

**Laboratory** National Food Testing Laboratory (NFTL), Bhutan Agriculture and Food Regulatory Authority (BAFRA), Yusipang, Thimphu, Bhutan

**Accreditation Standard** ISO/IEC 17025: 2005

**Certificate Number** TC-5463 (in lieu of T-2383, T-2382) **Page 1 of 5**

**Validity** 13.01.2017 to 12.01.2019 **Last Amended on 13.04.2017**

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
<b><u>BIOLOGICAL TESTING</u></b>				
<b>I. FOOD &amp; AGRICULTURAL PRODUCTS</b>				
<b>1.</b>	<b>Beverages, Products of Fruits &amp; Vegetables</b>	Total Plate Count	IS 5402 FAO manual of Food Quality control, 14/4, Chapter-2	≥ 1 cfu/ml ≥ 10 cfu/ gm
		Yeast & Mould Count	IS 5403 FAO manual of Food Quality control, 14/4, Chapter-19	≥ 1cfu/ ml ≥ 10 cfu/ gm
		Coli form	IS 5401(Part-2) FAO manual of Food Quality control, 14/4, Chapter-3	< 0.3 to >110 MPN <3 to >1100 MPN
		E coli	IS 5887(Part-1) FAO manual of Food Quality control, 14/4, Chapter-3	Presence/Absence
		Bacillus cereus	IS 5887(Part-6)	Presence/Absence
<b>2.</b>	<b>Bakery &amp; Cereal products</b>	Total Plate Count	IS 5402 FAO manual of Food Quality control, 14/4, Chapter-2	≥ 10 cfu/ gm
		Yeast & Mould Count	IS 5403 FAO manual of Food Quality control, 14/4, Chapter-19	≥ 10 cfu/ gm
		Coli form	IS 5401(Part-2) FAO manual of Food Quality control, 14/4, Chapter-3	< 3 to >110 MPN

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Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		E coli	IS 5887(Part-1) FAO manual of Food Quality control, 14/4, Chapter-3	Presence/Absence
		Salmonella	IS 5887(Part-3)	Presence/Absence
		Staphylococcus aureus	IS 5887 (Part-2)	Presence/Absence
		Bacillus cereus	IS 5887(Part-6)	Presence/Absence
3.	Milk and Dairy Products	Total Plate Count	IS 5402 FAO manual of Food Quality control, 14/4, Chapter-2	≥ 1cfu/ ml ≥ 10 cfu/ gm
		Yeast & Mould Count	IS 5403 FAO manual of Food Quality control, 14/4, Chapter-19	≥ 1cfu/ml ≥ 10 cfu/ gm
		Coli form	IS 5401(Part-2) FAO manual of Food Quality control, 14/4, Chapter-3	< 0.3 to > 110 MPN <3 to > 1100MPN
		E. coli.	IS 5887(Part-1) FAO manual of Food Quality control, 14/4, Chapter-3	Presence/Absence
		Salmonella	IS 5887(Part-3)	Presence/Absence
		Staphylococcus aureus	IS 5887 (Part-2)	Presence/Absence
		Bacillus cereus	IS 5887(Part-6)	Presence/Absence
4.	Canned/Raw Frozen meat	Total Plate Count	IS 5402 FAO manual of Food Quality control, 14/4, Chapter-2	≥ 10 cfu/ gm
		Yeast & Mould Count	IS 5403 FAO manual of Food Quality control, 14/4, Chapter-19	≥ 10 cfu/ gm

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		E coli	IS 5887(Part-1) FAO manual of Food Quality control, 14/4, Chapter-3	Presence/Absence
		Salmonella	IS 5887(Part-3)	Presence/Absence
		Staphylococcus aureus	IS 5887 (Part-2)	Presence/Absence
<b>II.</b>	<b>WATER</b>			
<b>1.</b>	<b>Drinking water, Raw water</b>	Total Plate Count	IS 5402 FAO manual of Food Quality control, 14/4, Chapter-2	≥ 1cfu/ ml
		Yeast & Mould Count	IS 5403 FAO manual of Food Quality control, 14/4, Chapter-19	≥ 1cfu/ml
		Coli form	IS 5401(Part-2) FAO manual of Food Quality control, 14/4, Chapter-3	< 0.3 to >110 MPN
		E coli	IS 5887(Part-1) FAO manual of Food Quality control, 14/4, Chapter-3	Presence/Absence
<b>III.</b>	<b>GMO TESTING</b>			
<b>1.</b>	<b>Corn, Soya, Egg Plant, Food &amp; Feed</b>	P 35S	SOP-A-1132	Detects 1 copy of target sequence
		t NOS	SOP-A-1033	Detects 1 copy of target sequence

