Central Insecticides Laboratory

In India, there is a comprehensive legislation known as **Insecticides Act, 1968** which regulates the import, manufacture, sale, transport, distribution and use of insecticides with a view to prevent risk to human beings or animals and the matters connected therewith. By virtue of Section 16 of Insecticide Act, 1968, Central Government has established **Central Insecticides Laboratory (CIL)** on 28th February, 1981 by Gazette Notification.

The Central Insecticides Laboratory consists of four Divisions as mentioned below:

- Chemistry Division
- Bioassay Division
- Medical Toxicology Division
- Packaging & Processing Division

Functions of CIL:

The functions of the Laboratory as envisaged under Rule 5 of Insecticides Rules 1971 are as follows: -

- To analyse such samples of insecticides sent to it under the Act by any officer or authority and submission of certificates of analysis to the concerned authority.
- To carry out such investigations as may be necessary for the purpose of ensuring the conditions of Registration of Insecticides.
- To determine the efficacy and toxicity of insecticides;
- To carry out such other functions as may be entrusted to it by the Central Government or by a State Government with the permission of the Central Government & after consultation with the Central Insecticides Board.

Activities of CIL:

- To verify Quality of samples of Insecticides, submitted by any Officer or Authority Authorized by the Central or State Government.
- To investigate Insecticides with a view to verify conditions of registration.
- To determine efficacy and Toxicity of Insecticides; and
- Any other function as may be entrusted by the Central Government or by a State Government with the permission of the Government and after consultation with the Central Insecticides Board.

Central Insecticides Laboratory (Chemistry Division)

Sl. No.	State/UTs	Number of Laboratories	Location	Target/Capacity of analysis per annum
1	All States/UTs	1	Faridabad	1600

DIVISION –WISE DETAILS OF ACTIVITIES & ACHIEVEMNT:

CHEMISTRY DIVISION

OBJECTIVE:

- To discharge the techno-legal duties as specified under Rule 5 of Insecticides Rules, 1971.

ACTIVITIES:

- To analyse samples of pesticides sent to it under the Act by any officer or authority authorized by the Central or State Governments and submission of certificate of analysis to the concerned authority;
- To carry out such investigations as may be necessary for the purpose of ensuring the conditions of Registration of insecticides;
- To validate methods of analysis for newly introduced pesticides for their adoptability.
- To facilitate formulation of Indian Standards on pesticides.

NABL Accreditation:

The Chemistry Division of Central Insecticides Laboratory has already received the Certificate of Accreditation by National Accreditation Board for Testing and Calibration Laboratories(NABL) for Chemical & Biological testing upto August, 2022.

ACHIEVEMENT:

Targets on analysis capacities of laboratories have been fixed. Accordingly, the statistics on quality control of pesticides at State Pesticides Testing Laboratories (SPTLs), Central Insecticides Laboratory (CIL) and action taken by the States is given in following table respectively.

PESTICIDE TESTING LABORATORIES IN STATE/UTs

Sl. No.	State/UTs	Number of Laboratories	Location	Target/Capacity of analysis per annum
1.	Andhra Pradesh	5	Guntur, Anantapur, Tadepalligudem,, Vishakhapatnam and Kurnool	5270
2.	Arunachal Pradesh	1	Naharlagun	--
3.	Assam	1	Guwahati	200
4.	Bihar	1	Patna	920
5.	Chhattisgarh	1	Raipur	500
6.	Gujarat	2	Junagarh & Gandhinagar	2000

7.	Haryana	4	Karnal, Sirsa, Rohtak & Panchkula	3300
8.	Himachal Pradesh	1	Shimla	500
9.	Jammu & Kashmir	2	Srinagar & Jammu	1100
10.	Jharkhand	1	Ranchi	500
11.	Karnataka	6	Bangalore, Bellary, Dharwad, Shimoga, Kotnoor & Mandya	6800
12.	Kerala	1	Trivendrum	2500
13.	Madhya Pradesh	1	Jabalpur	1500
14.	Maharashtra	4	Pune, Amaravathi, Thane & Aurangabad	8000
15.	Manipur	1	Mantripukhri	30
16.	Mizoram	1	Neihbawih	20
17.	Odisha	1	Bhubaneshwar	1250
18.	Puducherry	1	Puducherry	500
19.	Punjab	3	Amritsar, Ludhiana & Bhatinda	4500
20.	Rajasthan	7	Jaipur, Bikaner, Udaipur, Kota, Jodhpur, Sriganganagar & Bharatpur	3700
21.	Tamil Nadu	15	Coimbatore, Kovilpatti, Erode, Madurai, Trichy, Aduthrai, Salem, Cuddalore & Kanchipuram, Theni, Nagapattinam, Dharmpuri, Vellore, Sivaganga, Tirunelveli	21850
22.	Telangana	2	Rajendra Nagar and Warangal	3900
23.	Tripura	1	Agartala	150

