

Laboratory **Cali-Labs Private Limited, HX-21, E-7, Arera Colony, Bhopal, Madhya Pradesh**

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

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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
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**BIOLOGICAL TESTING**

<b>I. FOOD AND AGRICULTURAL PRODUCTS</b>				
<b>1.</b>	<b>Bakery &amp; Confectionary Products</b>	Total Bacterial Count	IS: 5402	≥10cfu / g
		Coliform	IS: 5401 (P-I)	≥10cfu / g Absent / Present / g
		Yeast & Mould	IS: 5403	≥10 cfu / g Absent / Present / g
		E. coli	IS: 5887 (P-I)	Absent / Present / 25g
		Listeria monocytogenes	IS: 14988 (P-1)	Absent / Present / g
<b>2.</b>	<b>Beverages (Alcoholic and Non Alcoholic)</b>	Bacillus cereus	IS: 5887 (P-6)	Absent / Present / g
		Bacterial Count	IS: 5402	≥1 cfu / ml
		E. coli	IS: 5887 (P-I)	Absent / Present / 25ml
		Coliform	IS: 5401 (P-I)	≥1cfu / ml Absent / Present / ml
		Staphylococcus aureus	IS: 5887 (P-2)	Absent / Present / 25ml
		Salmonella	IS: 5887 (P-3)	Absent / Present / 25ml
		Shigella	IS: 5887 (P-7)	Absent / Present / 25ml
		Vibrio cholerae	IS: 5887 (P-5)	Absent / Present / 25ml
		Vibrio parahaemolyticus	IS: 5887 (P-5)	Absent / Present / 25ml
		Listeria monocytogenes	IS: 14988 (P-1)	Absent / Present / ml
		Bacillus cereus	IS: 5887 (P-6)	Absent / Present / ml
		<b>3.</b>	<b>Canned and Processed Food</b>	Bacterial Count
E. coli	IS: 5887 (P-I)			Absent / Present / 25ml / 25g
Coliform	IS: 5401 (P-I)			≥1cfu / ml Absent / Present / ml / g
Staphylococcus aureus	IS: 5887 (P-2)			Absent / Present / 25ml / 25g
Salmonella	IS: 5887 (P-3)			Absent / Present / 25ml /

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				25g
		Shigella	IS 5887(P- 7)	Absent/ Present /25ml / 25g
		Listeria monocytogenes	IS:14988 (P-1)	Absent / Present / ml / g
		Bacillus cereus	IS:5887 (P- 6)	Absent / Present /ml / g
4.	Vegetable and Vegetable Products	Bacterial Count	IS: 5402	≥10cfu/g ≥1cfu/ml
		E. coli	IS: 5887 (P-I)	Absent / Present / 25g / ml
		Coliform	IS: 5401 (P-I)	≥10cfu/g ≥1cfu/ml
		Staphylococcus aureus	IS:5887(P-2)	Absent / Present / 25g / 25ml
		Salmonella	IS 5887(P- 3)	Absent / Present / 25 g / ml
		Shigella	IS 5887(P- 7)	Absent / Present / 25g / ml
		Listeria monocytogenes	IS:14988 (P-1)	Absent / Present /g / ml
		Bacillus cereus	IS:5887 (P- 6)	Absent / Present /g / ml
5.	Jam, Juice, Sauces & Concentrate / Fruit & Fruit Products / Honey & Honey Products	Bacterial Count	IS: 5402	≥10cfu / g ≥1cfu / ml
		E. coli	IS: 5887 (P-I)	Absent / Present /25g / ml
		Coliform	IS: 5401 (P-I)	≥10cfu / g/ ≥1cfu / ml
		Staphylococcus aureus	IS:5887(P-2)	Absent / Present / 25g / 25ml
		Salmonella	IS 5887(P- 3)	Absent / Present / 25g / 25ml
		Shigella	IS 5887(P- 7)	Absent / Present 25g / 25ml
		Listeria monocytogenes	IS:14988 (P-1)	Absent / Present / g / ml
		Bacillus cereus	IS:5887 (P- 6)	Absent / Present / g / ml

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6.	<b>Ready to Eat Food of All Types , Proprietary food Items / Specified Food Items Soya and Food Grain Products</b>	Bacterial Count	IS: 5402	≥10cfu / g ≥1cfu / ml		
		E. coli	IS: 5887 (P-I)	Absent / Present / 25g / 25ml		
		Coliform	IS: 5401 (P-I)	≥10cfu / g ≥1cfu / ml Absent / Present / g / ml		
		Staphylococcus aureus	IS:5887(P-2)	Absent / Present / 25g / 25ml		
		Salmonella	IS 5887(P- 3)	Absent / Present / 25g / 25ml		
		Shigella	IS 5887(P- 7)	Absent / Present 25g / 25ml		
		Listeria monocytogenes	IS:14988 (P-1)	Absent / Present /g / ml		
		Bacillus cereus	IS:5887 (P- 6)	Absent / Present /g / ml		
		7.	<b>Herbs, Spices &amp; Condiments</b>	Bacterial Count	IS: 5402	≥10cfu/g ≥1cfu/ml
				E. coli	IS: 5887 (P-I)	Absent / Present / 25g /ml
Coliform	IS: 5401 (P-I)			≥10cfu/g ≥1cfu/ml Absent / Present / g/ml		
Staphylococcus aureus	IS:5887(P-2)			Absent / Present / 25g / ml		
Salmonella	IS 5887(P- 3)			Absent / Present / 25 g / ml		
Shigella	IS 5887(P- 7)			Absent / Present / 25g		
Listeria monocytogenes	IS:14988 (P-1)			Absent / Present /g		
Bacillus cereus	IS:5887 (P- 6)			Absent / Present /g		
8.	<b>Milk and Dairy Products – Skimmed Milk Powder, Milk</b>	Bacterial Count	IS: 5402	≥10cfu/g ≥1cfu/ml		
		E.coli	IS: 5887 (P-I)	Absent/Present / 25g / 25ml		

