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APPENDIX

A1. Data for tensile strength at yield of tapioca starch-based HDPE blends

Starch content (%)	Tensile Strength at Yield (MPa) of Tapioca Starch-Based HDPE Blends						
	X ₁	X ₂	X ₃	X ₄	X ₅	mean	SD
0	22.40	22.11	22.57	22.46	22.37	22.38	0.169
5	20.82	20.91	21.05	20.89	21.07	20.95	0.109
10	19.06	19.10	19.14	19.33	19.23	19.17	0.108
15	17.78	17.78	17.48	17.94	17.81	17.76	0.167
20	16.22	16.54	16.14	16.16	16.08	16.23	0.182
25	14.77	14.77	14.8	14.86	14.89	14.82	0.054
30	13.29	13.41	13.36	13.28	13.42	13.35	0.066
35	12.06	12.05	11.98	12.12	12.08	12.06	0.051
40	11.00	10.97	11.00	11.00	11.18	11.03	0.086

A2. Data for tensile strength at yield of rice starch-based HDPE blends

Starch content (%)	Tensile Strength at Yield (MPa) of Rice Starch-Based HDPE Blends						
	X ₁	X ₂	X ₃	X ₄	X ₅	mean	SD
0	22.40	22.11	22.57	22.46	22.37	22.38	0.169
5	20.68	20.77	20.26	20.61	20.72	20.61	0.202
10	18.85	19.24	19.35	19.53	19.54	19.30	0.282
15	16.96	17.23	17.14	17.47	17.48	17.23	0.220
20	16.18	16.01	16.19	16.04	15.88	16.06	0.127
25	14.39	14.15	13.93	13.92	14.03	14.09	0.196
30	12.95	13.06	13.01	12.92	12.99	12.98	0.054
35	11.87	11.79	11.52	11.75	11.70	11.73	0.130
40	10.92	10.88	10.87	10.97	10.96	10.92	0.046

A3. Data for percent strain at yield of tapioca starch-based HDPE blends

Starch content (%)	Percent Strain at Yield of Tapioca Starch-Based HDPE Blends						
	X ₁	X ₂	X ₃	X ₄	X ₅	mean	SD
0	9.84	10.34	9.66	9.77	10.17	9.96	0.285
5	9.84	10.01	9.53	9.68	9.97	9.81	0.203
10	9.93	10.15	9.61	9.85	9.81	9.87	0.195
15	9.42	9.42	9.49	9.54	9.50	9.48	0.053
20	9.26	9.19	9.34	9.58	9.07	9.29	0.191
25	8.22	8.46	8.78	8.74	8.20	8.48	0.276
30	8.01	8.12	8.04	7.84	7.88	7.98	0.117
35	7.07	7.05	7.03	6.90	7.37	7.08	0.173
40	5.00	5.02	5.11	5.02	5.24	5.08	0.097

A4. Data for percent strain at yield of rice starch-based HDPE blends

Starch content (%)	Percent Strain at Yield of Rice Starch-Based HDPE Blends						
	X ₁	X ₂	X ₃	X ₄	X ₅	mean	SD
0	9.84	10.34	9.66	9.77	10.17	9.96	0.285
5	9.79	9.73	9.79	9.75	9.95	9.80	0.086
10	9.21	9.37	9.46	9.79	9.43	9.32	0.220
15	9.21	9.21	9.24	8.59	8.83	9.01	0.291
20	8.00	8.17	8.43	7.87	8.48	8.19	0.267
25	7.61	7.97	7.30	7.66	7.68	7.65	0.238
30	5.64	6.26	5.96	6.55	6.11	6.10	0.339
35	4.66	4.90	4.78	4.76	4.68	4.76	0.940
40	3.37	3.29	3.06	3.66	3.05	3.28	0.254

