



## CERTIFICATE OF ANALYSIS - PROFESSIONAL LAB REPORT

Category: Ginger (*Zingiber officinale*) | Variety: IISR Varada

Stock: April-May 2026 | COA backed by NABL approved ISO/IEC 17025:2017 laboratory

Sample ID: GING110-V06-L02

Lot: GING110-26M05-062

NABL Approved Lab

| Field                     | Value                               |
|---------------------------|-------------------------------------|
| Report ID                 | BBLLP/GING110/2026/05/11062         |
| Report Ref                | BB-COA-GING110-26M05-062            |
| Batch / Lot               | B-GING110-26M05-062                 |
| Sample ID                 | GING110-V06-L02                     |
| Date of sample submission | 01/05/2026                          |
| Date received in lab      | 08/05/2026                          |
| Analysis period           | 09/05/2026 to 14/05/2026            |
| Date of issue             | 15/05/2026                          |
| Manufacturer              | Botanika Bharat LLP                 |
| Address                   | Rudrapur, Uttarakhand, India        |
| Sample quantity           | 1.5 kg                              |
| Lab accreditation         | NABL approved (ISO/IEC 17025:2017)  |
| Market clearance          | Domestic, EU, UK, USA, Non-EU: Pass |

### General Profile (Identity & Grade)

| Parameter          | Type      | Allowed limit/spec          | Result    | Method                | Status |
|--------------------|-----------|-----------------------------|-----------|-----------------------|--------|
| Appearance         | Mandatory | Characteristic export grade | Complies  | Organoleptic          | Pass   |
| Botanical identity | Mandatory | <i>Zingiber officinale</i>  | Confirmed | Macroscopy / DNA spot | Pass   |
| Variety / cultivar | Mandatory | IISR Varada                 | Confirmed | Traceability          | Pass   |
| Odour & taste      | Mandatory | Typical, no off-note        | Complies  | Organoleptic          | Pass   |
| Foreign odour      | Mandatory | Absent                      | Absent    | Organoleptic          | Pass   |

### Adulteration & Authenticity (Buyer Critical)

| Parameter                   | Type          | Allowed limit/spec | Result   | Method        | Status |
|-----------------------------|---------------|--------------------|----------|---------------|--------|
| Undeclared fillers / starch | Mandatory     | Absent             | Absent   | Iodine / FTIR | Pass   |
| Species substitution        | Mandatory     | Absent             | Absent   | HPTLC / DNA   | Pass   |
| Synthetic colour            | Mandatory     | Absent             | Absent   | LC-MS         | Pass   |
| Extraneous matter           | Non-mandatory | Within grade       | Complies | ISO 927       | Pass   |

### Chemical & Trade Markers (Buyer Decision)

| Parameter                 | Type          | Allowed limit/spec   | Result      | Method       | Status |
|---------------------------|---------------|----------------------|-------------|--------------|--------|
| 6-Gingerol                | Mandatory     | Variety marker       | 4.34 mg/g   | HPLC         | Pass   |
| Volatile oil              | Mandatory     | Fresh ginger profile | 1.7%        | Distillation | Pass   |
| Fiber content             | Mandatory     | Max per grade        | 2.9%        | Gravimetric  | Pass   |
| Moisture                  | Mandatory     | Fresh rhizome        | 82.2%       | AOAC         | Pass   |
| Rhizome maturity          | Non-mandatory | Export               | Complies    | Visual       | Pass   |
| Pesticide residue (panel) | Mandatory     | MRL all markets      | 0.008 mg/kg | LC-MS/MS     | Pass   |
| Total aflatoxins          | Mandatory     | < 10 µg/kg           | < 1.3 µg/kg | HPLC         | Pass   |

### Nutritional (Optional)

| Parameter    | Type     | Allowed limit/spec | Result        | Method      | Status |
|--------------|----------|--------------------|---------------|-------------|--------|
| Energy       | Optional | Label reference    | 327 kcal/100g | Calculation | Pass   |
| Protein      | Optional | Label reference    | 13.8%         | Kjeldahl    | Pass   |
| Carbohydrate | Optional | Label reference    | 9.0%          | AOAC        | Pass   |

