

Table 1: Statistical Mean (M), Std. Deviation (SD), Std. Error (SE) and P value for relative seed germination, dry biomass, root length and plant height at four different concentrations of biosurfactant produced by *Bacillus subtilis* SNW3 used for four different plant species.

		Control				0.1g				0.3g				0.5g				0.7g			
		M	SD	SE	P	M	SD	SE	P	M	SD	SE	P	M	SD	SE	P	M	SD	SE	p
Root length	Chilli	1.01	.43	.13	.00	.93	.32	.08	.00	1.72	.49	.12	.00	1.87	.45	.08	.00	1.87	.53	.09	.00
	Tomato	2.15	.46	.08		2.53	.38	.07		2.67	.42	.074		2.86	.36	.06		3.08	.51	.08	
	Pea	1.56	1.05	.26		2.15	.42	.13		2.45	.36	.11		2.59	.49	.12		2.89	.53	.14	
	Lettuce	1.50	.29	.51		1.81	.23	.04		1.91	.34	.06		2.39	.34	.06		2.74	.46	.08	
% Germination	Chilli	21.6	15.47	5.85	.00	28.21	17.31	6.54	.02	26.07	18.65	7.05	.00	51.79	28.16	10.64	.03	48.21	27.72	10.48	.02
	Tomato	56.25	24.69	10.08		55.83	24.88	10.16		62.50	24.19	9.87		62.92	26.00	10.61		68.75	27.92	11.39	
	Pea	19.43	13.25	5.49		24.40	15.84	6.47		29.42	13.42	5.48		32.75	22.34	9.12		37.20	16.39	6.69	
	Lettuce	20.50	12.93	5.28		22.50	13.11	5.35		25.83	12.82	5.23		24.00	11.69	4.77		26.50	12.18	4.97	
Plant height	Chilli	5.35	.61	.16	.00	5.27	.94	.25	.00	5.99	.54	.13	.00	8.08	.39	.07	.00	8.06	.39	.07	.00
	Tomato	5.97	.66	.12		6.37	.50	.09		6.92	.43	.08		7.28	.61	.10		7.65	.96	.16	
	Pea	10.62	.32	.12		11.22	.24	.07		11.54	.39	.11		12.58	.39	.09		12.65	.48	.12	
	Lettuce	5.26	.61	.12		5.58	.40	.07		5.73	.37	.06		6.00	.29	.05		6.22	.37	.06	
Dry biomass	Chilli	.06	.02	.01	.00	.07	.03	.01	.00	.14	.03	.01	.00	.20	.03	.00	.00	.21	.03	.01	.00
	Tomato	.08	.03	.00		.11	.02	.00		.13	.02	.01		.16	.03	.005		.19	.03	.006	
	Pea	1.52	.19	.06		1.68	.18	.06		1.98	.23	.07		2.02	.26	.07		2.21	.22	.06	
	Lettuce	.06	.03	.004		.06	.02	.004		.15	.04	.006		.23	.06	.01		.25	.12	.02	

Table 2: Low-cost substrate screening design for surfactin BY *Bacillus subtilis* SNW3.

Substrate's screening Model	Yeast extract (Y.E)	Potato pees powder (P.P.P)	White beans powder (W.B.P)	Molasses (Mol)	Waste frying oil (W.F.O)	Sodium nitrate	Ammonium nitrate	Urea	Water
						0.1%			100 mL
B							0.1%		100 mL
C								0.1%	100 mL
D	2%								100 mL
E		2%							100 mL
F			2%						100 mL
G				2%					100 mL
E					2%				100 mL
F			3%		2%			0.1%	100 mL
G			6%		1.5%			0.1%	100 mL
H			8%		1%			0.1%	100 mL
I			11%		0.5%			0.1%	100 mL