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	<b>Powder, Dairy Whitener and Ice Creams</b>	Coliform	IS: 5401 (P-I)	≥10cfu/g ≥1cfu/ml Absent/Present/g/ml
		Staphylococcus aureus	IS:5887(P-2)	Absent/Present/0.1g/0.1ml
		Salmonella	IS 5887(P- 3)	Absent/Present /25g/25ml
		Shigella	IS 5887(P- 7)	Absent/Present /25g/25ml
		Yeast and Mould Count	IS 5403	≥10cfu/g ≥1cfu/ml Absent/Present /g/ml
		Anaerobic Bacteria in milk	IS 1479 (P- 3)	Absent/Present /ml
		Listeria monocytogenes	IS:14988 (P-1)	Absent / Present /g / ml
		Bacillus cereus	IS:5887 (P- 6)	Absent / Present /g / ml
<b>II.</b>	<b>WATER</b>			
<b>1.</b>	<b>Drinking Water / Water for Processed Food Industry / Water for Industrial Purpose / Ground Water / Surface Water / Packaged Drinking Water, Packaged Natural Mineral Water/ Water for Swimming Pool and Spas</b>	Standard Plate Count	IS : 3328	≥ 1 cfu / ml
		Aerobic Microbial Count @ 37 °C	IS : 5402 IS:15188	≥ 1 cfu / ml
		Aerobic Microbial Count @ 20-22 °C	IS : 5402 IS:15188	≥ 1 cfu / ml
		Yeast & Mould Count	IS 5403	Absent / Present / 250 ml
		Coliform	IS : 5401 (P- 1) IS:15185	Absent / Present / 250ml / 100 ml
		E coli	IS:5887(P- 1) IS:15185	Absent / Present / 250ml / 100 ml
		Faecal streptococci	IS:5887(P- 2) IS:15186	Absent / Present / 250 ml
		Staphylococcus aureus	IS:5887(P- 2)	Absent / Present / 250 ml
		Sulphite Reducing anaerobes	IS : 13428 Annex C	Absent / Present / 50 ml
		Pseudomonas aeruginosa	IS 3428	Absent / Present / 250 ml
	Salmonella	IS:5887 (P- 3) IS:15187	Absent / Present / 250 ml	

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		Shigella	IS: 5887 (P-7)	Absent / Present / 250 ml
		Vibrio cholerae	IS: 5887(P- 5)	Absent / Present / 250 ml
		Vibrio parahaemolyticus	IS: 5887(P- 5)	Absent / Present / 250 ml

#### CHEMICAL TESTING

<b>I.</b>	<b>ANIMAL FOOD AND FEEDS</b>			
<b>1.</b>	<b>Cattle/ Fish Feed Compounds</b>	Moisture	IS:2052	2.0 – 20.0%
		Acid Insoluble Ash	IS:2052	0.1 to 3.0%
		Protein	IS:2052	1 to 40%
		Fat	IS:7874 (Pt 1)	0.1 – 10%
		Energy	IS 13285	100 – 1000 kcal
		Carbohydrate (By Calculation)	IS:1656	20 – 80 %
		Crude Fibre	IS:2052	2.5 to 15.0%
		Sodium Chloride	IS:7874 (Part 2)	0.5 to 2.0%
		Calcium	IS:13433 (Part 1)	0.5 to 50%
		Phosphorus	IS:7874 (Part 2) IS:14828 Part 2	0.5 to 10%
<b>II.</b>	<b>FOOD AND AGRICULTURAL PRODUCTS</b>			
<b>1.</b>	<b>Cereal and Cereal Products / Flour of any type of Food grain / Multigrain / Fortified (Atta /</b>	Description and Appearance (Colour/ Odour/ Texture/Taste/ Extraneous Matter)	FSSAI Manual 03 (2016)	Qualitative
		Moisture	IS: 1155	1- 20%
		Total Ash	IS: 1155	0.5 - 10%

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	<b>Suji / Besan / Maida / Soya Flour / Soya Grit</b>	Ash Insoluble in dilute HCl	IS: 1155	0.1-2%
		Protein	IS:7219/IS:684	10-55%
		Gluten	IS: 1155	0.1- 10%
		Fat	IS:4684	0.1 – 10%
		Acid value of Extracted fat(soya flour and soya Grit)	IS:4684	0.1 – 0.5%
		Alcoholic Acidity	IS: 1155	0.1- 2%
		Carbohydrate (By Calculation)	IS:1656	20 – 85%
		Energy	IS 13285	100 – 1000 kcal
		Crude Fibre	IS: 1155	0.1- 5%
		Granularity	IS: 10228 (Pt 1) ISO 5498	Qualitative
		Grit %	AOAC 941.16 20 <sup>th</sup> Ed	Qualitative
		Calcium	IS:1699 IS:7874 (pt 2) FSSAI Manual 09 (2016)	0.01 to 5 %
		Iron	IS:1699 / IS:7874 (pt 2) FSSAI Manual 09 (2016)	1 – 100 mg/g
		Zinc	IS:1699 / IS:7874 (pt 2) FSSAI Manual 09 (2016)	1 – 100 mg/g
		Sodium	IS: 1699 FSSAI Manual 09 (2016)	1-200 mg/kg
	Heavy Metals a) Arsenic b) Cadmium c) mercury d) lead	IS: 1699 FSSAI Manual 09 (2016)	0.1-10mg/kg 0.1-10mg/kg 0.1-10mg/kg 0.1-10mg/kg	
	Adultrants	FSSAI Manual 03 (2016)	Qualitative	
	Adultrants- Khesari Dal (BOAA)	FSSAI Manual 03 (2016)	Qualitative	
	Particle Size (as	IS:4684	0.1 – 10%	

