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APPENDIX

APPENDIX

Table1 Data of Figure 5.7

Gelatin concentration (%w/v) in culture medium	Tensile strength for dried film (MPa)						
	1	2	3	4	5	Average	S.D.
0	52.65	65.86	59.28	64.86	72.45	63.02	7.45
1	57.82	57.67	52.55	57.90	57.72	56.73	2.34
3	62.82	47.81	52.89	57.63	40.12	52.25	8.77
5	32.71	32.65	30.16	30.13	29.31	30.99	1.58
7	33.66	29.23	32.23	28.59	32.13	31.17	2.16
10	27.46	25.06	28.16	34.50	31.49	29.33	3.69

Table2 Data of Figure 5.7

Gelatin concentration (%w/v) in culture medium	Tensile strength for reswollen film (MPa)						
	1	2	3	4	5	Average	S.D.
0	8.82	8.79	8.37	8.45	7.16	8.32	0.68
1	7.99	6.81	6.00	9.02	9.23	7.81	1.40
3	2.17	10.17	5.83	3.17	7.33	5.73	3.22
5	0.01	0.01	0.01	0.04	0.05	0.02	0.02
7	0.01	0.08	0.01	0.03	0.03	0.03	0.03
10	0.08	0.01	0.03	0.01	0.03	0.03	0.03

Table3 Data of Figure 5.8

Gelatin concentration (%w/v) in culture medium	Elongation at break for dried film (%)						
	1	2	3	4	5	Average	S.D.
0	1.27	1.15	1.28	1.59	1.66	1.39	0.22
1	1.04	1.55	1.57	1.11	1.34	1.32	0.24
3	1.49	0.87	0.94	1.75	1.38	1.29	0.37
5	0.60	0.78	0.68	0.79	0.97	0.76	0.14
7	0.93	0.62	1.00	0.65	0.65	0.77	0.18
10	1.59	1.01	0.72	1.02	0.85	1.04	0.33

Table4 Data of Figure 5.8

Gelatin concentration (%w/v) in culture medium	Elongation at break for reswollen film (%)						
	1	2	3	4	5	Average	S.D.
0	20.20	30.21	18.86	17.54	16.69	20.70	5.48
1	20.94	11.61	12.89	21.82	18.99	17.25	4.70
3	17.85	18.72	10.80	15.91	14.29	15.51	3.15
5	7.12	9.26	6.54	8.78	11.91	8.72	2.11
7	11.15	15.27	7.96	7.54	7.20	9.82	3.43
10	6.83	7.91	7.33	7.68	6.94	7.34	0.46

Table5 Data of Figure 5.9

Gelatin concentration (%w/v) in culture medium	Water absorption capacity (%)				
	1	2	3	Average	S.D.
0	618.81	616.49	606.24	613.85	6.69
1	647.92	656.13	655.68	653.24	4.61
3	772.27	745.66	769.66	762.53	14.67
5	708.05	723.27	732.48	721.27	12.34
7	669.36	661.65	697.97	676.33	19.13
10	709.69	700.16	688.94	699.59	10.39

Table6 Data of table 5.1

Gelatin concentration (%w/v) in culture medium	OTR ($cc/m^2/day$)			
	1	2	Average	S.D.
0	1.62	1.55	1.59	0.05
3	1.62	1.58	1.60	0.03
5	2.65	2.65	2.65	0.00
10	1.69	1.79	1.74	0.07

Table7 Data of Figure 5.10

Gelatin concentration (%w/v) in culture medium	WVTR ($g/m^2/day$)			
	1	2	Average	S.D.
0	1128	923	1026	144.96
3	683	500	592	129.40
5	859	911	885	36.77
10	674	668	671	4.24

Table8 Data of Figure 5.16

Gelatin concentration (%w/w) in impregnated solution	Tensile strength for dried film (MPa)						
	1	2	3	4	5	Average	S.D.
0	50.17	50.17	62.67	45.96	62.62	54.32	7.79
15	29.04	40.44	33.43	33.50	32.50	33.78	4.14
30	10.13	10.74	13.95	12.67	10.13	11.53	1.71

Table9 Data of Figure 5.16

Gelatin concentration (%w/w) in impregnated solution	Tensile strength for reswollen film (MPa)						
	1	2	3	4	5	Average	S.D.
0	11.19	9.99	10.77	10.15	9.21	10.26	0.76
15	0.38	0.52	0.31	0.49	0.45	0.43	0.09
30	0.49	0.51	0.13	0.28	0.48	0.38	0.17

Table10 Data of Figure 5.17

Gelatin concentration (%w/w) in impregnated solution	Elongation at break for dried film (%)						
	1	2	3	4	5	Average	S.D.
0	2.12	1.42	1.97	1.33	1.80	1.73	0.34
15	0.32	0.38	0.94	2.63	2.64	1.38	1.17
30	0.46	0.43	0.46	0.50	0.44	0.46	0.03

Table11 Data of Figure 5.17

Gelatin concentration (%w/w) in impregnated solution	Elongation at break for reswollen film (%)						
	1	2	3	4	5	Average	S.D.
0	24.18	22.67	24.56	25.14	24.18	24.15	0.91
15	22.22	21.51	21.16	21.04	21.67	21.52	0.47
30	19.08	15.37	16.94	16.66	18.14	17.24	1.42

Table12 Data of Figure 5.18

Gelatin concentration (%w/w) in impregnated solution	Water absorption capacity (%)				
	1	2	3	Average	S.D.
0	589.11	617.36	611.34	605.94	14.88
15	668.57	670.03	653.93	644.18	8.90
30	664.08	700.46	669.28	677.94	19.68

Table13 Data of table 5.2

Gelatin concentration (%w/w) in impregnated solution	OTR ($cc/m^2/day$)			
	1	2	Average	S.D.
0	2.44	2.89	2.67	0.32
15	1.68	1.44	1.56	0.17
30	1.66	1.64	1.65	0.01

Table14 Data of Figure 5.19

Gelatin concentration (%w/w) in impregnated solution	WVTR (g/m²/day)			
	1	2	Average	S.D.
0	1328	1222	1275	75
15	1485	1498	1492	9
30	1540	1513	1527	19

Table15 Data of Figure 5.22

Absorbance					
Type of film		BC	Biosyn-BCG5	Biosyn-BCG10	Impreg-BCG15
0 hr	1	0.314	0.145	0.250	0.218
	2	0.324	0.163	0.251	0.134
	3	0.255	0.169	0.267	0.118
	Average	0.298	0.159	0.256	0.157
	SD	0.037	0.012	0.010	0.054
24 hr	1	0.368	0.248	0.392	0.127
	2	0.351	0.222	0.315	0.148
	3	0.408	0.235	0.318	0.167
	Average	0.376	0.235	0.342	0.147
	SD	0.029	0.013	0.044	0.020
48hr	1	0.523	0.236	0.558	0.128
	2	0.462	0.285	0.561	0.137
	3	0.459	0.34	0.649	0.153
	Average	0.481	0.287	0.589	0.139
	SD	0.036	0.052	0.052	0.013

VITAE

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2. BACTERIAL CELLULOSE-GELATIN FILM FROM MICROBIAL SYNTHESIS BY *ACETOBACTER XYLINUM* in the 3rd Technology and Innovation for Sustainable Development International conference 2010 (TISD 2010) on 4-6 March, 2010 at Royal Mekong Nongkhai Hotel, Thailand, pp.1099-1102.