

## LIST OF TABLES

Table no.	Title	Page no.
2.1	Top ten countries for number of persons with Diabetes	16
2.2.a	Prevalence of diabetes and IGT at a glance	17
2.2 .b	Highest numbers of diabetes in SEA region	20
2.3	Statistics of diabetes in India, 2012	24
2.4	Summary of percent prevalence of diabetes in Gujarat region	25
2.5	Present diagnostic criteria for diabetes, and non-diabetic hyperglycemia (IFG and IGT) according to serum/plasma levels	31
2.6	Health benefits of probiotics	71-72
2.7	Classification of Prebiotics	76
4.1.1	Specification of the Fructooligosaccharide used for Substitution	121
4.1.2	List of Raw Ingredients along with their Sources used for Product Preparation	122
4.2.1	Moisture (g%) Content in Samples Selected for Analysis (per 100g)	130
4.3.6	Cut Offs for Physical activity levels (PAL)	142
4.3.7.1	BMI Cut-offs	146
4.3.7.2	Cut offs for Waist –Hip Ratio (WHR)	147
4.3.8	Classification of Blood Pressure for Adults	148
4.3.9.1	Cut offs for HbA <sub>1c</sub>	149
4.3.9.2	Cut offs for Serum Cholesterol	150
4.3.9.3	Cut offs for Triglycerides	151
4.3.9.4	Cut offs for HDL-Cholesterol	152
4.3.9.5	Cut offs for LDL-Cholesterol	153
5.0.1.1	Physical properties of FOS substituted <i>chapati</i>	164
5.0.1.2	Effect of varying levels of FOS substitution on the organoleptic qualities of <i>chapati</i>	166
5.0.1.3	Number of panel members indicating the difference in the organoleptic attributes of <i>chapati</i>	169
5.0.2.1	Physical properties of FOS substituted <i>thepla</i>	170
5.0.2.2	Effect of varying levels of FOS substitution on the organoleptic qualities of <i>thepla</i>	173
5.0.2.3	Number of panel members indicating the difference in the organoleptic attributes of <i>thepla</i> in a difference test	174
5.0.3.1	Physical properties of FOS substituted <i>dhokla</i>	177
5.0.3.2	Effect of varying levels of FOS substitution on the organoleptic qualities of <i>dhokla</i>	180

Table no.	Title	Page no.
5.0.3.3	Number of panel members indicating the difference in the organoleptic attributes of <i>dhokla</i> in a difference test	181
5.0.4.1	Physical properties of FOS substituted <i>patra</i>	184
5.0.4.2	Effect of varying levels of FOS substitution on the organoleptic qualities of <i>patra</i>	186
5.0.4.3	Number of panel members indicating the difference in the organoleptic attributes of <i>patra</i> in a difference test	187
5.1.2.1	Recovery of FOS in the food products	195
5.2.1	General characteristics of type 2 diabetic subjects	204
5.2.2	Duration of type 2 diabetes and associated complications	206
5.2.3	Family history of type 2 diabetic subjects	207
5.2.4	Distribution of type 2 diabetic subjects according to physical activity pattern	208
5.2.5.1	Mean values of anthropometric measurements of the subjects	210
5.2.5.2	Classification of type 2 diabetic subjects according to Asia Pacific classification	210
5.2.6.1	Mean values for biophysical and biochemical profile of type 2 diabetic subjects	212
5.2.6.2	Glycemic, Lipemic and Biophysical status of the subjects categorized as good, borderline and poor	213
5.2.6.3	Anthropometric, biophysical and biochemical profile of the subjects based on age groups of diabetes	217
5.2.6.4	Anthropometric, biophysical and biochemical profile of the subjects based on family history of diabetes	218
5.2.6.5	Anthropometric, biophysical and biochemical profile of the subjects based on duration of diabetes	219
5.2.6.6	Anthropometric, biophysical and biochemical profile of the subjects based on BMI of diabetes	220
5.2.6.7	Anthropometric, biophysical and biochemical profile of the subjects based on HbA <sub>1c</sub> of diabetes	221
5.2.7.1	Food habits of type 2 diabetic subjects	222
5.2.7.2	Mean intake of nutrients of type 2 diabetic subjects as per 24 hr dietary recall	224
5.2.7.3	Mean intake of Fatty acids and Dietary fiber by type 2 Diabetic subjects as per mean 3 day 24 hr dietary recall	225
5.2.8.1	Frequency of consumption of food groups by the subjects as per food frequency method	227
5.2.9.1	Mean Log values for microbial parameters of type 2 diabetic subjects	229

