

**Laboratory** National Collateral Management Services Limited - Commgrade - Testing Services, Area Lab, Plot No. 27, Scheme No. 78, Part 2, Vijaynagar, Indore, Madhya Pradesh

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

**Certificate Number** TC-6799

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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 PRODUCTS			
1.	<b>Animal Food &amp; Feed</b>	Aerobic Microbial Count/ Total Plate Count/ Bacterial Count / Total Viable Count	ISO 4833-1 : 2013 IS 5402 : 2012	≥ 1 CfU/ml ≥ 10 CfU/gm
		Yeast & Mould	ISO 21527-2 : 2008 IS 5403 : 1999	≥ 1 CfU/ml ≥ 10 CfU/gm
		Coliform Bacteria	ISO 4832:2006 IS 5401 (Part -1) : 2012	≥ 1 CfU/ml ≥ 10 CfU/gm
		Enterobacteriaceae	ISO 21528-2 : 2004 IS/ISO 7402 : 1993 (RA 2012)	≥ 1 CfU/ml ≥ 10 CfU/gm
		E.coli	ISO 16649-2 : 2015	Presence/Absence/gm /ml
				MPN <0.3 - ≥110
		Salmonella	ISO 6579-1 : 2017	Presence/Absence/ 25gm /ml to 375 gm
2.	<b>Oil Seeds &amp; By-Product</b>	Aerobic Microbial Count / Total Plate Count/ Bacterial Count / Total Viable Count	ISO 4833-1 : 2013 IS 5402 : 2012	≥ 1 CfU/ml ≥ 10 CfU/gm
		Yeast & Mould	ISO 21527-2 : 2008 IS 5403 : 1999	≥ 1 CfU/ml ≥ 10 CfU/gm
		Coliform Bacteria	ISO 4832:2006/ IS 5401 (Part -1) : 2012	≥ 1 CfU/ml ≥ 10 CfU/gm
		Enterobacteriaceae	ISO 21528-2 : 2004 IS/ISO 7402 : 1993 (RA 2012)	≥ 1 CfU/ml ≥ 10 CfU/gm

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		E.coli	ISO 16649-2 : 2015	Presence/Absence/gm /ml
				MPN <0.3 - ≥110
		Salmonella	ISO 6579-1 : 2017	Presence/Absence/25g m /ml to 375 gm
<b>3.</b>	<b>Nuts &amp; Nut Products</b>	Aerobic Microbial Count / Total Plate Count/ Bacterial Count / Total Viable Count	ISO 4833-1 : 2013 IS 5402 : 2012	≥ 1 CfU/ml ≥ 10 CfU/gm
		Yeast & Mould	ISO 21527-2 : 2008 IS 5403 : 1999	≥ 1 CfU/ml ≥ 10 CfU/gm
		Coliform Bacteria	ISO 4832:2006 IS 5401 (Part -1) : 2012	≥ 1 CfU/ml ≥ 10 CfU/gm
		Enterobacteriaceae	ISO 21528-2 : 2004 IS/ISO 7402 : 1993 (RA-2012)	≥ 1 CfU/ml ≥ 10 CfU/gm
		E.coli	ISO 16649-2 : 2015	Presence/Absence/ gm /ml
				MPN <0.3 - ≥110
		Salmonella	ISO 6579-1 : 2017	Presence/Absence/25g m /ml to 375 gm
<b>4.</b>	<b>Cereals &amp; Pulses</b>	Aerobic Microbial Count / Total Plate Count/ Bacterial Count / Total Viable Count	ISO 4833-1 : 2013 IS 5402 : 2012	≥ 1 CfU/ml ≥ 10 CfU/gm
		Yeast & Mould	ISO 21527-2 : 2008 IS 5403 : 1999	≥ 1 CfU/ml ≥ 10 CfU/gm
		Coliform Bacteria	ISO 4832:2006 IS 5401 (Part-1): 2012	≥ 1 CfU/ml ≥ 10 CfU/gm
		Enterobacteriaceae	ISO 21528-2 : 2004 IS/ ISO 7402 : 1993 RA-2012	≥ 1 CfU/ml ≥ 10 CfU/gm

