

Laboratory Phyto-Pharma Testing Lab, T. Stanes & Company Limited, 1128,
Trichy Road, Coimbatore, Tamil Nadu

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-7422 (in lieu of T-2242, T-3023)

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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

I. FOOD & AGRICULTURAL PRODUCT				
1.	Beverage (Non Alcoholic)	Enumeration of Microorganisms -Colony count technique	IS 5402 : 2012 (RA 2012)	Min 1 CFU / ml
		Yeast & Mould Count	IS 5403:1999 (RA2013)	Min 1 CFU / ml
		Salmonella	IS 5887 (Part3): 1999 (RA2013)	Absent / Present / 25ml
		E.coli - Colony count technique	IS 5887 (Part I) 1976 (RA2013)	Min 1 CFU / ml
		E.coli – MPN technique	IS 5887 (Part I) 1976 (RA2013)	0.3 MPN/ml to 110 MPN/ml
		Staphylococcus aureus	IS:5887 (Part II)-1976 (RA2013)	Present / Absent /25 ml
		Coliform – Colony count technique	IS 5401 (Part 1) :2002 (RA2013)	Min 1 CFU / ml
		Coliform – MPN technique	IS 5401 (Part 2) :2012 (RA2013)	0.3 MPN/ml to110 MPN/ml
		Pseudomonas aeruginosa	TSPPTL/SOP/MIC/31, Issue no: 01 & Issue date: 23.04.2016	Present / Absent /25 ml
		2.	Honey and Honey products	Enumeration of Microorganisms -Colony count technique
Yeast & Mould Count	IS 5403:1999 (RA2013)			Min 10 CFU /g
Salmonella	IS 5887 (Part3): 1999 (RA2013)			Absent / Present / 25g
E. coli - Colony count technique	IS 5887 (Part I) – 1976 (RA2013)			Min 10 CFU / g
E. coli – MPN	IS 5887 (Part I) – 1976			0.3 to 110 MPN /g

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		technique	(RA2013)	
		Staphylococcus aureus	IS:5887 (Part II)-1976 (RA2013)	Present / Absent /25 g
		Coliform – Colony count technique	IS 5401 (Part 1) :2012 (RA2013)	Min 10 CFU / g
		Coliform – MPN technique	IS 5401 (Part 2) :2012 (RA2013)	0.3 to 110 MPN /g
		Pseudomonas aeruginosa	TSPPTL/SOP/MIC/31, Issue no: 01 & Issue date: 23.04.2016	Present / Absent /25 g
3.	Jams, Juices, Sauces and concentrates	Enumeration of Microorganisms -Colony count technique	IS 5402 : 2012 (RA 2012)	Min 10 CFU / g
		Yeast & Mould Count	IS 5403:1999 (RA2013)	Min 10 CFU /g
		Salmonella	IS 5887 (Part3): 1999 (RA2013)	Absent / Present / 25g
		E.coli - Colony count technique	IS 5887 (Part I) – 1976 (RA2013)	Min 10 CFU / g
		E.coli – MPN technique	IS 5887 (Part I) – 1976 (RA2013)	0.3 to 110 MPN /g
		Staphylococcus aureus	IS:5887 (Part II)-1976 (RA2013)	Present / Absent /25 g
		Coliform – Colony count technique	IS 5401 (Part 1) :2002 (RA2013)	Min 10 CFU / g
		Coliform – MPN technique	IS 5401 (Part 2) :2012 (RA2013)	0.3 to 110 MPN /g
		Pseudomonas aeruginosa	TSPPTL/SOP/MIC/31, Issue no: 01 & Issue date: 23.04.2016	Present / Absent /25 g
4.	Tea	Enumeration of Microorganisms -Colony count technique	IS 5402 : 2012 (RA 2012)	Min 10 CFU / g

