

**46**

**STANDING COMMITTEE ON  
CHEMICALS AND FERTILIZERS**

**(2023-24)**

**SEVENTEENTH LOK SABHA**

**MINISTRY OF CHEMICALS AND FERTILIZERS  
(DEPARTMENT OF CHEMICALS AND  
PETROCHEMICALS)**

**INSECTICIDES & PESTICIDES – PROMOTION AND DEVELOPMENT  
INCLUDING SAFE USAGE - LICENSING REGIME FOR INSECTICIDES**

**FORTY-SIXTH REPORT**



**LOK SABHA SECRETARIAT**

**NEW DELHI**

***December, 2023/ Agrahayana, 1945 (Saka)***

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**INSECTICIDES & PESTICIDES – PROMOTION AND DEVELOPMENT  
INCLUDING SAFE USAGE - LICENSING REGIME FOR INSECTICIDES**

*Presented to Lok Sabha on 19 December 2023*

*Laid in Rajya Sabha on 19 December 2023*



**LOK SABHA SECRETARIAT**

**NEW DELHI**

*December, 2023/ Agrahayana, 1945 (Saka)*

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\*To be appended

**COMPOSITION OF THE STANDING COMMITTEE ON CHEMICALS AND  
FERTILIZERS (2022-23)**

**Dr. Shashi Tharoor - Chairperson**

**MEMBERS**

**LOK SABHA**

2. Shri Dibyendu Adhikari
3. Maulana Badruddin Ajmal
4. Shri C.N. Annadurai
5. Shri Deepak Baij
6. Shri Ramakant Bhargava
7. Shri Prataprao Patil Chikhalikar
8. Shri Rajeshbhai Naranbhai Chudasama
9. Dr. Sanjay Jaiswal
10. Shri Ramesh Chandappa Jigajinagi
11. Shri Kripanath Mallah
12. Shri Satyadev Pachauri
13. Smt. Aparupa Poddar
14. Shri Arun Kumar Sagar
15. Shri Muniyan Selvaraj
16. Dr. Sanjeev Kumar Singari
17. Shri Atul Kumar Singh
18. Shri Pradeep Kumar Singh
19. Shri Uday Pratap Singh
20. Shri Indra Hang Subba
21. Shri Parbhubhai Nagarbhai Vasava

**RAJYA SABHA**

22. Shri G.C.Chandrashekhar
23. Dr. Anil Jain
24. Shri Arun Singh
25. Shri Ram Nath Thakur\*
26. Shri Vijay Pal Singh Tomar
27. Vacant
28. Vacant
29. Vacant
30. Vacant
31. Vacant

**SECRETARIAT**

- |    |                      |   |                     |
|----|----------------------|---|---------------------|
| 1. | Smt. Geeta Parmar    | - | Additional Director |
| 2. | Shri Kulvinder Singh | - | Deputy Secretary    |

*\*Nominated w.e.f. 13.02.2023 vide Lok Sabha Bulletin- Part-II Para No. 6251 dated 14.02.2023.*

**COMPOSITION OF THE STANDING COMMITTEE ON CHEMICALS AND  
FERTILIZERS (2023-24)**

**Dr. Shashi Tharoor - Chairperson**

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31. Vacant

**SECRETARIAT**

- |                         |   |                  |
|-------------------------|---|------------------|
| 1. Shri Chander Mohan   | - | Joint Secretary  |
| 2. Smt. Geeta Parmar    | - | Director         |
| 3. Shri Kulvinder Singh | - | Deputy Secretary |

\* Vacant *vice* Shri Uday Pratap Singh, MP(LS) who has resigned his seat in LS w.e.f. 06.12.2023.  
[vide Lok Sabha Secretariat Notification No.21/1(1)/2023/T(B) dated 6<sup>th</sup> December, 2023]

## INTRODUCTION

I, the Chairperson, Standing Committee on Chemicals and Fertilizers (2023-24) having been authorized by the Committee do present on their behalf, this Forty-Sixth Report (Seventeenth Lok Sabha) on 'Insecticides & pesticides – promotion and development including safe usage - licensing regime for insecticides' pertaining to the Department of Chemicals and Petrochemicals, Ministry of Chemicals and Fertilizers.