A5. Data for tensile modulus of tapioca starch-based HDPE blends

Starch content (%)	Tensile Modulus (MPa) of Tapioca Starch-Based HDPE Blends						
	X ₁	X ₂	X ₃	X ₄	X ₅	mean	SD
0	1123.00	1166.33	1310.33	1353.00	1477.00	1285.80	143.627
5	1280.00	1146.00	1295.00	1246.00	1136.00	1220.60	74.885
10	1330.00	1321.00	1384.00	1369.00	1453.00	1371.40	52.624
15	1354.00	1525.00	1574.00	1380.00	1318.00	1430.20	112.451
20	1837.00	1720.00	1770.00	1933.00	1739.00	1799.80	86.716
25	2497.00	2674.00	2013.00	2156.00	2539.00	2375.00	278.470
30	2828.00	2828.00	2835.00	2851.00	2726.00	2813.60	49.863
35	2923.00	2912.00	3013.00	3082.00	2997.00	2985.40	69.838
40	3285.00	3211.00	3328.00	3377.00	3105.00	3261.20	106.485

A6. Data for tensile modulus of rice starch-based HDPE blends

Starch content (%)	Tensile Modulus (MPa) of Rice Starch-Based HDPE Blends						
	X ₁	X ₂	X ₃	X ₄	X ₅	mean	SD
0	1123.00	1166.33	1310.33	1353.00	1477.00	1285.80	143.627
5	1493.00	1476.00	1353.00	1447.00	1499.00	1453.00	59.748
10	1619.00	1457.00	1717.00	1678.00	1484.00	1591.00	115.795
15	1836.00	1856.00	1961.00	1948.00	1900.00	1900.20	54.902
20	2192.00	2079.00	2346.00	2125.00	2196.00	2187.60	101.110
25	2743.00	2608.00	2555.00	2680.00	2622.20	2525.00	89.581
30	2892.00	2734.00	2898.00	2939.00	2928.00	2878.20	82.995
35	3129.00	3007.00	3069.00	3011.00	3106.00	3064.40	54.935
40	3317.00	3211.00	3234.00	3241.00	3257.00	3252.00	39.9250

A7. Data for flexural strength at yield of tapioca starch-based HDPE blends

Starch content (%)	Flexural Strength at Yield (MPa) of Tapioca Starch-Based HDPE Blends						
	X ₁	X ₂	X ₃	X ₄	X ₅	mean	SD
0	30.78	30.50	30.96	30.64	30.67	30.71	0.174
5	29.91	29.89	29.64	29.98	29.78	29.84	0.132
10	29.69	28.83	29.38	29.30	29.35	29.31	0.310
15	29.17	29.18	28.91	28.70	29.01	28.99	0.200
20	27.48	27.58	27.56	27.32	27.67	27.52	0.131
25	26.88	26.54	26.68	26.57	26.77	26.69	0.142
30	25.67	25.45	26.02	25.68	26.04	25.77	0.251
35	24.02	25.15	24.90	24.49	25.00	24.71	0.459
40	24.43	24.58	24.12	24.11	24.78	24.41	0.291

A8. Data for flexural strength at yield of rice starch-based HDPE blends

Starch content (%)	Flexural Strength at Yield (MPa) of Rice Starch-Based HDPE Blends						
	X ₁	X ₂	X ₃	X ₄	X ₅	mean	SD
0	30.78	30.50	30.96	30.64	30.67	30.71	0.174
5	29.59	29.90	29.76	29.92	29.44	29.72	0.209
10	28.63	28.67	28.56	28.57	28.45	28.58	0.083
15	27.01	27.41	27.12	27.16	27.27	27.19	0.154
20	27.15	26.93	26.46	26.58	26.80	26.78	0.271
25	25.01	25.61	26.64	25.63	25.23	25.42	0.291
30	25.16	25.16	24.72	24.56	25.05	24.93	0.275
35	25.06	24.67	24.23	24.33	24.59	24.57	0.325
40	23.97	23.67	23.62	23.51	23.45	23.64	0.204