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		Yeast & Mould Count	IS 5402:2012 (RA2012)	Min 10 CFU / g
		Salmonella	IS 5403: 1999 (RA2013)	Absent / Present / 25g
		E.coli - Colony count technique	IS 5887 (Part 3) – 1999 (RA2013)	Min 10 CFU / g
		E.coli – MPN technique	IS 5887 (Part I) – 1976 (RA2013)	0.3 MPN /g to 110 MPN /g
		Staphylococcus aureus	IS:5887 (Part I)-1976 (RA2013)	Present / Absent /25 g
		Coliform – Colony count technique	IS 5887 (Part II) :1976 (RA2013)	Min 10 CFU / g
		Coliform – MPN technique	IS 5401 (Part I) :2002 (RA2013)	0.3 MPN /g to 110 MPN /g
		Pseudomonas aeruginosa	IS 5401 (Part 2):2012, (RA 2013)	Present / Absent /25 g
II.	WATER			
1.	Drinking Water	Standard Plate Count	IS 1622: 1981 (RA 2014)	Min 1 CFU / ml
		E.coli – MPN technique	IS 1622: 1981 (RA 2014)	2 to1600 MPN /100ml
		Coliform – MPN technique	IS 1622: 1981 (RA 2014)	2 to 1600 MPN /100ml
III.	BIOPESTICIDE & BIOFERTILIZER			
1.	Biopesticide & Biofertilizer	Total Viable cell count\ (Specific organism)		
		Pseudomonas fluorescens count	TSPPTL/SOP/MIC/47; Issue no:01 & Issue date: 25.04.2016	Min 10 CFU / g
		Bacillus subtilis count	TSPPTL/SOP/MIC/48 Issue no:01 & Issue date: 25.04.2016	Min 10 CFU / g
		Trichoderma viride	TSPPTL/SOP/MIC/49	Min 10 CFU / g

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		count	Issue no:01 & Issue date: 25.04.2016	
		Beauveria bassiana count	TSPPTL/SOP/MIC/50 Issue no:01 & Issue date: 25.04.2016	Min 10 CFU / g
		Paecilomyces sp., count	TSPPTL/SOP/MIC/51 Issue no:01 & Issue date: 25.04.2016	Min 10 CFU / g
		Azosprillium sp., count	TSPPTL/SOP/MIC/55 Issue no:01 & Issue date: 23.04.2016	Min 10 CFU / g
		Bacillus megaterium count	TSPPTL/SOP/MIC/56 Issue no:01 & Issue date: 23.04.2016	Min 10 CFU / g
		Frateuria aurantia count	TSPPTL/SOP/MIC/57 Issue no:01 & Issue date: 23.04.2016	Min 10 CFU / g
		Verticillium lecanii	TSPPTL/SOP/MIC/61 Issue no:00 & Issue date: 20.09.2016	Min 10 CFU / g
		Metarhizium anisopliae	TSPPTL/SOP/MIC/64 Issue no:00 & Issue date: 21.01.2017	Min 10 CFU / g
		Azotobacter chroococcum	TSPPTL/SOP/MIC/72 Issue no:00 & Issue date: 09.04.2017	Min 10 CFU / g
		Ampelomyces quisqualis	TSPPTL/SOP/MIC/73 Issue no:00 & Issue date: 22.01.2018	Min 10 CFU / g

IV. MOLECULAR ANALYSIS (TEST FOR VARIOUS MATRICES- MICROBIAL)

1.	Genomic DNA of Bacterial & Fungal	Isolation of genomic DNA from Bacteria	TSPPTL/SOP/MB/01 Issue no:02 & Issue date:	Qualitative test (Present \Absent)
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**Rozina
Convenor**