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### CHEMICAL TESTING

<b>I. FOODS &amp; AGRICULTURAL PRODUCTS</b>				
1.	<b>Processed Fruits and Vegetable Products: Jam, Sauces, Pickles, Fruit Juices, Canned Fruits &amp; Vegetables, Marmalades</b>	Total Soluble Solids	IS 12711 FSSAI: 2016	1 % to 80 %
		Acidity	IS 12711 AOAC; 923.03	0.1 % to 10.0 %
2.	<b>Cereals and Cereal Products Biscuits, Maize Grits, Rice, Bread</b>	Moisture	IS 12711 FSSAI: 2016	0.1 % to 50 %
		Ash	IS 12711 AOAC; 923.03	0.1 % to 10.0 %
		Acid Insoluble Ash	IS 12711	0.01 % to 2.0 %
		Fat Content	IS12751	0.5 % to 40 %
		Acidity of Extracted Fat	IS12711, FSSAI: 2016	0.1% to 5.0 %
		Protein	AOAC 950.36; 920.87	0.5 % to 60 %
3.	<b>Tea</b>	Dry matter Content	IS 13853 AOAC; 925.19	10 % to 99 %
		Total ash	IS 13854, AOAC; 920.100	0.5 % to 15 %
		Water soluble ash	IS 13855	1 % to 10 %
		Acid insoluble Ash	IS 13857	0.05 % to 5 %
4.	<b>Beverages (Non Alcoholic)</b>	pH	AOAC 973.41 IS 3025 (P 11)	1.0 to 14.0
		Total Soluble Solids	AOAC 932.12 FSSAI: 2016 ISO 2173, IS 13815	1 % to 80 %
		Acidity	AOAC 942.15	0.1 % to 10.0 %
5.	<b>Milk and Dairy Products</b>	Acidity of milk (as Lactic acid)	AOAC 947.05	0.05 % to 0.2 %
		Ash of milk powder	AOAC 930.30	0.1 % to 10 %

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		Protein in milk	AOAC 19 <sup>th</sup> edn. Official method 991.20	1 % to 20 %
		Protein in milk powder	AOAC 19 <sup>th</sup> edn Official method 930.29	1 % to 50 %
6.	<b>Honey</b>	Acidity	FSSAI: 2012	0.1 % to 0.5 %
		Moisture content	AOAC 969.38 AOAC 920.180 FSSAI: 2012	13 % to 25 %
7.	<b>Oils and Fats</b>	Refractive index of oil	AOAC 921.08, FSSAI: 2016	1.4481 to 1.4710
		Peroxide value	AOAC 965.33	(1 to 15) meq peroxide/kg oil or fat
		Acid value of oil	AOAC 940.28, FSSAI: 2016	0.1 to 6
8.	<b>Alcoholic Beverages Whiskey, Beer and Wine</b>	Ethyl alcohol content % by volume	AOAC 19 <sup>th</sup> edn Official method 942.06	1 % to 99 %
II.	<b>WATER</b>			
1.	<b>Water Drinking Water, Raw Water</b>	pH	AOAC 973.41 IS 3025 (P 11)	1.00 to 14.00
		Total Dissolved Solids	IS 3025 (P 16) APHA: 2005 22 <sup>nd</sup> edn; 2540; 2.57	5 mg/l to 2000 mg/l
		Alkalinity	IS 3025 (P 23) AOAC 973.43	5 mg/l to 1000mg/ l
		Total hardness	AOAC 973.52 IS 14:2000 (Appendix-N) IS 3025 (P 21). APHA 22 <sup>nd</sup> edn; 2340; 2.57	5.0 mg/l to 1000 mg/l
2.	<b>Heavy Metals in Water</b>	Lead	AOAC 972.25 IS 3025 (P 47)	0.5 mg/l to 20 mg/l
		Cadmium	AOAC 973.34 IS 3025 (P 41)	0.5 mg/l to 20 mg/l
		Zinc	AOAC 969.32 IS 3025 (P 49)	0.5 mg/l to 25 mg/l