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		E.coli	ISO 16649-2 : 2015	Presence/Absence/gm /ml
				MPN <0.3 - ≥110
		Salmonella	ISO 6579-1 : 2017	Presence/Absence/25g m /ml to 375 gm
<b>II.</b>	<b>MOLECULAR ANALYSIS</b>			
<b>a.</b>	<b>GM Testing</b>			
<b>1.</b>	<b>Oilseeds and by-products</b>	Qualitative Real Time PCR test for 35S promoter, NOS terminator and FMV promoter	CG/IND/STP/PCR-01 (Issue no. 01; 01.04.2017), CG/IND/STP/PCR-02 (Issue no. 01; 01.04.2017)	Qualitative, Presence/Absence, LOD : 0.1%
<b>2.</b>	<b>Cereals and by products</b>	Qualitative Real Time PCR test for 35S promoter, NOS terminator and FMV promoter	CG/IND/STP/PCR-01 (Issue no. 01; 01.04.2017), CG/IND/STP/PCR-02 (Issue no. 01; 01.04.2017)	Qualitative, Presence/Absence, LOD : 0.1%
<b>3.</b>	<b>Pulses and by products</b>	Qualitative Real Time PCR test for 35S promoter and NOS terminator.	CG/IND/STP/PCR-01 (Issue no. 01; 01.04.2017), CG/IND/STP/PCR-02 (Issue no. 01; 01.04.2017)	Qualitative, Presence/Absence, LOD : 0.1%
<b>4.</b>	<b>Fruits and by-products</b>	Qualitative Real Time PCR test for 35S promoter and NOS terminator.	CG/IND/STP/PCR-01 (Issue no. 01; 01.04.2017), CG/IND/STP/PCR-02 (Issue no. 01; 01.04.2017)	Qualitative, Presence/Absence, LOD : 0.1%
<b>5.</b>	<b>Vegetables and by products</b>	Qualitative Real Time PCR test for 35S promoter, NOS terminator and FMV promoter	CG/IND/STP/PCR-01 (Issue no. 01; 01.04.2017), CG/IND/STP/PCR-02 (Issue no. 01; 01.04.2017)	Qualitative, Presence/Absence, LOD : 0.1%

**Ashok Kumar**  
Convenor

**N. Venkateswaran**  
Program Director

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6.	<b>Dry fruits and by-products</b>	Qualitative Real Time PCR test for 35S promoter and NOS terminator.	CG/IND/STP/PCR-01 (Issue no. 01; 01.04.2017), CG/IND/STP/PCR-02 (Issue no. 01; 01.04.2017)	Qualitative, Presence/Absence, LOD : 0.1%
7.	<b>Beverages</b>	Qualitative Real Time PCR test for 35S promoter and NOS terminator.	CG/IND/STP/PCR-01 (Issue no. 01; 01.04.2017), CG/IND/STP/PCR-02 (Issue no. 01; 01.04.2017)	Qualitative, Presence/Absence, LOD : 0.1%
8.	<b>Spices</b>	Qualitative Real Time PCR test for 35S promoter and NOS terminator.	CG/IND/STP/PCR-01 (Issue no. 01; 01.04.2017), CG/IND/STP/PCR-02 (Issue no. 01; 01.04.2017)	Qualitative, Presence/Absence, LOD : 0.1%
9.	<b>Honey</b>	Qualitative Real Time PCR test for 35S promoter and NOS terminator.	CG/IND/STP/PCR-01 (Issue no. 01; 01.04.2017), CG/IND/STP/PCR-02 (Issue no. 01; 01.04.2017)	Qualitative, Presence/Absence, LOD : 0.1%
b.	<b>Adulteration in Basmati rice</b>	Qualitative Real Time PCR test for Basmati / Non-basmati.	CommGrade/L3-IND-MOL-001 (Issue no. 01.0; 15.06.2017)	Qualitative, Presence/Absence, LOD : 0.1%

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**CHEMICAL TESTING**

I.	<b>FOOD &amp; AGRICULTURAL PRODUCTS</b>			
1.	<b>Animal Feed &amp; Feed Stuffs</b>	Moisture	GAFTA 2014 ( 2.1) IS 7874 Part 1(1975)	2 % to 20 %
		Crude Protein	GAFTA 2014 (4.1) IS 7874 Part 1(1975)	1 % to 70 %
		Acid Insoluble Ash	GAFTA 2014 (12.0) IS 7874 Part 1(1975)	0.01 % to 5 %
		Ash	GAFTA 2014 (11.0) IS 7874 Part 1(1975)	2 % to 30 %
		Crude Fibre	GAFTA 2014 (9.0) IS 7874 Part 1(1975)	2 % to 30 %
		Crude Fat	GAFTA 2014 (3.0 ) IS 7874 Part 1(1975)	0.5 % to 60 %
		Urease Activity (Untoasted) (Change in pH Unit)	AOCS Ba 9-58 (RA1973)	0.3 to 3.0 pH
		Urease Activity (Toasted) (Mg/N/G/Minutes At 30 °C)	GAFTA 2014 (22:0) EEC Method	0.05 to 0.3 Mg/N/G/Minutes at 30 °C
		Nitrogen Solubility Index (Toasted)	AOCS Ba11-65 (RA 1997)	15 % to 30 %
		Nitrogen Solubility Index (Untoasted)	AOCS Ba11-65 (RA 1997)	50 % to 70 %
		Acid Value in Extracted Oil	IS 3579: 1966 (RA 2000)	0.5 % to 35 %
		Colour	Qualitative CommGrade/L3-IND- FOO-004 (Issue 01.0; 05.02.2018)	NA