**Anuja Anand
Program Manager**

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	Pure Culture		06.02.2018	
		Isolation of genomic DNA from Actinobacteria	TSPPTL/SOP/MB/01 Issue no:01 & Issue date: 06.02.2018	Qualitative test (Present \Absent)
		Isolation of genomic DNA from Fungus	TSPPTL/SOP/MB/01 Issue no:01 & Issue date: 06.02.2018	Qualitative test (Present \Absent)
		Isolation of genomic DNA from Yeast	TSPPTL/SOP/MB/01 Issue no:01 & Issue date: 06.02.2018	Qualitative test (Present \Absent)

Rozina
Convenor

Anuja Anand
Program Manager

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CHEMICAL TESTING				
I. FOOD & AGRICULTURAL PRODUCTS				
1.	Tea(Black tea, green tea, flavoured teas & Decaffeinated tea)	Dry matter content (DMC)	IS 13852:1994 (RA 2009)	80% to 98 %
		Loss of moisture at 103°C	IS 13853:1994(RA 2009)	2.0% to 10.0 %
		Total ash	IS 13854:1994 (RA 2009)	3.0 % to 10.0 %
		Water soluble ash & Water insoluble ash	IS 13855:1993 (RA 2009)	40.0% to 70.0 %
		Alkalinity of water soluble ash	IS 13856:1993 (RA 2009)	0.2 % to 5.0 %
		Acid insoluble ash	IS 13857:1993(RA 2009)	0.02 % to 5.0 %
		Water extract	IS 13862:1999(RA 2009)	20.0% to 60.0 %
		Crude fibre	ISO 15598:1999 (E)	2.0 % to 40.0 %
		Iron Filings	IS 3633:2003 (RA 2008)	5.0 mg/kg to 500 mg/kg
		Total Polyphenols	ISO 14502-1:2005	1. %to 40.0 %
		Caffeine	TSPPTL\SOP\CHE\TM\12; Issue, 01 Issue dated. 03.12.2015	0.10 % to 7.0 %
		Theaflavins	TSPPTL\SOP\CHE\TM\11; Issue, 01 Issue dated. 03.12.2015	0.05% to 3.0 %
		Thearubigins		0.5% to 20.0 %
		Highly polymerized substances		0.5% to 20.0 %
		Total liquor colour		0.1 to 10.0
	Lead	TSPPTL\SOP\CHE\TM\84; Issue, 01 Issue dated. 23.07.2016	0.1 mg/kg to 100 mg/kg	
	Cadmium	TSPPTL\SOP\CHE\TM\84; Issue, 01 Issue dated. 23.07.2016	0.05 mg/kg to 100 mg/kg	
	Zinc	AOAC 999.11(20 th edition):	0.05 mg/kg to 100mg/kg	

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			2016	
		Copper	AOAC 999.11(20 th edition): 2016	0.1 mg/kg to 100 mg/kg
		Iron	AOAC 999.11(20 th edition): 2016	0.1 mg/kg to 100 mg/kg
2.	Coffee (Roasted and Ground, Soluble Coffee, Roasted Coffee – Chicory & Soluble Coffee-Chicory)	Moisture	IS 3077:1992 (RA 2011) IS 2791:1992 (RA 2009)	1.0 to 20.0%
		Total ash	IS 3077:1992 (RA 2011) IS 2791:1992 (RA 2009)	1.0 %to 15.0 %
		Water soluble ash as % of total ash	IS 3077:1992 (RA 2011)	30% to 85.0 %
		Alkalinity of water soluble ash	IS 3077:1992 (RA 2011)	1.0 ml/gm to 10.0 ml/gm
		Acid insoluble ash	IS 3077:1992 (RA 2011)	0.02% to 5.0 %
		Water soluble matter	IS 3077:1992 (RA 2011)	20.0% to 50.0 %
		Petroleum ether extract	IS 3077:1992 (RA 2011)	5.0 % to 15.0 %
		Caffeine	IS 3077:1992 (RA 2011) IS 2791:1992 (RA 2009)	0.10% to 5.0 %
		Solubility in boiling water	IS 2791:1992 (RA 2009)	Qualitative
		Solubility in cold water at 16 ± 2°C	IS 2791:1992 (RA 2009)	Qualitative
3.	Herbs & Spices/ Condiments	Total ash	IS 1797: 1985 (RA 2009)	0.05% to 25.0 %
		Water insoluble ash	IS 1797: 1985 (RA 2009)	0.01% to 20.0 %
		Acid insoluble ash	IS 1797: 1985 (RA 2009)	0.01% to 20.0 %
		Moisture	IS 1797: 1985 (RA 2009)	0.5 % to 20.0 %
		Alcohol soluble extract	IS 1797: 1985 (RA 2009)	0.01% to 60.0 %
		Cold water soluble extract	IS 1797: 1985 (RA 2009)	0.01 % to 60.0 %
		Crude fibre	IS 1797: 1985 (RA 2009)	0.50 % to 30.0 %
		Nonvolatile ether extract	IS 1797: 1985 (RA 2009)	0.50 % to 30.0 %
		Volatile oil	IS 1797: 1985 (RA 2009)	0.1 %to 25.0 %
		4.	Food Grains/Cereals/Pu	Moisture