Table no.	Title	Page no.
5.2.9.2	Anthropometric, biophysical biochemical profile total dietary fiber of the subjects based on <i>Bifidobacterial</i> counts	230
5.2.10.1.a	Correlation values determining the degree of association amongst lifestyle factors, glycemic parameters, dietary and microbial parameters of type 2 diabetic subjects	233
5.2.10.1.b	Correlation values determining the degree of association amongst lifestyle factors, lipemic parameters, dietary and anthropometric parameters	234
5.2.10.2	Correlation values determining the degree of association amongst glucose parameters and microbial parameters of type 2 diabetic subjects	235
5.2.11.1	Predictor variables identified for most affecting variables	236
5.2.11.2	Coefficient of relationships of glycemic parameters with baseline, anthropometric, biochemical and dietary parameters	237
5.3.1.1	Anthropometric and Biophysical profile of type 2 diabetic subjects before and after FOS supplementation	250
5.3.1.2	Body composition and biophysical parameters of male and female subjects before and after supplementation	257
5.3.2.1	Nutrient intake of type 2 diabetic subjects before and after FOS supplementation	252
5.3.3.1	Glycemic response and GLP-1 values of type 2 diabetic subjects before and after FOS supplementation	253
5.3.3.2	Glycemic response and GLP-1 values of male and female subjects before and after FOS supplementation	256
5.3.3.3	Glycemic response and GLP-1 values of the subjects before and after FOS supplementation with initial glycated hemoglobin levels $>8$ and $<8$	257
5.3.3.4	Glycemic response of the subjects before and after FOS supplementation with initial BMI levels $<23$ and $\geq 23$	258
5.3.3.5	Glycemic response of the subjects before and after FOS supplementation with initial GLP-1 levels $<0.3$ and $>0.3$	259
5.3.4.1	Lipemic response of the subjects before and after FOS supplementation	260
5.3.4.2	Lipemic response of male and female subjects before and after FOS supplementation	262
5.3.4.3	Lipemic response of the subjects before and after FOS supplementation with initial glycated hemoglobin levels $<$ and $\geq 8$	264
5.3.4.4	Lipemic response of the subjects before and after FOS supplementation with initial BMI levels $<23$ and $\geq 23$	265

Table no.	Title	Page no.
5.4.1.1	Atherogenic indices of the subjects before and after supplementation	266
5.4.1.2	Atherogenic indices of male and female subjects before and after supplementation	267
5.5.1	Gut microbial counts of the subjects before and after supplementation	268
5.5.2	Gut microbial counts of male and female subjects before and after supplementation	273
5.5.3	Gut microflora counts ( $\log_{10}$ cfu/ml) of the subjects before and after FOS supplementation with initial glycated hemoglobin levels $< 8$ or $\geq 8$	274
5.6.1	Correlation amongst anthropometric, biophysical parameters and glycemic parameters of type 2 diabetic subjects (r value)	275
5.6.2	Correlation amongst anthropometric, biophysical parameters and lipemic parameters of type 2 diabetic subjects (r value)	276
5.6.3	Correlation amongst anthropometric, biophysical, glycemic, GLP-1, lipemic parameters and gut microflora of type 2 diabetic subjects (r value)	277
5.7.1.a	Model summary of relationship of FBS and PP2BS with biophysical, biochemical, anthropometric and microbial parameters	278
5.7.1.b	ANOVA of relationship of FBS and PP2BS with biophysical, biochemical, anthropometric and microbial parameters	279
5.7.1.c	Coefficient of relationship of FBS with biophysical, biochemical, anthropometric and microbial parameters	279
5.7.1.d	Coefficient of relationship of PP2BS with biophysical, biochemical, anthropometric and microbial parameters	280
5.7.2.a	Model summary of relationship of HbA <sub>1c</sub> and GLP-1 with biophysical, biochemical, anthropometric and microbial parameters	281
5.7.2.b	ANOVA of relationship of HbA <sub>1c</sub> and GLP-1 with biophysical, biochemical, anthropometric and microbial parameters	282
5.7.2.c	Coefficient of relationship of HbA <sub>1c</sub> with biophysical, biochemical, anthropometric and microbial parameters	283
5.7.2.c	Coefficient of relationship of GLP-1 with biophysical, biochemical, anthropometric and microbial parameters	284