2. The Committee had a briefing by the representatives of the Department of Chemicals and Petrochemicals on 08<sup>th</sup> February, 2023 and took oral evidence of the representatives of the Department of Chemicals and Petrochemicals, Ministry of Chemicals and Fertilizers; Ministry of Environment, Forests and Climate Change; Ministry of Agriculture & Farmers Welfare and Ministry of Health and Family Welfare on 20<sup>th</sup> July, 2023.

3. The Committee (2023-24) considered and adopted the Report at their sitting held on 14<sup>th</sup> December, 2023.

4. The Committee wish to express their thanks to the officers of the Department of Chemicals and Petrochemicals, Ministry of Chemicals and Fertilizers; Ministry of Environment Forests and Climate Change; Ministry of Agriculture & Farmers Welfare and the Ministry of Health and Family Welfare for tendering their evidence and placing before them all the requisite information sought for in connection with the examination of the subject.

5. The Committee also place on record their appreciation for the valuable assistance rendered to them by the officials of the Lok Sabha Secretariat attached to the Committee.

6. For facility of reference and convenience, the observations/ recommendations of the Committee have been printed in bold letters at the end of the Report.

***New Delhi;***  
***14 December, 2023***  
***23 Agrahayana, 1945 (Saka)***

**DR. SHASHI THAROOR**  
**CHAIRPERSON,**  
**STANDING COMMITTEE ON**  
**CHEMICALS AND FERTILIZERS.**

## **ACRONYMS/ABBREVIATIONS OF THE TERMS USED IN THE REPORT**

ARC	Advanced Research Centres
BTI	Bacillus Thuringiensis Israelensis
CIBRC	Central Insecticides Board and Registration Committee
CIL	Central Insecticide Laboratory
CIPET	Central Institute of Petrochemicals Engineering & Technology
CPCB	Central Pollution Control Board
CPDS	Chemicals Promotion Development Scheme
CSIR	Council of Scientific & Industrial Research
DA&FW	Department of Agriculture & Farmers Welfare
DCPC	Department of Chemicals and Petrochemicals
DDT	Dichlorodiphenyltrichloroethane
DIPAMS	Department of Investment and Public Asset Management
DPE	Department of Public Enterprises
DPPQS	Directorate of Plant Protection, Quarantine and Storage
EA	Executive Agency
FARM	Financing Agrochemical Reduction and Management
F&AC	Finance & Administrative Committee
F&AC	Finance and Administrative Committee
F.Y	Financial Year
GDP	Gross Domestic Product
GEF	Global Environment Facility
HHPs	Highly hazardous Pesticide
ICAR	Indian Council of Agricultural Research
ICAR-NBAIM	National Bureau of Agriculturally Important Microorganisms
IGR	Insect Growth regulators
IPFT	Institute of Pesticide Formulation Technology
IVPM	Integrated Vector and Pest Management
KVKs	Krishi Vigyan Kendras
LLIN	Long Lasting Insecticidal Nets
M.O.U	Memorandum of Understanding
MoC&F	Ministry of Chemicals and Fertilizers
MoEF&CC	Ministry of Environment, Forest and Climate Change
MoHFW	Ministry of Health & Family Welfare
NEERI	National Environment Engineering Research Institute
NITI Aayog	National Institution for Transforming India Aayog
PLI	Production Linked Incentive
POPs	Persistent organic pollutants
PSU	Public Sector Undertaking
R&D	Research and Development
RC	Registration Committee
SC	Stockholm Convention
UNIDO	United Nations Industrial Development Organization
USD	United State Dollar

**REPORT  
PART- I  
NARRATION**

**INTRODUCTORY**

Pesticides are used to kill or repel the pests. They can broadly be classified in the following categories:-