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	Ises (Whole & Ground) (including Wheat Atta/Maida/Rava& Split pulses)	Total ash	IS 1010:1968 (RA 2015) IS 1155:1968 (RA 2015) IS 1009:1979 (RA 2015) IS 1010:1968 (RA 2015)	0.05% to 10.0 %
		Acid insoluble ash	IS 1155:1968 (RA 2015) IS 1009:1979 (RA 2015) IS 1010:1968 (RA 2015)	0.01% to 10.0 %
		Crude fibre	IS 1155:1968 (RA 2015)	0.5 % to 20.0 %
		Alcoholic acidity	IS 1155:1968 (RA 2015) IS 1009:1979 (RA 2015) IS 1010:1968 (RA 2015)	0.01% to 1.0 %
		Total Fat	IS 6287:1985 (RA 2010)	0.1% to 30.0 %
		Protein	IS 6287:1985 (RA 2010)	0.5% to 30.0 %
		Carbohydrate	IS 6287:1985 (RA 2010) IS 1656:2007 (RA2012)	1.0% to 90.0 %
		Energy	FAO 2002	50.0 kcal/100g to 800.0 kcal/100g
5.	Bakery & Confectionery (including Chocolates/Bread s/Cakes/Biscuits/ Jams/Jellies/Rusk/ Cookies)	Moisture	IS 6287:1985 (RA 2010) IS 12711:1989 (RA 2010)	1.0 %to 50.0 %
		Sulphated ash	IS 6287:1985 (RA 2010)	0.1% to 10.0 %
		Acid insoluble ash	IS 6287:1985 (RA 2010) IS 12711:1989 (RA 2010) IS 1163:1992 (RA 2009)	0.05% to 5.0 %
		Total solids	IS 1163:1992 (RA 2009) IS 12711:1989 (RA 2010)	20.0 % to 99.0 %
		Total Fat	IS 6287:1985 (RA 2010) IS 12711:1989 (RA 2010) IS 1163:1992 (RA 2009)	0.5 % to 30.0 %
		Protein	IS 6287:1985 (RA 2010)	0.5 % to 30.0 %
		Carbohydrate	IS 6287:1985 (RA 2010) IS 1656:2007 (RA 2012)	1.0% to 90.0 %
		Energy	FAO 2002	50.0 kcal/100g to 800.0 kcal/100g