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2.	<b>Cereals, Pulses and by-products</b>	Moisture	IS 4333 (Part 2):2002 (RA 2012)	0.5 % to 20 %
		Protein	GAFTA 2014 (04:1)	2.0% to 60.0%
		Total Ash	GAFTA 2014 (11:0)	0.1 % to 10 %
		Crude Fibre	GAFTA 2014 (9:0)	0.1 % to 30 %
		Oil Content /Fat	GAFTA 2014 (3:0)	0.1 % to 30 %
		Acid Insoluble Ash	GAFTA 2014 (12:0)	0.01 % to 2 %
		Gluten Content	IS 1155: 1968 (RA 2010)	0.5 % to 30 %
		Broken	IS 4333(Part 1):1996 (RA 2012) IS 2813 (1995)	upto 25%
		Dehusked Grains	IS 4333(Part 1):1996 (RA 2012) IS 2813(1995)	upto 25 %
		Damaged Grains	IS 4333(Part 1):1996 (RA 2012) IS 2813(1995)	upto 25 %
		Discolored Grains	IS 4333(Part 1):1996 (RA 2012) IS 2813(1995)	upto 25 %
		Extraneous/ Foreign Matter	IS 4333(Part 1):1996 (RA 2012) IS 2813(1995)	upto 25 %
		Kernels with husk	IS 4333(Part 1):1996 (RA 2012) IS 2813(1995)	upto 25%
		Immature Kernels	IS 4333(Part 1):1996 (RA 2012) IS 2813(1995)	upto 25%
		Insect Damaged Kernels	IS 4333(Part 1):1996 (RA 2012) IS 2813(1995)	upto 25%

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		Other Food Grains, Red Grains	IS 4333(Part 1):1996 (RA 2012) IS 2813(1995)	upto 25%
		Red-Streaked Kernel	Codex Stan 198:1995 IS 4333(Part 1):1996 (RA 2012)	upto 25 %
		Green-Steaked Kernel	IS 4333(Part 1):1996 (RA 2012) IS 2813(1995)	upto 25 %
		Shrivelled, Shrunk	IS 4333(Part 1):1996 (RA 2012)	upto 25 %
		Ergot, Insect Bored, Worm Eaten, Green/ Brown Grains	CODEX STAN 171-1989	upto 25 %
		Aborted Grains	CODEX STAN 171-1989	upto 25 %
		Slightly damaged or touched	IS 4333(Part 1):1996 (RA 2012) IS 2813(1995)	upto 25 %
		Varietal admixture	IS 4333(Part 1):1996 (RA 2012) IS 2813(1995)	upto 25 %
		Fragments	IS 4333(Part 1):1996 (RA 2012) IS 2813(1995)	upto 25 %
		Head Rice	Codex Stan 198:1995 ISO 7301:2011 IS 2813(1995)	upto 25 %
		Heat Damaged	Codex Stan 198:1995 ISO 7970:2011	upto 25 %
		Peck	Codex Stan 198:1995 ISO 7301:2011	upto 25 %
		Whole Kernel	Codex Stan 198:1995 ISO 7301:2011	upto 100 %

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			IS 2813(1995)	
		Paddy/KG	Codex Stan 198:1995 ISO 7301:2011	0 to 100 units
		Insect bored, weeviled	Codex Stan 199:1995 IS 4333(Part 1):1996 (RA 2012)	upto 25 %
		Unsound Grains	ISO 7970:2011	upto 25 %
		Mouldy	ISO 7970:2011	upto 25 %
		Grains attacked by pests	ISO 7970:2011 IS 4333(Part 1):1996 (RA 2012)	upto 25 %
		Sprouted grains	ISO 7970:2011 EU 1272.2009	upto 25 %
		Ergot	ISO 7970:2011	upto 25 %
		Other Cereals	ISO 7970:2011	upto 25 %
		Bunted Grains/kg	ISO 7970:2011	upto 25%
		Vitreous grains	ICC 129:1980	0 to 100
		Bulk Density, Hectoliter Weight	ISO 7971-3:2009 IS 4333 (Part 3) :2002 (RA 2012)	40 kg/HL to 90 kg/HL
		Stained	CODEX STAN 171-1989	upto 25 %
		Kernels of other Colours	CODEX STAN 153-1985	upto 25 %
		Smooth	CG/IND/STP/F-02 (Issue 01, 01.04.2017)	upto 25 %
		Count per 100 g	IS 4333 (Part 4):2002 (RA 2017)	325 to 460
		TWC (Weight of thousand grains)	IS :4333 (Part 4):2002 (RA 2017)	30 g to 60 g
		Count per ounce	CG/IND/STP/F-01 (Issue 01, 01.04.2017)	30 to 75
3.	<b>Spices and Condiments (Ground &amp; Whole)</b>	Moisture	IS 1797:1985 (RA 2009) IS 2443:2008 (RA 2009)	2 % to 15 %
		Damaged Discolored	IS 2443:2008 (RA 2009)	0.1 % to 10 %