- i. **Insecticides:** The chemicals that are used to protect plants from insects and pests are known as Insecticides.
- ii. **Fungicides:** This class of crop protection chemicals is used to control the spread of fungal diseases in plants.
- iii. **Herbicides:** Herbicides are chemicals that kill or control the growth of weeds in the cultivation area.
- iv. **Bio-Pesticides:** They are Pesticides of biological origin, i.e., derived from animals, plants, bacteria etc.
- v. **Others:** This includes plant growth regulators, nematocides, rodenticides and fumigants.

**Promotion and Development of Insecticides and Pesticides**

2. The Committee desired to know how the Department of Chemicals and Petrochemicals (DCPC) functions for promotion and development of Insecticides & Pesticides – including their safe usage, how the Department's role is restricted on the issue and also the role of the Department of Agriculture and Farmers Welfare (DA&FW) in this regard. The Department in their written reply has submitted that Pesticides are regulated through a comprehensive legislation – the Insecticides Act, 1968 and the Insecticides Rules, 1971 framed thereunder, which are administered by the DA&FW. This Act regulates the import, manufacture, sale, transport, distribution and use of Insecticides to prevent risk to human beings or animals and for matters connected therewith. Further, for effective implementation of the provisions of the Insecticides Act, the DA&FW through its attached office, the Directorate of Plant Protection, Quarantine and Storage (DPPQS), administers various statutory functions under the Insecticide Act, 1968. These include theregistration of Insecticides, inclusion of chemical/Insecticides in the schedule to the Act, notification of Insecticides Inspectors, amendments in Insecticides Rules etc .

3. Elaborating on the issue, a representative of the Department, during evidence, apprised the Committee regarding Insecticides Act as under:-

*“Sir, the Insecticides Act regulates the import, manufacture, transport, distribution, stocking, sale and use. So, from manufacturing and import till used by the farmers, it contains everything, having the safety and efficacy issues in mind. Under the Insecticides Act, there are well defined responsibilities of the Central Government and the State Governments. The Central Government's primary responsibility is to grant registration and quality control. After getting registration from the Central Government through the regulatory body, then manufacturing, sale, transport, distribution and use*



*lies with the State Government. The State Government has major component of quality control through State Pesticides Testing Laboratories. Here, the State Governments, if they find any safety issue and efficacy issue, can prohibit the sale, distribution and use of Pesticides for two months which can be extended further. There are powers for appeal and revision under the Act.”*

4. When asked to elaborate on the role of the Department in promotion and development of Pesticides, the Department has informed as under:-

- DCPC plays the role of promoter for the growth of the Industry.
- DCPC takes up inter-ministerial coordination to sort out the problems of the chemicals and petrochemicals sector.
- DCPC extends financial support under the Chemicals Promotion Development Scheme (CPDS) for organizing seminars, conferences and training programs to create awareness among the farmers about judicious use of agrochemicals and fertilizers.

5. During evidence, a representative of the Department explained about Pesticides as under:-

*“I will just move on to the exact introduction of the Pesticides as such. But before going into that, let me explain that pesticide is broadly classified into insecticide, fungicide and others. The major contribution of Pesticides is in the respective order as herbicide, fungicide and insecticide. Now, it helps prevent the loss of agricultural products from attack of pests and diseases. We have been able to grow from 52 million tonnes of foodgrains in 1951-52 to almost about 300 billion tonnes in 2021-22. Apart from this, there are many other things, which are contributing to increased production. Pesticides have played a vital role in enhancing the agriculture production in India. Sir, so far as the size is concerned, we are about 50,000 crore in terms of Pesticides industry. I would like to inform the hon. Committee that worldwide the generic Pesticides are in demand which is about 75 per cent. So, we can use that potential which is existing and we can grow ourselves. We also need to see the last bullet point that we are consuming very, very small quantities of Pesticides in our country. Our annual consumption is indicated here which shows that it is 0.5 kg per hectare whereas China is having almost 17 kg per hectare even though India is the second largest producer of agriculture-product.”*

6. The Committee have observed that administration of Insecticides Act, 1968 is kept outside the purview of the DCPC. When asked how has it affected the Department, it has been replied that the Department takes up the matters raised by agrochemical industry with DA&FW from time to time for resolution of the same.