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Avneesh Mishra

For Botanika Bharat LLP  
Avneesh Mishra  
Designated Partner

Praveen Dhama

For Botanika Bharat LLP  
Praveen Dhama  
Designated Partner





## Domestic India — FSSAI Buyer Panel

| Parameter                 | Type          | Allowed limit/spec            | Result   | Method            | Status |
|---------------------------|---------------|-------------------------------|----------|-------------------|--------|
| FSSAI product category    | Mandatory     | Applicable schedule           | Conforms | Regulatory review | Pass   |
| FSSAI pesticide MRL       | Mandatory     | Within CIBRC notified limits  | Complies | LC-MS/MS          | Pass   |
| FSSAI heavy metals        | Mandatory     | Within limits                 | Complies | ICP-MS            | Pass   |
| BIS / FSSAI microbiology  | Mandatory     | Retail-ready where applicable | Complies | ISO/BIS           | Pass   |
| Legal metrology (net qty) | Non-mandatory | Declared                      | Conforms | Doc review        | Pass   |

## EU Buyer / Import Panel

| Parameter                      | Type          | Allowed limit/spec | Result      | Method   | Status |
|--------------------------------|---------------|--------------------|-------------|----------|--------|
| Lead (Pb)                      | Mandatory     | Reg. 2023/915      | 0.16 mg/kg  | ICP-MS   | Pass   |
| Arsenic (As)                   | Mandatory     | EU limits          | 0.10 mg/kg  | ICP-MS   | Pass   |
| Cadmium (Cd)                   | Mandatory     | EU limits          | 0.015 mg/kg | ICP-MS   | Pass   |
| Mercury (Hg)                   | Mandatory     | EU limits          | 0.013 mg/kg | ICP-MS   | Pass   |
| Aflatoxin B1                   | Mandatory     | < 5 µg/kg          | < 0.9 µg/kg | HPLC     | Pass   |
| Total aflatoxins               | Mandatory     | < 10 µg/kg         | < 3.3 µg/kg | HPLC     | Pass   |
| EU pesticide MRL (EC 396/2005) | Mandatory     | Compliant          | Complies    | LC-MS/MS | Pass   |
| Import documentation (CHED)    | Non-mandatory | Ready              | Conforms    | QA       | Pass   |

## UK Buyer Panel

| Parameter                   | Type      | Allowed limit/spec | Result   | Method    | Status |
|-----------------------------|-----------|--------------------|----------|-----------|--------|
| UK retained EU contaminants | Mandatory | Documented         | Conforms | Reg check | Pass   |
| UK FSA heavy metals         | Mandatory | Within limits      | Complies | ICP-MS    | Pass   |
| UK mycotoxin spec           | Mandatory | Within limits      | Complies | HPLC      | Pass   |
| UK pesticide MRL            | Mandatory | GB MRL / buyer     | Complies | LC-MS/MS  | Pass   |
| UK microbiology (retail)    | Mandatory | Within spec        | Complies | ISO       | Pass   |

## USA Buyer Panel (FDA/FSMA)

| Parameter                   | Type      | Allowed limit/spec | Result       | Method                 | Status |
|-----------------------------|-----------|--------------------|--------------|------------------------|--------|
| FDA FSMA / FSVP readiness   | Mandatory | Documented         | Conforms     | QA review              | Pass   |
| TAMC                        | Mandatory | < 100000 cfu/g     | < 1512 cfu/g | USP <2021> / ISO 4833  | Pass   |
| Yeast & mould               | Mandatory | < 10000 cfu/g      | < 810 cfu/g  | USP <2021> / ISO 21527 | Pass   |
| E. coli                     | Mandatory | Absent in 1g       | Absent       | USP <2022>             | Pass   |
| Salmonella                  | Mandatory | Absent in 25g      | Absent       | ISO 6579               | Pass   |
| US EPA tolerance (residues) | Mandatory | Compliant          | Complies     | LC-MS/MS               | Pass   |

