

LIST OF TABLES

Table No.	Table Title	Page No.
2.1	Chemical composition of cellulosic and lignocellulosic fiber	24
2.2	Physico mechanical properties of some selected plant fibers	25
2.3	District wise area, production & productivity of banana in Gujarat	29
2.4	Overview of linkages between the monomer units that form the individual polymers lignin, cellulose and hemicellulose, and between the polymers to form lignocellulose	39
2.5	Functional groups in components of lignocellulose	40
2.6	Effect of NaOH on different fibers	43
2.7	Physical properties of cotton and regenerated fibers	50
3.1	Contact details of organisations from where banana fiber were procured	77
3.2	Variables studied for bleaching banana fibers using hydrogen peroxide to optimize treatment parameters	83
3.3	Variables studied for softening banana fibers using individual enzymes	87
3.4	Fabric code and its specifications	94
3.5	Application condition for padding	96
4.1	Chemical composition of raw banana fiber	101
4.2	Chemical constituents of untreated and treated fibers	106
4.3	Recipe for chemical treatment	107
4.4	Interpolymer and Intrapolymer linkages of lignocellulose	111
4.5	Optimised conditions for enzymes treatment of banana fiber	112
4.6	Effective of FFT apparatus on post treatment weight loss	114
4.7	Percent weight loss of enzyme and chemical treated banana fibers	116
4.8	Bundle strength of enzyme and chemical treated banana fibers	117
4.9	Average load elongation and stress strain values of banana fibers	118
4.10 (a)	Fineness of untreated and treated banana fiber	121
4.10 (b)	Whiteness index and yellowness index of untreated and treated banana fiber	122
4.11	Chemical composition of untreated and treated banana fibers	124
4.12	FTIR absorbance band in lignocellulosic biomass	129

4.13	Effluent characteristics from textile Industry	133
4.14	Wastewater analysis	134
4.15	Fineness of spun banana yarn	136
4.16	Yarn strength and elongation of hand spun yarns	139
4.17	Yarn twist of hand spun banana yarns	140
4.18	Details of pilot fabrics prepared at TRADC	141
4.19	Fineness of spun yarn	145
4.20	Yarn strength and elongation of banana blends with regenerated fibers	146
4.21	Yarn twist of regenerated fibers and banana blended yarns	149
4.22	Yarn specifications for fabrics constructed	150
4.23	Preliminary data of the fabric constructed	151
4.24	Percent shrinkage in banana fabrics	152
4.25	Bending length of Untreated Cotton Banana Fabric	157
4.26	Bending length of Enzyme treated Cotton Banana Fabric	158
4.27	Bending length of Chemical treated Cotton Banana Fabric	158
4.28	Bending length of Viscose Banana Chemical Treated Fabric	159
4.29	Bending length of Modal Banana Chemical Treated Fabric	160
4.30	Bending length of Excel Banana Chemical Treated Fabric	160
4.31	Bending length of Viscose Banana Enzyme Treated Fabric	160
4.32	Cover factor of constructed banana fabrics	161
4.33	Drape coefficient of constructed banana fabrics	163
4.34	Load elongation values of constructed banana fabrics	168
4.35	Primary and total hand values (Men's Suiting)	170
4.36	Compression properties using compression tester	170
4.37	Fabric weight and thickness	171
4.38	Tensile properties using tensile tester	172
4.39	Shear properties using shear tester	173
4.40	Bending properties using pure bending tester	173
4.41	Surface properties using surface tester	174
4.42	Chemical treatment costing	178