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		Shrivelled	IS 2443:2008 (RA 2009)	0.1 % to 10 %
		Immature seeds	IS 1797:1985 (RA 2009) IS 2443:2008 (RA 2009)	0.1 % to 10 %
		Foreign matter	IS 1797:1985 (RA 2009) IS 2443:2008 (RA 2009)	0.1 % to 10 %
		Weevilled seeds	IS 2443:2008 (RA 2009)	0.1 % to 10 %
		Coriander splits	IS 1797:1985 (RA 2009) IS 2443:2008 (RA 2009)	0.1 % to 50 %
		Seeds With Stalks	CommGrade/L3-IND-FOO-02 (Issue 01.0, 30.06.2017)	1.0 % to 20 %
		Test Weight (On Count Basis) Per Gram	CommGrade/L3-IND-FOO-02 (Issue 01.0, 30.06.2017)	200 to 450 count/gm
		Insect damaged matter	IS 2447:2010	0.1 % to 20 %
		Total Ash	IS 1797:1985 (RA 2009) IS 2443:2008 (RA 2009)	0.1 % to 10 %
		Acid insoluble ash	IS 1797:1985 (RA 2009) IS 2443:2008 (RA 2009)	0.02 % to 5 %
		Crude fiber	IS 1797:1985 (RA 2009)	1.0 % to 40 %
		Light Pepper	IS 1798:2010	0.10 % to 10 %
4.	<b>Oilseeds and by-products</b>	Moisture	IS 3579: 1966 (RA 2000) IS 4333 (Part 2):2002 (RA 2012)	4 % to 20 %
		Oil Content	IS 3579: 1966 (RA 2000)	10 % to 60 %
		Protein	GAFTA 2014 (04:1)	2 % to 45 %
		Acid Value in Extracted Oil	IS 3579: 1966 (RA 2000)	0.5 % to 35 %
		Damaged	IS 3579: 1966 (RA 2000)	upto 25 %
		Shriveled and Immature	IS 3579: 1966 (RA 2000)	0.0% to 25 %
		Split Kernels	IS 3579: 1966 (RA 2000)	upto 25 %
		Broken Kernels	IS 3579: 1966 (RA 2000)	upto 25 %
		Green Seeds	CommGrade/L3-IND-FOO-01 (Issue 01.0, 30.06.2017)	upto 25 %
		Other Oil Seeds	IS 3579: 1966 (RA 2000)	upto 25 %

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		Impurities	IS 3579: 1966 (RA 2000)	upto 25 %
5.	<b>Edible Oils &amp; Fats</b>	Moisture and Volatile matter in Oil	IS 5055: 1996 IS 548 (Part 1): 1964 (RA 2010)	0.01 % to 5 %
		F.F.A. in Oil	IS 548 (Part 1): 1964 (RA 2010)	0.01 % to 70 %
		Iodine Value	IS 548 (Part 1): 1964 (RA 2010)	5 to 200
		Acid Value	IS 548 (Part 1): 1964 (RA 2010)	0.25 to 75
		Peroxide Value	IS 548 (Part 1): 1964 (RA 2010)	(0.1 to 20 mEq)/1000g
		Insoluble Impurity	IS 548 (Part 1): 1964 (RA 2010)	0.01% to 1.00%
		Unsaponifiable Matter	IS 548 (Part 1): 1964 (RA 2010)	0.1% to 50%
		Specific Gravity/ Density	IS 548 (Part 1): 1964 (RA 2010)	0.6 to 1.5
		Saponification Value	IS 548 (Part 1): 1964 (RA 2010)	100 to 250
		Acetone Insoluble Matter	AOCS Ja 4-46: 1975 (RA 2003)	5 % to 70 %
		Hexane Insoluble Matter	AOCS Ja 3-87:1989 (RA 2003)	0.01 % to 1 %
		Phosphorus/Gums/ Equivalent phosphatides	AOCS Ca 12-55: 1973 (RA 2009)	1 mg/kg to 3000 mg/kg