



*Indo-American
Hybrid Seeds (India) Pvt. Ltd.*

"PRACTICING QUALITY SEED TESTING SINCE 1965"

International Seed Testing Association (ISTA)

Accredited Seed Laboratory INML0700

First Indian ISTA-accredited seed testing laboratory, authorized to issue Orange International Seed Lot Certificates and Blue International Seed Sample Certificates to both public and private seed companies in India since October, 2002

ISTA accredited Seed Testing Laboratory INML0700 is also a BICON Australian Government approved laboratory



Lab Mission

- Use of standardized and validated seed testing methods in accordance to the ISTA rules.
- Samples are tested quickly and accurately.
- Committed to quality, precision and excellence in seed testing services.
- Tests performed by experienced and technically trained Analysts.



SERVICES OFFERED

- Seed Sampling
- Seed Quality Testing
- Seed Health Testing
- Biotechnology
Laboratory Services

Sampling

Sampling is done to get a representative sample of the seed lot to conduct various tests in the Lab. Representative sample must be drawn in order to obtain uniform and accurate seed testing results



Drawing of submitted seed sample



Automatic Seed sample divider

Seed Quality Testing

Purity analysis test: Indicates percent pure seed, inert matter & other seeds in a seed lot



Sub sampling for the Purity Test & Illuminated-magnified Purity board for purity analysis

- **Determination of other seeds by number:** Determines the number and identification of other seeds in a test sample. In international trade this analysis is used mainly to determine the presence of seeds of noxious or undesirable species

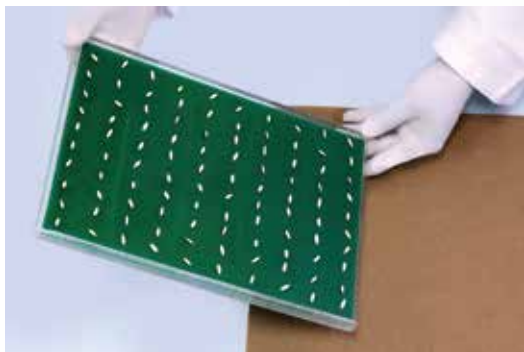


Binocular microscope with Imaging Screen



Seed Bank – collection of seeds for reference

- **Standard Germination test:** Determines the percentage of normal seedlings that develop under favourable conditions



Vacuum counter



Between paper method



Walk in Germinator



Pleated paper method



Controlled Environment Chamber

- **Tetrazolium test:** A quick biochemical viability test which indicates the percentage of viable (live) and non-viable seeds in seed sample regardless of its dormancy level. This test can be performed within 24-48 hours



Tetrazolium test for Beans and Corn

- **Seed Moisture test:** Seed moisture content is the most vital parameter influencing seed quality and storability



Moisture testing by Hot air oven method

Electronic moisture meter



- **Seed Vigour tests:** Indicates the emergence and storage potential of seed lots

Conductivity test

Measurement of electrical conductivity of leachates provides an assessment of vigour. Seed lots with high leachate conductivity are considered to have low vigour and low conductivity are considered to have high vigour



Cold test for Corn

Cold wet soil and low temperature stress determines the performance of seed lots

Cool test for Cotton

Measures the ability of seed to grow under the stress of cool temperature



Accelerated ageing test

High humidity and high temperature stress test to assess seed vigour and storability of seed lots



Radicle emergence test

High counts of early radicle emergence indicates high seed vigour



Emergence test using Peat media in pro-trays

To predict planting value under normal field condition



Seed Health Testing

Laboratory is strengthened and equipped for seed health screening methods for seed borne disease of vegetables and field crops as per International Seed Testing Association (ISTA) / International Seed Health Initiative (ISHI) / National Seed Health System (NSHS) protocols with conventional, serological and molecular diagnosis.

Services offered at our Lab for screening of below seed borne pathogens

- *Aphelenchoides besseyi*: *Oryza sativa* (Rice)
- *Clavibacterium michiganensis* subsp. *michiganensis*: Tomato / Pepper
- *Cucumber Green Mottle Mosaic Virus*: *Cucurbita* sp.
- *Pyricularia oryzae*: *Oryza sativa* (Rice)
- *Tobamovirus*: Tomato / Pepper
- *Xanthomonas axonopodis* pv. *vesicatoria*: Tomato / Pepper / *Brassica* sp.