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		required)		
		Uric Acid	IS:4333 (Part 5)	0.1-10 mg/kg
		Nitrogen Insolubility index	IS:7837	20 – 100%
		Iron Filling (Iron particals)	IS:3633	Qualitative
2.	<b>Food Grain and Pulses/ Fortified Grains and Pulses/ Soya Products/ All type of Solvent extracted Flour, Starchy Foods</b>	Moisture	IS: 4333: (Part 2) FSSAI Manual 03 (2016)	0.5-20%
		Ash	IS:4684 FSSAI Manual 03 (2016)	0.5-10%
		Acid insoluble ash	IS:1155:1968 RA 2005 FSSAI Manual 03 (2016)	0.01-10%
		Fat	IS:1155:1968 RA 2005 FSSAI Manual 03 (2016)	0.01- 25%
		Protein	IS:7219 IS:4684 FSSAI Manual 03 (2016)	1- 25%
		Crude Fiber	IS: 1155 FSSAI Manual 03 (2016)	0.1- 5%
		Carbohydrate (By Calculation)	IS:1656	10-80%
		Energy	IS 13285	10-500 kcal/100g
		Foreign Matter	IS: 4333: (Part 1) FSSAI Manual 03 (2016)	1-50%
		Broken Matter	IS: 4333: (Part 1) FSSAI Manual 03 (2016)	1-50%
		Weeviled grains	IS: 4333: (Part 1)	1-50%
		Other edible grains	IS: 4333: (Part 1) FSSAI Manual 03 (2016)	1-50%
		Mass of 1000 grains	IS: 4333 (Part 4) FSSAI Manual 03(2016)	40- 150g
	Gluten	IS: 1009	5-30%	

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			FSSAI Manual 03 (2016)	
		Lead	IS:1699/IS 7224 FSSAI Manual 09 (2016)	0.5-5 mg/l
		Iron	IS:1699 IS:7874 pt 2 FSSAI Manual 09 (2016)	0.1 – 100 mg/g
		Zinc	IS:1699 FSSAI Manual 09 (2016)	0.1 – 100 mg/kg
		Calcium	IS:1699/IS:7874 pt 2 FSSAI Manual 09 (2016)	0.5 – 10 %
		Iron Filling	IS:3633 FSSAI Manual 4 of 5.9	Qualitative
		Sodium	IS:1699 FSSAI Manual 09 (2016)	0.1-20mg/kg
		Uric Acid	IS:4333(Part 5) FSSAI Manual 02 (2016)	0.1-10 mg/kg Qualitative
<b>3.</b>	<b>Pickles in Oil / Vinegar / Fruits and Vegetable Products/ Fruits Juice/ Nut and Nut Products, Dry Fruits Oilseeds</b>	Description and Appearance	FSSAI Manual 02 (2016)	Qualitative
		Physical Test (visual)	IS:3579 IS:4333	Qualitative
		Moisture	IS:4684 FSSAI Manual 5 (2016) IS:3579	2 to 50%
		Total Ash	IS:4684 FSSAI Manual 5 (2016)	0.5 – 10%
		Acid Insoluble Ash	IS:4684 FSSAI Manual 3 (2016)	0.1 - 2%
		Protein	IS:4684 FSSAI Manual 5 (2016)	1-55%
		Fat	IS:4684 FSSAI Manual 5 (2016)	0.1-20%
		Carbohydrate	IS:1656	20-85%
		Energy	IS:13285	100 – 1000 kcal
			Heavy Metals	



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		a) Arsenic b) Cadmium c) mercury d) lead	IS: 1699 IS:2860 FSSAI Manual 9 (2016)	0.1-10 mg/kg 0.1-10 mg/kg 0.1-10 mg/kg 0.1-10 mg/kg
		Drained weight (Pickle)	FSSAI Manual 05 (2016)	1-80%
		NaCl	FSSAI Manual 05 (2016)	0.5-15%
		Acidity	FSSAI Manual 05 (2016)	0.1- 5%
		Fat and Oil content	IS:3579 FSSAI Manual 05 (2016)	2-50%
		Free Fatty Acid / Rancidity	IS:548 part 1	0.1 – 2%
		Acidity of extracted Fat	IS:4684	1 – 10%
		Sugar	IS:4941	1 – 10%
		Crude Fibre	IS:8212 IS:4684	0.1- 5%
		Adultrants	FSSAI Manual 02 (2016)	Qualitative
		Particle Size	IS:4684:1975	0.1 – 10%
<b>4.</b>	<b>Edible Oil &amp; Vanaspati</b>	Butyro-refractometer	IS:548 (Part 1) FSSAI Manual 02 (2016)	10-100%
		Saponification value	IS:548(Part 1) FSSAI Manual 02 (2016)	100 – 300%
		Iodine value	IS:548(Part 1) RA 2015 FSSAI Manual 02 (2016)	5 – 200%
		Unsap matter	IS:548(Part 1) FSSAI Manual 02 (2016)	0.1 - 5%
		Acid value	IS:548(Part 1) FSSAI Manual 02 (2016)	0.1 – 10%
		Bellier Turbidity Temperature	IS:542 Part 2 FSSAI Manual 02 (2016)	15°C-50°C
		Baudouin Test	IS:548(Part 2) FSSAI Manual 02 (2016)	Qualitative
		Test for argemone oil	IS:542 Part 2 FSSAI Manual 02 (2016)	Qualitative