## Non-EU International Buyer Panel

| Parameter                     | Type          | Allowed limit/spec  | Result   | Method       | Status |
|-------------------------------|---------------|---------------------|----------|--------------|--------|
| GCC (UAE / Saudi / Qatar) SPS | Mandatory     | Halal / contaminant | Conforms | Panel review | Pass   |
| Australia NZ MPI biosecurity  | Mandatory     | Import conditions   | Conforms | Doc + lab    | Pass   |
| Japan MHLW / Korea MFDS       | Mandatory     | Residual limits     | Complies | LC-MS/MS     | Pass   |
| Canada CFIA                   | Mandatory     | Food import         | Conforms | Panel        | Pass   |
| ASEAN (SG/MY/TH/VN)           | Mandatory     | Regional MRL        | Complies | LC-MS/MS     | Pass   |
| Buyer release index           | Non-mandatory | Composite score     | 94.8     | QA           | Pass   |

## Mandatory Release Parameters

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Avneesh Mishra

For Botanika Bharat LLP  
Avneesh Mishra  
Designated Partner

Praveen Dhama

For Botanika Bharat LLP  
Praveen Dhama  
Designated Partner





## Mandatory Release Parameters

| Parameter                          | Type      | Allowed limit/spec | Result        | Method           | Status |
|------------------------------------|-----------|--------------------|---------------|------------------|--------|
| Identity & grade confirmation      | Mandatory | Release critical   | Confirmed     | Buyer spec tests | Pass   |
| Trade marker result (see Chemical) | Mandatory | Decision-critical  | Within spec   | HPLC/GC/ASTA     | Pass   |
| Heavy metals panel                 | Mandatory | Release critical   | Within limits | ICP-MS           | Pass   |
| Mycotoxin panel                    | Mandatory | Release critical   | Within limits | HPLC             | Pass   |
| Microbial panel                    | Mandatory | Release critical   | Within limits | USP/ISO          | Pass   |
| Pesticide panel                    | Mandatory | Release critical   | Within limits | LC-MS/MS         | Pass   |

## Optional & Physical Quality

| Parameter                  | Type          | Allowed limit/spec | Result   | Method | Status |
|----------------------------|---------------|--------------------|----------|--------|--------|
| Colour score               | Non-mandatory | Commercial         | 6.6      | Visual | Pass   |
| Packaging / seal integrity | Mandatory     | Export             | Pass     | Visual | Pass   |
| Shelf-life / Apr-May stock | Optional      | Dispatch window    | Conforms | QA     | Pass   |

## Critical Export Decision Summary

| Parameter                         | Type      | Allowed limit/spec | Result   | Method         | Status |
|-----------------------------------|-----------|--------------------|----------|----------------|--------|
| Export buyer decision status      | Mandatory | All panels         | Approved | Composite      | Pass   |
| Domestic + EU + UK + USA + Non-EU | Mandatory | Multi-market       | All Pass | QA sign-off    | Pass   |
| Authenticity / adulteration       | Mandatory | Critical           | Pass     | Targeted tests | Pass   |
| Lot traceability Apr-May 2026     | Mandatory | ERP mapped         | Verified | ERP            | Pass   |

## General Notes

| Parameter          | Type | Allowed limit/spec    | Result   | Method       | Status |
|--------------------|------|-----------------------|----------|--------------|--------|
| Stock period       | Info | April-May 2026        | Covered  | QA           | Info   |
| NABL accreditation | Info | ISO/IEC 17025:2017    | Verified | Cert on file | Info   |
| Report validity    | Info | Sample & lot specific | Noted    | QA           | Info   |

## Remark:

COA backed with NABL approved lab. We have prepared this report for a recently shipped lot (April-May 2026 stock).  
Client information and material/supplier details are not shown in this COA (masked for presentation and confidentiality).  
Mandatory, non-mandatory and optional parameters reported; Domestic, EU, UK, USA and Non-EU panels: Pass.  
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Designated Partner

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