7. As regards the classification of Pesticides, the Committee have been informed as under:-

<b>Category</b>	<b>Market Share</b>	<b>Use</b>
<b>Herbicides</b>	44%	Kills/controls the growth of weeds in the cultivation area
<b>Fungicides</b>	27%	Controls the spread of fungal diseases in plants
<b>Insecticides</b>	22%	Protects plants from insects and pests
<b>Others(Nematicides, rodenticides, fumigants Bio-Pesticides, Plant growth regulators, etc.)</b>	7%	For control parasitic worms, rodents etc.

8. The Committee have further been informed that the whole world is planning to phase out hazardous Insecticides and Pesticides as well as develop new molecules which are least toxic, minimizing economical injury level and introducing organic and neem-based Pesticides.

9. Asked to state the manner in which the Department has planned to phase out hazardous Insecticides and Pesticides, develop least toxic molecules and minimize economical injury level, the Department has informed as under:-

- HIL (India) Ltd., a CPSE under D/o Chemicals and Petrochemicals with UNIDO, is taking up a project titled "Promoting eco-friendly crop protection solutions for persistent organic pollutant and highly hazardous pesticide reduction in Asia" under the Financing Agrochemical Reduction and Management (FARM) programme of the Global Environment Facility (GEF). The main objective of this project is to minimize the use of highly hazardous Pesticides (HHPs) and persistent organic pollutants (POPs) in agricultural use.
- The main aim of the FARM Programme is to catalyse investment in agriculture, eliminate the use of most harmful Pesticides, influence sustainable agriculture programmes, catalyse the expansion of compliance with global agricultural sustainability standards, accelerate the adoption of low chemical alternatives, and decrease the use of agrochemicals and agro plastics.
- The Pesticides are regulated by D/o Agriculture & Farmers Welfare under Central Insecticide Act, 1968 and rules framed there under. D/o Chemicals and Petrochemicals plays the role of promoter for the agrochemicals. Ministry/DA & FW, keeps reviewing, from time to time, the continued use or otherwise of those Pesticides which are banned/severely restricted in other countries due to their toxic concerns or have been reported to pose harm to human health or environment in our country or other countries. These reviews are undertaken by constituting special committees or through the Registration Committee (RC). Based on the recommendations of such expert committees and after due consultation with RC, the Ministry/DA & FW has so far banned or phased out 46 Pesticides and 4 pesticide formulations for import,

manufacture or use in the country. In addition, 8 Pesticide registrations have been withdrawn and 9 Pesticides have been placed under restricted use.

10. Asked to enumerate the hazardous effects of the conventional Insecticides and Pesticides for agricultural produce, fields, farmers and the environment, the Department in its reply has informed as under:-

(i) Conventional Insecticides and Pesticides are synthetic chemical Pesticides. They leave a certain amount of residue in the soil after application. Therefore, its application dosage is fixed by keeping negligible amount of residue in the soil after application.

(ii) Indiscriminate and excess use of conventional Pesticides can contaminate soil, water, turf, and other vegetation. In addition to killing insects or weeds, Pesticides can be toxic to a host of other organisms including birds, fish, beneficial insects, and non-target plants.

(iii) The Registration Committee (RC) constituted under section (5) of the Insecticides Act, 1968 registers the Pesticides for use in the country after evaluation of their safety and efficacy. RC, while registering the Pesticides, provides the details of doses, crops, precautionary measures, antidotes etc on Label and Leaflets. The registered Pesticides, if used as per Label and Leaflets, do not pose any harm to human beings, animals, and living organisms other than pest. However, the adverse impact of Pesticides on farmers' health or environment may arise if the Pesticides are not used with adequate safety precautions as given in Label and Leaflet approved under the Insecticides Act, 1968 and Rules, 1971.