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		Admixture of other oils	IS:548 Part 2 FSSAI Manual 02 (2016)	Qualitative
		Flash Point	IS:1448 (Part 21) FSSAI Manual 02 (2016)	Above 30°C
		Appearance / Color	FSSAI Manual 02 (2016) IS:10925:1984	Qualitative
		Odour	FSSAI Manual 02 (2016)	Qualitative
		Sediments	FSSAI Manual 02 (2016)	Qualitative
		Peroxide Value	IS:548 Part 1 FSSAI Manual 02 (2016)	1 to 10 miliequivalent/kg
		Free Fatty Acid	IS: 548 (Part 1) FSSAI Manual 01 (2016)	0.1 to 10% by mass
		Moisture	IS:548 (Part 1) FSSAI Manual 02 (2016)	1- 20%
		Insoluble Bromide	IS:4276:2014 FSSAI Manual 02 (2016)	Qualitative
		Phosphorus Content	IS:4276 FSSAI Manual 02 (2016)	0.5 to 5.0%
		Heavy Metals a) Arsenic b) Cadmium c) mercury d) lead	IS: 1699 IS:2860:2014 FSSAI Manual 9 (2016)	0.1-10 mg/kg 0.1-10 mg/kg 0.1-10 mg/kg 0.1-10 mg/kg
		Test for the Presence of Cottonseed Oil	IS:548(Part 2) FSSAI Manual 02 (2016)	Qualitative
		Test for the Presence of Linseed Oil	IS:548(Part 2) FSSAI Manual 02 (2016)	Qualitative
		Test for the Presence of Karanja Oil	IS:548(Part 2) FSSAI Manual 02 (2016)	Qualitative
		Test for the Presence of Hydrocyanic Acid	IS:548(Part 2) FSSAI Manual 02 (2016)	Qualitative
		Test for the Presence of Mineral Oil	IS:548(Part 2) FSSAI Manual 02 (2016)	Qualitative

**Sangeeta Negi**  
Convenor

**N. Venkateswaran**  
Program Director

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		Test for the Presence of Kusum Oil and other Oil containing Cyanogenic Compounds	IS:548(Part 2) FSSAI Manual 02 (2016)	Qualitative
		Test for the Presence of Castor Oil	IS:548(Part 2) FSSAI Manual 02 (2016)	Qualitative
		Test for the Presence of Neem Oil	IS:548(Part 2) FSSAI Manual 02 (2016)	Qualitative
		Test for the Presence of Vegetable Oil	IS:548(Part 2) FSSAI Manual 02 (2016)	Qualitative
5.	<b>Dairy Products and Analogues including Paneer/ Cheese / Fluid Milk and Milk Product / Ghee / Butter /Milk Fat/ Ice cream</b>	Moisture	IS 2785/IS 1479 FSSAI Manual 01 (2016)	11% - 60%
		Milk Fat	IS 2785 FSSAI Manual 01 (2016)	5% - 60%
		Adultrants	FSSAI Manual 01 (2016)	Qualitative
		Energy	IS 13285	10-500 kcal/100g
		Carbohydrate (By calculation)	IS:1656	10%-80%
		Protein	IS:4684 IS:1479 Part 4	10%-50%
		Fat	FSSAI Manual 1 (2016) IS:1479 Part 2 IS:11721	2%-10%
		Solid Not Fat	FSSAI Manual 1 (2016) IS:1479 IS:12333	7%-9%
		Total Solids	FSSAI Manual 1 (2016) IS:1479/IS:12333	10%-18%
		Butyro-refractometer	IS: 3508 FSSAI Manual 02 (2016)	30-75
	Reichert Meissl Value	IS: 548 Part 1 FSSAI Manual 02 (2016)	10 to 45	
	Free Fatty Acid	IS: 3508	1% to 10%	

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			FSSAI Manual 02 (2016)	
		Baudouin Test	IS: 548 Pt 2 FSSAI Manual 02 (2016)	Qualitative
		Moisture	IS: 3508 FSSAI Manual 02 (2016)	0.1% to 10%
		Adultrants	FSSAI Manual 02 (2016)	Qualitative
6.	<b>Bakery &amp; Confectionary Products / all types of Biscuits / All type of Cookies / Khari / Bread</b>	Moisture	IS: 1011	0.5%-20%
		Ash	IS: 12711 FSSAI Manual 04 (2016)	0.5%-10%
		Acid Insoluble ash	IS: 1011: 2012 RA 2010 / FSSAI Manual 04 (2016)	0.01%-2%
		Fat	IS: 12711	0.5%-40%
		Protein	IS: 7219/IS:4684	1%-50%
		Colour & Appearance	IS:13688	Qualitative
		Odour	IS:13688	Qualitative
		Flavour	IS:13688	Qualitative
		Body	IS:13688	Qualitative
		Crude fibre	IS: 10228 (Pt 1) ISO:5498	1% -10%
		Sugar	IS: 4941	1% - 60%
		pH	IS: 12711	2.0% -13%
		Acidity of extracted fat	IS: 1011	0.1% -0.5%
		Total Solids	IS: 12711	0.5%-90%
		Carbohydrate (By Calculation)	IS:1656	20% – 80 %
		Energy	IS 13285	100 kcal –1000 kcal.
	Bromate	CL/SOP/47 Issue no 01 dt 30.12.15	0.5 mg/kg -50mg/kg	
	Iodate	CL/SOP/48 Issue no 01 dt 27.05.16	0.5 mg/kg -50mg/kg	
	Sodium	IS:1699 FSSAI Manual 9 (2016)	1 mg/kg – 500mg/kg	
	Calcium	IS:1699	1 mg/kg – 100mg/kg	