24.	Uttarakhand	2	Rudrapur, Srinagar (Pauri Garhwal)	400
25.	Uttar Pradesh	4	Meerut, Lucknow (2) & Varanasi	7000
26.	West Bengal	1	Midnapore	650
27.	Nagaland	1	Medziphema, Dimapur	--
	TOTAL	71		77040
B. Regional Pesticide Testing Laboratories				
1.	All States/UTs	2	1. Kanpur	1550
			2. Chandigarh	1550
C. Central Insecticides Laboratory (Chemistry Division)				
1.	All States/UTs	1	Faridabad	1600

QUALITY CONTROL STATISTICS OF SAMPLES ANALYSED AT CHEMISTRY DIVISION, CENTRAL INSECTICIDES LABORATORY (CIL), FARIDABAD DURING LAST FIVE YEARS (2019-20 to 2023-24 { up to Feb.2024)) Click Here

Capacity & Achievements:

The annual capacity of the division is to analyse 1600 samples. The number of samples analysed in the division till 2023-24 is as follows:

Year	Annual Capacity	Achievement (in terms of Nos. of samples analysed)
2014-15	1600	1049
2015-16	1600	1072
2016-17	1600	1063
2017-18	1600	1221
2018-19	1600	1751
2019-20	1600	904
2020-21	1600	1197
2021-22	1600	1382
2022-23	1600	1394
2023-24	**1600**	**1571**

BIOASSAY DIVISION

ACTIVITIES:

To discharge the techno-legal requirement as specified under Rule 5(d) of Insecticides Rule 1971.

- Evaluation of pesticides for Bio-effectiveness and Phytotoxicity
- Development of bioassay techniques for quality control.
- Evaluation of bio-pesticides on quality control parameters.
- Preparation of information/material and training of scientists / analysts.

TARGETS & ACHIEVEMENTS:

The Bioassay Division evaluated the samples for Bio-effectiveness and phytotoxicity and for quality control parameters for Pre-Registration verification (PRV) which are presented below: -

Year	Annual Capacity	Achievement (in terms of Nos. of samples analysed)
2013-14	Chemical Pesticides - 60	Chemical Pesticides - 64
	Bio-pesticides - Not Fixed	Bio-pesticides - 107
2014-15	Chemical Pesticides - 60	Chemical Pesticides - 75
	Bio-pesticides - Not Fixed	Bio-pesticides - 128
2015-16	Chemical Pesticides - 60	Chemical Pesticides - 71
	Bio-pesticides - Not Fixed	Bio-pesticides - 132
2016-17	Chemical Pesticides - 60	Chemical Pesticides - 63
	Bio-pesticides - Not Fixed	Bio-pesticides - 75
2017-18	Chemical Pesticides - 60	Chemical Pesticides - 61
	Bio-pesticides - Not Fixed	Bio-pesticides - 135
2018-19	Chemical Pesticides - 60	Chemical Pesticides - 36
	Bio-pesticides - Not Fixed	Bio-pesticides - 120
2019-20	Chemical Pesticides - 60	Chemical Pesticides - 36
	Bio-pesticides - Not Fixed	Bio-pesticides - 222

2020-21	Chemical Pesticides - 60	Chemical Pesticides - 19
	Bio-pesticides - Not Fixed	Bio-pesticides - 140
2021-22	Chemical Pesticides – 60 Referral/ Investigation- Not Fixed	Chemical Pesticides – 43 Biopesticide - 87
	Bio-pesticides - Not Fixed	Bio-pesticides - 413
2022-23	Chemical Pesticides – 60 Referral/ Investigation- Not Fixed	Chemical Pesticides – 46 Biopesticide - 44
	Bio-pesticides - Not Fixed	Bio-pesticides - 367
2023-24	Chemical Pesticides – 60 Referral/ Investigation- Not Fixed	Chemical Pesticides – 50 Biopesticide - 41
	Bio-pesticides - Not Fixed	Bio-pesticides - 293

Detailed parameters tested for PRV samples at Bioassay Division

S.No.	Name of the Bio-pesticides	Parameters tested
1.	*Trichoderma viride &* *T. harzianum*	CFU(Colony Forming Units) Counts Antagonistic capability
		pH
		Suspensibility
		Pathogenic contaminants
2.	Nuclear Polyhydrous Virus(NPV)	POB count
		LC50 on target insects for Potency
		Pathogenic contaminants
		pH
		Moisture content
		Suspensibility