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6.	Salt (including Edible Common Salt & Iodized Salt)	Moisture	IS 253: 2014	0.01% to 50.0 %
		Anti-caking agent	IS 253: 2014	0.1 % to 10.0 %
		Matter insoluble in water	IS 253: 2014	0.05 %to 5.0 %
		Chloride as NaCl	IS 253: 2014	20.0 % to 99.0 %
		Sodium chloride as NaCl	IS 253: 2014	20.0% to 99.0%
		Acid insoluble matter	IS 253: 2014	0.1 % to 30.0 %
		Matter soluble in water other than NaCl	IS 253: 2014	0.5 % to 30.0 %
		Calcium as Ca	IS 253: 2014	1.0 % to 90.0 %
		Magnesium as Mg	IS 253: 2014	0.01% to 5.0%
		Sulphate as SO ₄	IS 253: 2014	0.01% to 10.0 %
		Alkalinity	IS 253: 2014	0.01% to 1.0 %
		Iodine	IS 7224:2006	10 mg/kg to 100 mg/kg
II.	WATER			
1.	Water (Packaged Drinking Water / Packaged Natural Mineral Water /Drinking Water)	Colour	IS 3025 (Part-4) 1983 (RA2017)	1 Hazen Units to 100 Hazen Units
		Odour	IS 3025 (Part-5) 1983 (RA2017)	Qualitative
		Turbidity	IS 3025 (Part-10) 1984 (RA2017)	0.5 NTU to 400 NTU
		pH	IS 3025 (Part-11) 1983 (RA2017)	1.0 to 13.0
		Acidity	IS 3025 (Part-22) 1986 (RA2014)	1.0 mg/L to 500 mg/L
		Total Dissolved Solids	IS 3025(Part-16) 1984 (RA2017)	1.0 mg/L to 20000 mg/L
		Nitrate as NO ₃	IS 3025 (Part-34) 1988 (RA2014)	0.1 mg/L to 45.0 mg/L
		Nitrite as NO ₂	IS 3025(Part-34) 1988 (RA2014)	0.01 mg/L to 50.0 mg/L
		Total Alkalinity as	IS 3025 (Part-23) 1986	1.0 mg/L to 1000 mg/L

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		CaCO ₃	(RA 2014)	
		Total Hardness as CaCO ₃	IS 3025(Part-21) 2009 (RA 2014)	5.0 mg/L to 8000 mg/L
		Carbonate	IS 3025 (Part 51) 2001 (RA2017)	10 mg/L to 1000 mg/L
		Bicarbonate	IS 3025 (Part 51) 2001 (RA2017)	10 mg/L to 1000 mg/L
		Sulphate as SO ₄	IS 3025 (Part 24) 1986 (RA2014)	5.0 mg/L to 1000 mg/L
		Conductivity	IS 3025 (Part-14) 1984 (RA 2013)	1µs\cm to200ms\cm
		Total suspended solids	IS 3025(Part-17) 1984 (RA2017)	1.0 mg/L to 5000.0 mg/L
		Residual Free chlorine	IS 3025 (Part-26) 1986 (RA2014)	1.0 mg/L to 100.0 mg/L
		Ammonical Nitrogen	IS 3025 (Part-34) 1988 (RA2014)	1.0 mg/L to 1000.0 mg/L
		TKN	IS 3025 (Part-34) 1988 (RA2014)	2.0 mg/L to 500.0 mg/L
		Chlorides as Cl	IS 3025 (Part 32) 1988 (RA2014)	2.0 mg/L to 100.0 mg/L
		Calcium as Ca	IS 3025(Part-40) 1991 (RA2014)	1.0 mg/L to 1000.0 mg\l
		Magnesium as Mg	IS 3025(Part-46) 1994 (RA2014)	1.0 mg/L to 1000.0 mg\l
		Fixed solids	APHA (2540 E:2012)	10.0 mg/L to 1000.0 mg\l
		Volatile solids	APHA (2540 E:2012)	1.0 mg/L to 1000.0 mg\l
		Dissolved Oxygen	IS 3025(Part-38) 1989 (RA2014)	0.2 mg/L to 10 mg\l
		Phosphorous	IS 3025 (Part 31) 1988 (RA2014)	0.05 mg/L to 500.0 mg\l
		Biochemical Oxygen demand	IS 3025 (Part 44) 1993 (RA2014)	1.0 mg/L to 1000.0 mg\l