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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
			FSSAI Manual 9 (2016)	
		Iron	IS:1699 FSSAI Manual 9 (2016)	0.01 mg/kg – 20mg/kg
		Zinc	IS:1699 FSSAI Manual 9 (2016)	0.1 mg/kg – 10mg/kg
7.	<b>Spices, Condiments and Related Products, Herbal Product, Curry Powder, Red Chilli</b>	Moisture	IS:1797 FSSAI Manual 10 (2016)	0.1%-10%
		Ash (Spices)	IS:3500 IS:1797 FSSAI Manual 10 (2016)	0.5% – 10%
		Acid Insoluble Ash (Spices)	IS:1797 FSSAI Manual 10 (2016)	0.1% – 2%
		Water insoluble matter	IS:1797 IS1908	0.05% to 10%
		Non Volatile Ether Extract (Spices)	IS:1797 FSSAI Manual 10 (2016)	0.01% – 30%
		Volatile Oil / Fat	IS:1797 FSSAI Manual 10 (2016) IS:12711/IS:4684 IS:3579	1% – 90%
		Alcohol soluble extract	IS:1797 FSSAI Manual 10 (2016)	0.01% – 20%
		Cold Water Soluble Extract	IS:1797 FSSAI Manual 10 (2016)	0.01% – 20%
		Peroxide Value	FSSAI Manual 2 (2012)	0.1 – 10mEq/kg of extracted fat
		Crude Fibre	IS:1797 FSSAI Manual 10 (2016)	0.1% -5%
	Energy	IS 13285	100 kcal–1000 kcal	
	Carbohydrate (By Calculation)	IS:1656	20% – 80 %	
	Heavy Metals a) Arsenic	IS: 1699	0.1%-10 mg/kg	

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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
		b) Cadmium c) mercury d) lead	IS:2860 FSSAI Manual 9 (2016)	0.1%-10 mg/kg 0.1%-10 mg/kg 0.1%-10 mg/kg
		Copper	IS: 1699 /IS:11123	0.01 mg/kg -10 mg/kg
		Adultrants Physical tests(visual + microscopy)	IS:2322 FSSAI Manual 10 (2016) IS:3576	Qualitative
		Acidity	IS:2860	0.1% - 2%
		Calcium Oxide	IS:1797 FSSAI Manual 10 (2016)	1% - 20%
		Peperine (AI Content ) on dry basis	IS:5832 AOAC M (19th Edition) 987.07 FSSAI Manual 10 (2016)	20% -70%
		Total Starch	IS 4706 (Part 2) FSSAI Manual 10 (2016) FSSAI Manual 10 (2016)	1% - 20%
		Added Starch	FSSAI Manual 10 (2016)	Qualitative
		Chromate	IS:3576 FSSAI Manual 10 (2016)	Qualitative
		Curcuminoid (AI Content ) (on dry basis)	IS 10925 FSSAI Manual 10 (2016)	1 % - 6 %
		Capsaicin (AI Content )	FSSAI Manual 10 (2016)	0.3%-10%
		Description odour & Taste	IS:10925	Qualitative
		Acidity	IS:13242	1 mg/kg - 50 mg/kg
8.	<b>All Types of Ready to Eat Food/ Processed Food Products /</b>	Description and Appearance (Colour / Odour/ Texture/Taste) Physical Test mould affected	IS:3579 IS:4333	Qualitative

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	<b>Proprietary food / Raw Foods/ Soya Food preparation Mixed Grain Preparation / Snacks, Instant Mixes and convenience products / Namkeen / Chutney (dry &amp; wet), and all types of Prepared Food Products</b>	Moisture	IS:4684	1%- 80%
		Ash	IS:4684	1% - 20%
		Acid insoluble ash	IS:1155 12711 FSSAI manual 10 (2016)	0.01% -10%
		Protein Content,	IS:7219 IS :4684	1% to 20 %
		Carbohydrate (By Calculation)	IS:1656	20% – 80 %
		Energy	IS 13285	100 kcal - 1000 kcal
		Crude Fibre	IS:1155 IS:10228 ISO:5498	0.1% -10%
		Addultrants	FSSAI Manual 03 (2016)	Qualitative
		Fat / Oil content	IS:12711/IS:4684 IS:3579	0.1%-50 %
		Added colour& Additives	FSSAI Manual 08 (2016)	Qualitative
		Sugar	IS:4941	1-50%
		Calcium	IS:7874(Part 2) IS:1699	1 mg/kg -500mg/kg
		Sodium	IS:1699 FSSAI Manual 9 (2016)	1 mg/kg -500mg/kg
		Iron	IS:1699 IS:7874(Part 2) FSSAI Manual 9 (2016)	1 mg/kg -50 mg/l
	Zinc	IS:1699 FSSAI Manual 9 (2016)	0.1 mg/kg – 10mg/kg	
	Heavy Metals a) Arsenic b) Cadmium c) mercury d) lead	IS: 1699 IS:2860 FSSAI Manual 9 (2016)	0.1 mg/kg -10 mg/kg 0.1 mg/kg -10 mg/kg 0.1 mg/kg -10 mg/kg 0.1 mg/kg -10 mg/kg	