11. The Committee enquired about the 'organic' and 'neem based' Pesticides and in what respects these Pesticides are better than the conventional Pesticides. In reply, the Department stated as under:-

- **Organic Pesticides** are the Pesticides derived from things in nature that can be used to control pests. This includes substances derived from plants, minerals, and micro-organisms.
- **Neem based Pesticides** are the pest control agents manufactured from Neem extracts. They are used in agriculture for pests, disease management and to supply nutrients to plants. Neem is safe for farmers & can be used during the entire crop cycle, environmentally safe, and compatible with the different Integrated Pest Management strategies. Neem is also safe to non-target organism and beneficial to insects such as honey bee, silk worm, etc.
- Both organic and neem based Pesticides do not leave any synthetic residue in the crop produce and soil, whereas synthetic chemical Pesticides leave a certain amount of pesticide residue after application.
- Under Insecticides Act, 1968, there is no usage of the term "Organic Pesticides". However, the term "Bio-Pesticides" may be used to refer to products containing biocontrol agents, natural entities or chemicals produced from natural materials (such as animals, plants, bacteria, or specific minerals). Bio-Pesticides may include natural plant-derived products, which include alkaloids, terpenoids, phenolics and other secondary chemicals.

- 'Neem based' Pesticides-means any pesticide or formulation containing neem based ingredients or active ingredients derived from the neem tree (Azadirachtaindica). Azadirachtin is a tetranortri-terpenoid (limonoid) found in the seeds of the neem tree. This compound has been shown to be an anti-feedant and disrupt insect growth by blocking the release of the morphogenic peptide hormone.
- Further, Bio-Pesticides and neem based Pesticides are better than conventional chemical Pesticides as Bio-Pesticides are usually inherently less toxic than conventional Pesticides and they generally affect only the target pest and closely related organisms, in contrast to broad spectrum, conventional Pesticides that may affect organisms as different as birds, insects and mammals.

12. The Committee wanted to know the status with regard to the production of 'organic' & 'neem based' Pesticides in the country. In reply, it has been informed that neem based Pesticides are currently manufactured by a few organizations in the country. HIL, a CPSE under the Department of Chemicals & Petrochemicals, is in the process of setting up of neem based Pesticides with the support of UNIDO. These are initially targeting mosquito control with the purpose of vector born disease management, including malaria. The production of bio-Pesticides and neem based Pesticides has already started in the country. The Government of India has taken various steps to promote the use of bio-Pesticides. Simplified guidelines have been formulated by Registration Committee (RC) for the registration of bio-Pesticides. For bio-Pesticides, provisional registrations are being granted under Section 9(3B) of the Insecticides Act, 1968 along-with the permission for commercialization during the provisional registration period of two years based on the confirmation of molecular identity of the strain from ICAR-National Bureau of Agriculturally Important Microorganisms (ICAR-NBAIM) and quality verification of the product from Central Insecticide Laboratory (CIL).

13. Asked to state whether the DCPC has ever reviewed the demand of 'organic' and 'neem based' Pesticides in the country vis-a-vis their production, the Department has stated that neem based Pesticides support their contribution to organic agricultural production systems that are more sustainable and do not leave chemical residues. This method also helps to maintain soil productivity, ensuring longer production times. Organic agriculture can be a viable alternative production method for farmers, but there are challenges to be overcome. The growing concerns about conventional agriculture and the demand for products that do not generate waste is the reason for increased adoption of the use of bio-Pesticides by farmers, which contributes to the growth of organic agriculture. The bio-Pesticides represent only 4.2% of the overall pesticide market in the country now and they are forecasted to have an annual growth rate of around 10% in the coming years due to the promotion of use of bio and botanical based crop protection methods by the Government.