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		Chemical Oxygen Demand	IS 3025 (Part 58) 2006 (RA2017)	10 mg/L to 2000.0 mg/L
2..	Waste water (Effluent water\ ETP Water)	Colour	IS 3025 (Part-4) 1983 (RA 2017)	1 Hazen Units to 2000 Hazen Units
		Odour	IS 3025 (Part-5) 1983 (RA2017)	Qualitative
		Turbidity	IS 3025 (Part-10) 1984 (RA2017)	0.5 NTU to 400 NTU
		pH	IS 3025 (Part-11) 1983 (RA2017)	1.0 to 13.0
		Conductivity	IS 3025 (Part-14) 1984 (RA 2013)	1 µS/cm to 200 mS/cm
		Acidity	IS 3025 (Part-22) 1986 (RA2014)	1.0 mg/L to 500 mg/L
		Total Dissolved Solids	IS 3025(Part-16) 1984 (RA2017)	1.0 mg/L to 20000.0 mg/L
		Total suspended solids	IS 3025(Part-17) 1984 (RA2017)	1.0 mg/L to 5000.0 mg/L
		Nitrate as NO ₃	IS 3025 (Part-34) 1988 (RA2014)	0.1 mg/L to 100 mg/L
		Nitrite as NO ₂	IS 3025(Part-34) 1988 (RA2014)	0.01 mg/L to 50.0 mg/L
		Total Alkalinity as CaCO ₃	IS 3025 (Part-23) 1986 (RA2014)	1.0 mg/L to 2000 mg/L
		Total Hardness as CaCO ₃	IS 3025(Part-21) 2009 (RA2014)	5.0 mg/L to 8000 mg/L
		Residual Free chlorine	IS 3025 (Part-26) 1986 (RA2014)	1.0 mg/L to 100.0 mg/L
		Ammonical Nitrogen	IS 3025 (Part-34) 1988 (RA2014)	1.0 mg/L to 1000.0 mg/L
	TKN	IS 3025 (Part-34) 1988 (RA2014)	2.0 mg/L to 1500.0 mg/L	
	Total Nitrogen	IS 3025 (Part-34) 1988 (RA2014)	1.0 mg/L to 2000mg L	

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		Sulphate as SO ₄	IS 3025 (Part 24) 1986 (RA2014)	5.0 mg/L to 1000 mg/L
		Chlorides as Cl	IS 3025 (Part 32) 1988 (RA2014)	2.0 mg/L to 1000.0 mg/L
		Calcium as Ca	IS 3025(Part-40) 1991 (RA2014)	1.0 mg/L to 1000.0 mg/L
		Magnesium as Mg	IS 3025(Part-46) 1994 (RA2014)	1.0 mg/L to 500.0 mg/L
		Total solids	IS 3025(Part-15) 2012 (RA2014)	1.0 mg/L to 5000.0 mg/L
		Fixed solids	APHA (2540 E:2012)	10.0 mg/L to 1000.0 mg/L
		Volatile solids	APHA (2540 E:2012)	1.0 mg/L to 1000.0 mg/L
		Dissolved Oxygen	IS 3025(Part-38) 1989 (RA2014)	0.2 mg/L to 25 mg/L
		Phosphorous	IS 3025 (Part 31) 1988 (RA2014)	0.05 mg/L to 500.0 mg/L
		Biochemical Oxygen demand	IS 3025 (Part 44) 1993 (RA2014)	1.0 mg/L to 5000.0 mg/L
		Chemical Oxygen Demand	IS 3025 (Part 58) 2006 (RA2017)	10 mg/L to 10000.0 mg/L
		Carbonate	IS 3025 (Part 51) 2001 (RA 2017)	1 mg/L to 2000 mg/L
		Bicarbonate	IS 3025 (Part 51) 2001 (RA 2017)	1 mg/L to 2000 mg/L