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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
9.	Honey	Requirements General Characteristics/ Freedom from Foreign Matter / Color	IS:4941	Qualitative
		Specific Gravity	IS:4941	0.5 - 2
		Moisture	IS:4941	1%-80%
		Total Reducing Sugar	IS:4941	1% - 80%
		Sucross	IS:4941	1%-50%
		Fructos Glucose ration	IS:4941	0.5% -2%
		Ash	IS:4941	0.05% -1%
		Acidity	IS:4941	0.05%- 0.4%
		Fiehe's Test	IS:4941	Qualitative
		Optical Density	IS:4941	0.05%-0.6%
		Fat	IS:12711/IS:4684 IS:3579	0.01%-50 %
		Protein Content	IS:7219 IS :4684	0.5% to 20 %
		Energy	IS 13285	100 kcal - 1000 k/cal
Carbohydrate (By Calculation)	IS:1656	20%- 80 %		
10.	Tea Premix, Coffee Premix	Moisture	IS:4684	1%-80%
		Ash	IS:4684	0.1%-20%
		Fat	IS:12711/IS:4684 IS:3579	0.1%-50 %
		Protein Content	IS:7219 IS :4684	1% - 20 %
		Carbohydrate (By Calculation)	IS:1656	20 % - 80 %
		Energy	IS 13285	100 k/cal - 1000 k/cal
		Sugar	IS:4941	1%-50%
		Calcium	IS:7874(Part 2) IS:1699	1 mg/kg -2000mg/kg
Sodium	IS:1699	1 mg/kg - 1000mg/kg		



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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
		Heavy Metals a) Arsenic b) Cadmium c) mercury d) lead	IS: 1699 IS:2860 FSSAI Manual 9 (2016)	0.1 mg/kg -10 mg/kg 0.1 mg/kg -10 mg/kg 0.1 mg/kg -10 mg/kg 0.1 mg/kg -10 mg/kg
11.	Iodized Salt	Moisture	A2 of IS:253	0.1% -5%
		Water insoluble matter	Appendix A-4 of IS:253	0.05% to 10%
		Chloride content (as NaCl)	Appendix A-5 of IS:253	80% to 99.95%
		Matter soluble in water other than NaCl	Appendix A-7 of IS:253	0.1% to 5%
		Iodine content	Appendix A-2 of IS:7224	10 mg/l to 100 mg/l
		Particle size	IS:7224	95% -100 %
		Calcium	Annex F of IS:7224	0.05%-1%
		Magnesium	Annex F of IS:7224	0.05%-1%
		Sulphate	Annex G of IS:7224	0.2%-1%
		Alkalinity	Annex J of IS:7224	0.1%-1%
		Lead	Annex K of IS:7224	0.01%-2%
		Arsenic	Annex L of IS:7224	0.01%-2%
		Iron	Annex M of IS:7224	1 mg/l -50 mg/l
III.	<b>HAZARDOUS &amp; RESTRICTED CHEMICALS</b>			
1.	Toys Plastic / Rubber	Migration of Sb, As, Ba, Cd, Cr, Pb, Hg and Se	IS: 9873(Part 3)	1 mg/l -1200 mg/l
IV.	<b>WATER</b>			
1.	Raw Water, Source Water, Drinking Water: Packaged Natural	Color	IS 3025 (Part 4)	1-50 units
		Odour	IS 3025 (Part 5)	N/A
		Appearance	APHA:2110 23 <sup>rd</sup> Ed 2017	Qualitative
		Temperature	APHA:2550 23 <sup>rd</sup> Ed 2017	Qualitative

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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
	Drinking Water: Packaged	Colour retention KMnO4	IS:1070	Qualitative
	Drinking Water: Water for	Taste	IS 3025 (Part 8)	N/A
	Processed Food industry, Raw	Turbidity	IS 3025 (Part 10)	0.05 NTU -400 NTU
	Water, Bore well	Conductivity	IS 3025 (Part 14)	0.05 ms/cm - 10 ms/cm
	Water, Treated	pH	IS 3025 (Part 11)	1-14
	Water, Water for Construction	Total Hardness	IS 3025 (Part 21)	1 mg/l - 500 mg/l
	Purpose, Reagent	Iron	IS:3025 part 53 IS 15303 APHA 3500 23 <sup>rd</sup> Ed (2017)	0.01 mg/l -20 mg/l
	Grade Water,	Chloride	IS 3025 (Part 32)	1 mg/l -1000 mg/l
	Water for	Residual free chlorine	IS 3025 (Part 26)	0.01 mg/l -20 mg/l
	Swimming Pools	Total Dissolved Solids	IS 3025 (Part 16)	10 mg/l -500 mg/l
	Purpose, Boilers	Calcium	IS 3025 (Part 40) APHA 3500 23 <sup>rd</sup> Ed (2017)	0.25 mg/l – 100 mg/l
	Feed Water, Boiler	Copper	IS 3025 (Part 42) APHA 3500 23 <sup>rd</sup> Ed (2017)	0.001 mg/l -20 mg/l
	Water, Condensate	Manganese	IS 3025 (Part 59) APHA 3500 23 <sup>rd</sup> Ed (2017)	0.01 mg/l -4 mg/l
	Water, Water for Irrigation	Sulphate	IS 3025 (Part 24)	1 mg/l -500 mg/l
	Purpose, Soft Water/	Nitrate	IS 3025 (Part 34) APHA 4500 23 <sup>rd</sup> Ed (2017)	0.1 mg/l -200 mg/l
	Cooling tower	Fluoride	IS 3025 (Part 60) APHA 4500 23 <sup>rd</sup> Ed (2017)	0.1 mg/l -10 mg/l
	water / RO water /	Phenolic Compounds	IS 3025 (cl 6 of Part 43) APHA 5530 23 <sup>rd</sup> Ed (2017)	0-5 mg/l
	Blow down water	Mercury	IS 3025 (Part 48) APHA 3500 23 <sup>rd</sup> Ed (2017)	0.0002 mg/l -1 mg/l
		Cadmium	IS 3025 (Part 41) APHA 3500 23 <sup>rd</sup> Ed (2017)	0.001 mg/l -10 mg/l
		Selenium	IS:3025 part 56: IS 15303 APHA 3500 23 <sup>rd</sup> Ed (2017)	0.001 mg/l -10 mg/l