3.	*Pseudomonas fluorescens*	Viable cell count
		Antagonistic capability
		Moisture content
		Pathogenic contaminants
		Suspensibility
		pH
4.	*Beauveria bassiana*	*CFU's count,*
		pH,
		Moisture contents,
		suspensebility, Lc 50,
		Human Pathogenic contaminants
5.	*Metarhizium anisopliae*	*-do-*
6.	*Verticillium lecanii*	*-do-*
7.	*Paecilomyces lilacinus*	*CFU's count,*
		pH,
		Moisture contents,
		suspensebility,
		Antagonestic capacity,
		Human Pathogenic contaminants

NABL Accreditation of CIL

The Central Insecticides Laboratory has obtained the renewal Certificate of Accreditation by National Accreditation Board for Testing and Calibration

Laboratories(NABL) ISO/IEC 17025:2017 in the field of Biological and Chemical testing with the validity permission up to 12.11.2024.

Pesticides Testing Facilities

The Division is maintaining cultures of filed crop pests, pests of public health importance, stored grain pests, plant pathogenic fungi and seeds of weed species for tests and trial purposes.

Pesticides Testing Methods

Standard laboratory and field testing methods are being employed for testing bio-efficacy of chemical pesticides and bio-pesticides such as poisoned medium method, poison bait method, using dusting apparatus for stomach poisons, dry films of stomach poisons on plants, residual films method, peet grady method, potters tower method and field application of pesticides and subsequent observations.

MEDICAL TOXICOLOGY DIVISION

OBJECTIVES & ACTIVITIES

- Acute, Oral/Dermal LD 50 study.
- Toxicity/Safety evaluation of pesticides before and after introduction.
- Toxico-vigilance activities regarding pesticides.
- Training on safe and judicious use of pesticides to Farmers in FFS.
- Preparation of technical material on pesticide toxicity.

TARGET & ACHIEVMENT

Acute Oral Toxicity Study (LD50):

Year	Annual Capacity	Achievements (in terms of No. of samples analysed)
2010-11	20	20
2011-12	20	20
2012-13	20	20
2013-14	20	20
2014-15	20	20
2015-16	20	20

2016-17	20	20
2017-18	20	20
2018-19	20	20
2019-20	20	20
2021-22	20	06
2022-23	20	20
2023-34	20	04

ACHIEVEMENTS

Training imparted to about more than 300 Farmers of various villages of Haryana state covered in FFS on "Safe and Judicious use of Pesticide" during last 6 years.

PACKAGING AND PROCESSING DIVISION

Packaging division was started functioning in 1977 to perform the duties assigned to the Division. The existing target of the Division is to analysed 150 samples per annum. The brief information to the Division is as under:

OBJECTIVES AND ACTIVITIES:

Packaging division is one the four Divisions of Central Insecticides Laboratory, significant activities of the Division are as under:

- Pre and post registration verification of packing and labelling claims/requirements made by the manufacturers/registrants
- Verification/analysis of the packaging and labelling samples received under Section 5(C) of the Insecticides Rules, 1971 in the context of conditions laid down on the certificate of registration issued under Insecticides Act, 1968.
- R&D-Development /verification of New/Alternate safety and economic packaging devices/systems by conducting laboratory tests and field trials.
- Technical auditing of physic-chemical analysis of pesticides samples under Internal Technical Auditing Scheme of CIL.
- Technical guidance to the Bureau of Indian Standards, in formulating, updating and amending the standards of pesticides quality control, safety storage, transportation and use. Imparting training to the enforcement functionaries of States/UTs on various aspects of pesticides relating to packaging, labelling and other requirements.

TARGET & ACHIEVEMENTS:

The annual capacity of the division is to analyse 150 samples. The number of samples analysed in the Division till 2023-24 is as follows:

S. No.	Year/period	Annual Capacity	Achievements (in terms of No. of samples analysed)
1	2007-08	150	139
2	2008-09	150	78
3	2009-10	150	94
4	2010-11	150	52
5	2011-12	150	68
6	2012-13	150	70
7	2013-14	150	57
8	2014-15	150	34
9	2015-16	150	35
10	2016-17	150	65
11	2017-18	150	54
12	2018-19	150	52
13	2019-20	150	33
14	2020-21	150	24
15.	2021-22	150	61
16	2022-23	150	13
17	2023-24	150	35