A9. Data for flexural modulus of tapioca starch-based HDPE blends

Starch content (%)	Flexural Modulus (MPa) of Tapioca Starch-Based HDPE Blends						
	X ₁	X ₂	X ₃	X ₄	X ₅	mean	SD
0	1000.31	994.89	988.21	971.72	946.70	980.37	21.671
5	1117.75	1131.10	1167.78	1200.07	1261.80	1175.70	57.917
10	1184.77	1286.82	1184.28	1158.57	1193.38	1201.56	49.41
15	1255.42	1255.13	1293.68	1247.26	1276.21	1265.54	19.043
20	1318.28	1363.47	1389.62	1397.05	1345.46	1362.78	32.306
25	1464.57	1426.53	1435.11	1447.83	1467.85	1448.38	17.994
30	1615.31	1583.00	1611.64	1566.88	1611.54	1604.87	32.279
35	1786.95	1778.39	1626.74	1663.55	1708.39	1712.81	70.092
40	1786.82	1798.96	1862.83	1785.28	1829.22	1812.62	33.150

A10. Data for flexural modulus of rice starch-based HDPE blends

Starch content (%)	Flexural Modulus (MPa) of Rice Starch-Based HDPE Blends						
	X ₁	X ₂	X ₃	X ₄	X ₅	mean	SD
0	1000.31	994.89	988.21	971.72	946.70	980.37	21.671
5	1100.20	1115.01	1158.42	1137.13	1114.44	1125.04	22.860
10	1165.11	1188.62	1197.45	1146.87	1166.47	1172.90	20.183
15	1191.71	1201.49	1251.94	1193.28	1201.24	1207.93	25.005
20	1311.48	1332.75	1327.97	1314.87	1324.74	1322.36	8.939
25	1312.53	1356.54	1349.21	1330.28	1311.43	1331.99	20.637
30	1442.45	1420.92	1442.48	1430.86	1420.68	1431.42	10.763
35	1551.45	1527.31	1494.55	1526.50	1501.23	1520.21	22.828
40	1609.82	1692.53	1812.08	1759.39	1681.83	1711.13	77.439

A11. Data for impact strength of tapioca starch-based HDPE blends

Starch content (%)	Impact Strength (kJ/m ²) of Tapioca Starch-Based HDPE Blends						
	X ₁	X ₂	X ₃	X ₄	X ₅	mean	SD
0	21.0	21.0	21.4	20.7	20.5	20.92	0.342
5	10.7	10.9	10.8	10.7	10.7	10.76	0.089
10	11.7	11.6	11.7	11.8	11.8	11.72	0.083
15	14.2	14.5	14.1	14.1	14.0	14.18	0.192
20	17.0	17.6	17.2	17.4	17.3	17.3	0.223
25	19.4	19.3	20.2	19.9	19.9	19.74	0.378
30	24.1	24.2	23.8	23.6	24.2	23.98	0.268
35	25.2	24.0	24.8	25.3	24.2	24.7	0.583
40	24.1	25.1	24.7	24.7	25.2	24.76	0.433

A12. Data for impact strength of rice starch-based HDPE blends

Starch content (%)	Impact Strength (kJ/m ²) of Rice Starch-Based HDPE Blends						
	X ₁	X ₂	X ₃	X ₄	X ₅	mean	SD
0	21.0	21.0	21.4	20.7	20.5	20.92	0.342
5	11.1	11.9	10.9	11.4	10.9	11.24	0.422
10	11.7	11.6	11.4	11.5	11.6	11.56	0.114
15	11.6	10.8	11.6	11.2	11.1	11.26	0.343
20	10.6	10.4	10.3	10.3	10.7	10.46	0.182
25	10.0	10.6	10.4	10.8	10.3	10.42	0.303
30	9.7	9.7	9.4	9.3	9.3	9.48	0.205
35	8.1	7.6	7.7	7.9	7.4	7.74	0.270
40	6.7	7.0	7.0	6.5	7.0	6.84	0.230

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