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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
		Arsenic	IS 3025 (Part 37) APHA 3500 23 <sup>rd</sup> Ed (2017)	0.001 mg/l -10 mg/l
		Cyanide	IS 3025 (cl 2 of Part 27) APHA 4500 23 <sup>rd</sup> Ed (2017)	0-5 mg/l
		Lead	IS 3025 (Part 47) APHA 3500 23 <sup>rd</sup> Ed (2017)	0.001 mg/l -10 mg/l
		Zinc	IS 3025 (Part 49) APHA 3500 23 <sup>rd</sup> Ed (2017)	0.1 mg/l – 10 mg/l
		Anionic Surface active Agents	[ANNEX K] of IS 13428 APHA 5540 23 <sup>rd</sup> Ed (2017)	0.01 mg/l – 100 mg/l
		Chromium	[ANNEX J] of IS 13428 IS:3025 part 52 APHA 3500 23 <sup>rd</sup> Ed (2017)	0.001 mg/l - 10 mg/l
		Hexavalent Chromium	IS 3025 (Part 52)	0.001 mg/l -10mg/l
		Alkalinity	IS 3025 (Part 23)	1 mg/l - 500 mg/l
		Aluminium	IS: 3025 part 55 IS 15302 APHA 3500 23 <sup>rd</sup> Ed (2017)	0.001 mg/l -100 mg/l
		Boron	[ANNEX H] of 13428:2005 RA 2009	0.01 mg/l – 20 mg/l
		Barium	IS 15302 APHA 3500 23 <sup>rd</sup> Ed (2017)	0.1 mg/l – 20 mg/l
		Nitrite	IS 3025 (Part 34) APHA 4500 23 <sup>rd</sup> Ed (2017)	0.001 mg/l – 10 mg/l
		Silver	[ANNEX J] of IS 13428 APHA 3500 23 <sup>rd</sup> Ed (2017)	0.001 mg/l – 4 mg/l
		Magnesium	IS 3025 (Part 46) APHA 3500 23 <sup>rd</sup> Ed (2017)	0.1 mg/l – 75 mg/l
		Sodium	IS 3025 (Part 45) APHA 3500 23 <sup>rd</sup> Ed (2017)	1 mg/l – 200 mg/l
		Mineral Oil	IS 3025 (Part 39) APHA 5520 23 <sup>rd</sup> Ed (2017)	1 mg/l -100mg/l

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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
			(By FTIR Method)	
		Phosphate	IS: 3025 (Part 31)	0.005 mg/l -20 mg/l
		Silica (Reactive, unreactive, Total)	IS: 3025 (Part 35)	0.04 mg/l -50 mg/l
		Total Solids	APHA 2540B 23 <sup>rd</sup> Ed (2017)	10 mg/l -1000mg/l
		Total Suspended Solids	IS:3025 (Part 17) APHA:2540D 23 <sup>rd</sup> Ed (2017)	1 mg/l -100 mg/l
		Bromate	ISO 15061:2001 RA 2009 CL/SOP/45 Issue no 01 dt 30.12.15	0.001 mg/l -10 mg/l
		Chloramine	APHA:4500 Cl-G, 23 <sup>rd</sup> Ed (2017) IS:3025 (Part 26)	0.01 mg/l -20 mg/l
		Ammonia	IS:3025(Part 34) APHA:4500 23 <sup>rd</sup> Ed (2017)	0.1 mg/l -50 mg/l
		Molybednum	APHA:3500 23 <sup>rd</sup> Ed (2017) IS:3025 (Part 2) IS:12042	0.01 mg/l -10 mg/l
		Fixed and volatile solid/ Organic and Inorganic solid	IS:3025 (Part 18) APHA:2540 23 <sup>rd</sup> Ed (2017)	0.1 mg/l -10 mg/l
		Nickel	[ANNEX L] of IS 13428 APHA 3500 23 <sup>rd</sup> Ed (2017)	0.001 mg/l – 20 mg/l
		Antimony	[ANNEX G] of IS 13428 IS:15303 APHA 3500 23 <sup>rd</sup> Ed (2017)	0.0005 mg/l -10 mg/l
		Sulphide	IS 3025 (Part 29):1986 RA 2009	0.01 mg/l – 10 mg/l
		Carbon dioxide	IS:3025:1964 APHA 4500 23 <sup>rd</sup> Ed (2017)	0.5 mg/l -10mg/l
		Oxygen observance in four hour at 27 °C	IS:3025 (Part 63)	0.5 mg/l - 2mg/l
		P or M-Alkalinity as	IS 3025 (Part 23)	0.5 mg/l - 50 mg/l