Plant Pathogen screening lab



Seed Health Lab



Fungal cultures



Bacterial isolates



Nicotiana tabacum "Xanthi NN"

Biotechnology Laboratory



IAHS Biotechnology lab is recognized and registered with the Department of Scientific & Industrial Research (DSIR), MS&T, GOI. The laboratory having accomplished scientists, highly trained technicians and state-of-the-art infrastructure to provide rapid and advanced services to our customers.

We use PCR based genetic markers such as RAPD, ISSR, SSR, SCAR, CAPS and gene specific for testing the various types samples and able to offer accurate test results with rapid turnaround time

- **Genetic purity test:** Identification of Out crosses | Selves | Seed mixes | Seed swap

**SERVICES
OFFERED**



Selves identification

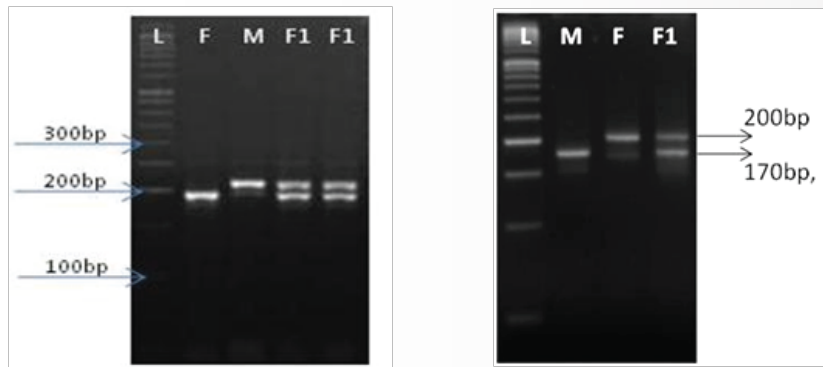


Outcross identification



Admixtures identification

- **Varietal Identification:** Developing DNA based genetic fingerprint profiles of parental lines and Hybrids



- **Heterotic grouping:** Studying the genetic diversity of germplasm is one of the keys to broadening the genetic bases with constant genetic gain in hybrid breeding. Molecular markers are the best tool in assigning germplasm into heterotic groups and identify their heterotic pattern in different crops
- **Disease resistance screening:** The lines will be tested for specific disease resistance by tightly linked and gene specific markers

Tests available: Tomato

- Tomato yellow leaf curl virus (TYLCV): Ty1, Ty2, Ty3, Ty4, Ty5, Ty6
- Tomato mosaic virus (ToMV) Tm1, Tm2 and Tm2a
- Tomato Spotted Wilt Virus (TSWV)-TSWV-5b
- Bacterial wilt (*Ralstonia solanacearum*): BW-6 and BW12
- Bacterial speck (*Pseudomonas syringae pv. Tomato*) - Pto
- Bacterial spot (BS) (*Xanthomonas perforans*): Rx3 and Rx4
- Late Blight- *Phytophthora infestans*: Ph2 and Ph3
- Fusarium Wilt (*Fusarium oxysporum f.sp. Lycopersici*): I2 and I3
- Stemphylium (*Sm*) Gray leaf spot, *Stemphylium solani*
- Verticillium Wilt (*V. dahliae* and *V. albo-atrum*): Ve1 and Ve2
- Powdery mildew (Lv) *leveillula taurica*
- Leaf mold *Cladosporium fulvum*: Cf9
- Root Knot Nematode (*Meloidogyne incognita*): Mi23
- **Molecular breeding:** Marker Discovery, Marker Assisted Selection (MAS), Marker Assisted Backcrossing (MABC)



Tests available: Tomato, Hot pepper and Rice

Seed export services

- Orange International Seed Lot Certificate (OIC)
- Blue International Seed Sample Certificate (BIC)
- Seed Analysis Certificate (SAC)



For any customized quality testing contact us

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