+005			
Lack of Fit	1.069E+006	5	2.139E+005	3.33	0.1066	not significant
Pure Error	3.215E+005	5	64302.27			
Cor Total	1.559E+007	19				

The Model F-value of 11.34 implies the model is significant. There is only a 0.04% chance that a "Model F-Value" this large could occur due to noise.

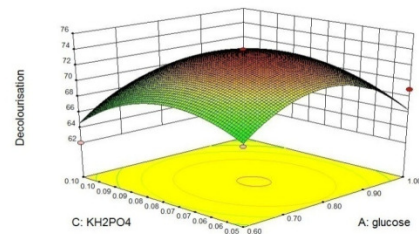
Values of "Prob > F" less than 0.0500 indicate model terms are significant. In this case C, BC, A², B², C² are significant model terms.

Std DEV	Mean	C.V %	PRESS	R- Squared	Adj R- squared	Pred R squared	Adeq Recession
372.96	4925.65	7.57	8.775E+006	0.9108	0.8304	0.4370	10.037

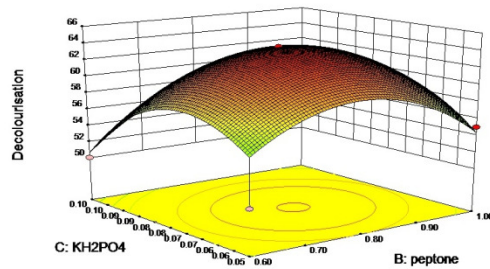
Effect of Interaction between nutrients



Glucose and Peptone

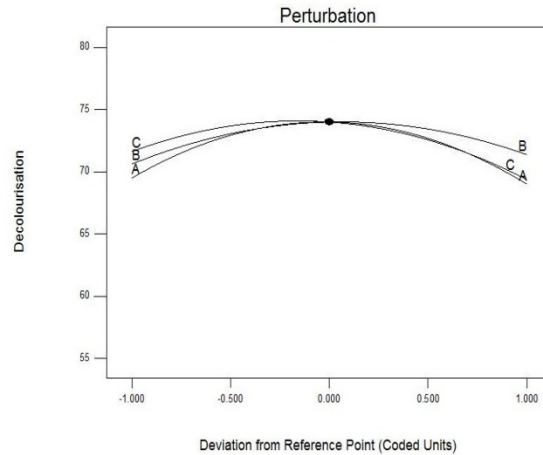


Glucose and KH₂PO₄



Interaction between Peptone and KH₂PO₄

The advantage of using RSM is that the prediction of limiting nutrient which is given by the perturbation graph. Here “A” i.e. glucose is the limiting nutrient



Perturbation graph for prediction of limiting nutrient

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