**Sangeeta Negi**  
Convenor

**N. Venkateswaran**  
Program Director

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		CaCO <sub>3</sub>		
		Hardness Carbonate and Non-carbonate	IS 3025 (Part 51)	1 mg/l - 1000 mg/l
		Carbonate	IS 3025 (Part 51)	1 mg/l - 100 mg/l
		Bicarbonate	IS 3025 (Part 51)	1 mg/l - 100 mg/l
<b>2.</b>	<b>Construction Water</b>	Acidity	IS 3025 (Part 22)	1 mg/l - 50 mg/l
		Alkalinity	IS 3025 (Part 23)	1 mg/l - 1000 mg/l
		Organic Solids	IS 3025 (Part 18)	1 mg/l - 1000 mg/l
		Inorganic Solids	IS 3025 (Part 18)	1 mg/l - 1000 mg/l
		Suspended Matter	IS 3025 (Part 17)	1 mg/l - 100 mg/l
<b>V.</b>	<b>RESIDUE IN WATER</b>			
<b>1.</b>	<b>Residue in Water</b>	Polychlorinated biphenyle (PCB)	USEPA APHA 6431 23 <sup>rd</sup> Ed (2017) of C	0.02 µg/l - 0.4 µg/l
		PAH (Poly Nuclear Aromatic Hydrocarbon)	APHA 6440 23 <sup>rd</sup> Ed (2017)	0.02 µg/l - 0.4 µg/l
		DDT o,p	USEPA 508 AOAC 990.06 20 <sup>th</sup> Ed	0.02 µg/l - 0.4 µg/l
		DDT p,p		
		DDD o,p		
		DDD p,p		
		DDE o,p		
		DDE p,p		
		γ HCH (Lindane)		
		α HCH		
		β HCH		
		δ HCH		
		Endosulfan α		
		Endosulfan β		
		Endosulfan SO <sub>4</sub> <sup>2-</sup>		

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		Monocrotophos	USEPA 8141 A	
		Ethion	USEPA 1657 A	
		Chlorpyrifos	USEPA 525.2	
		Phorate	USEPA 8141 A	
		Phorate Sulphoxide	USEPA 8141 A	
		Phorate Sulphone	USEPA 8141 A	
		2,4 D	USEPA 515.1	
		Butachlor	USEPA 8141 A	
		Isoproturon	USEPA 532	
		Alachlor	USEPA 525.2	
		Atrazine	USEPA 525.2	
		Methyl Parathion	USEPA 8141 A	
		Methyl Paraoxon	USEPA 8141 A	
		Malathion	USEPA 8141 A	
		Malaaxon	USEPA 8141 A	
		Aldrin	USEPA 525.2 AOAC 990.06 20 <sup>th</sup> Ed	
		Dieldrin	USEPA 525.2 AOAC 990.06 20 <sup>th</sup> Ed	

**MECHANICAL TESTING**

I.	PLASTICS AND PLASTIC PRODUCTS		
1.	<b>Plastics Bottles / Containers and Caps for Packaged Natural</b>	Finish & Appearance	IS:15410
		Capacity	IS:2798
		Wall thickness	IS:2798
		Transparency	IS:15410, Annex A
			Qualitative
			100 ml to 25 l
			0.001 mm to 25 mm
			1 % to 100 %

**Sangeeta Negi**  
Convenor

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Program Director

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	<b>Mineral Water and Packaged Drinking Water</b>	Leakage test: [a] Closure leakage [b] Vibration leakage [c] Air pressure leakage	IS:2798	Qualitative Qualitative Qualitative Qualitative
		Drop Test	IS:2798	Qualitative
		Migration Test	IS:9845	LOD: 1 mg/dm <sup>2</sup>
		Water Potability Test	IS:15410	Qualitative
<b>2.</b>	<b>Polyethylene Flexible Pouches for the Packing of Natural Mineral Water and Packaged Drinking Water</b>	Description	IS:15609	Qualitative
		Odour	IS:15609	Qualitative
		Thickness / mm	IS:2508	50 micron to 200 micron
		Width	IS:15609	1 mm to 600 mm
		Tensile strength	IS:2508 A-4-2016	0.1 MPa to 50 MPa
		Elongation at break	IS:2508 A-4-2016	50 to 1000%
		Dart impact resistance	IS:2508 A-6-2016	25 N to 250 N
		Vibration leakage test	IS:15609, Annex D,	Qualitative
		Stack load test	IS:15609, Annex F	Qualitative
		Drop test	IS:15609, Annex G	Qualitative
		Migration Test	IS:9845	LOD: 1 mg/dm <sup>2</sup>
		Water Potability Test	IS:15609	Qualitative
		Ink adhesion test for printed pouch	IS:15609, Annex H,	Qualitative
	Product resistance test for printed pouch	IS:15609, Annex J	Qualitative	
<b>3.</b>	<b>Polyethylene Film/ Caps for Plastic Bottles/ Containers</b>	Colour Migration	IS:9845	Qualitative
		Overall Migration	IS:9845	0.1 mg/l to 200 mg/l