14. On being asked about the details of companies producing or planning to produce the 'organic' and 'neem based' Pesticides in the country and the number of companies in the private Sector and public Sector, the Department in its written reply submitted that neem based Pesticides are currently being manufactured by a few organizations in the country and HIL (India) Limited, with the support of UNIDO.

However, specific information with respect to companies in private sector planning to produce bio-Pesticides is not available.

15. On being asked as to how the DCPC propose to promote development of Pesticides, the Department has stated that DCPC organizes international conference and seminars to promote investments in chemicals sector including agrochemicals sector. The Department is also exploring the possibilities of establishing segment specific (e.g. Agrochemicals) chemical parks across the Country which will be based on plug-n-play approach.

### **Declining use of DDT**

16. Asked about the harmful effects of DDT and brief particulars of the UNIDO project to phase out DDT and various proposals covered under the project, the Department has replied that the global use of DDT for disease vector control continued to decline, new insecticide products with long residual activity periods for indoor residual spraying and next generation bed nets had become available to protect communities against malaria infection. HIL (India) Ltd. is the sole manufacturer of DDT in India.

- DDT is slightly to moderately acutely toxic to mammals, including human being. DDT persists in the environment, accumulates in fatty tissues, and is known to cause adverse health effects on human beings and wildlife. In addition, resistance occurs in some insects (like the house fly) who develop the ability to quickly metabolize the DDT. DDT is highly persistent in soil with half-life period upto 15 years.
- DDT is regulated as a Persistent Organic Pollutant (POP), which is regulated under the Stockholm Convention which has been ratified by India. The Stockholm Convention mandates the elimination of DDT. India currently remains the only country permitted to manufacture DDT for the sole purpose to control vector borne diseases.
- To phase out the DDT as per the Stockholm Convention on POPs, UNIDO is supporting HIL under the project “Development and Promotion of non-POP alternative to DDT” in setting up of commercial manufacturing facilities for Long Lasting Insecticidal Nets (LLIN), Bti based bio-larvicides and Neem based botanical insecticide, larvicide, repellent, deterrent and Insect Growth regulators (IGR).
- The Harmful effects of DDT due to its chemical toxicity and persistent nature it causes endocrine disruption, carcinogenicity, reproductive toxicity etc. in humans and causes thinning of birds’ eggshells and hence death of embryo, hormone problems, liver lesion and liver tumour(in animals).

17. When asked how the Department/ HIL strategise to complete the UNIDO project within the fixed timelines, it has been informed that HIL is the commercial manufacturing partner for the UNIDO project on “Development and Promotion of non-POPs alternatives to DDT”. HIL has commercialized LLIN manufacturing and is committed to complete both the neem project and Bti project before December 2024.

18. Asked about the present status with regard to the Government commitment to phase out DDT from the country by the year 2024 and whether the Department would be able to fulfil its commitment, the Department has informed as under:-

- HIL a CPSE under DCPC, is the sole manufacturer of DDT. DCPC is committed to phase out the DDT as per the timelines. However, Ministry of Health & Family Welfare is the end user of DDT, and HIL manufactures and supplies DDT to Ministry of Health only as per their requirement.
- The Government of India signed the Stockholm Convention (SC) on persistent organic pollutants (POPs) in May 2002 and ratified it on 13<sup>th</sup> January 2006. UN Environment conceptualized the project “Development and promotion of non-POPs alternatives to DDT” and identified CPCB as the Executive agency (EA) for execution of the project. CPCB, the executing agency (EA) has awarded the sub-contract to CSIR-NEERI. CSIR-NEERI has developed 4 training modules [1. DDT and Vector Borne Diseases, 2. Vector Morphology and Bionomics, 3. Alternatives to DDT in vector control management, 4. Integrated Vector and Pest Management (IVPM)] on Integrated Vector Pest Management (IVPM) under the project. These modules were approved by National Centre for Vector Borne Disease Control (formerly NVBDCP) on January 22,2021. CSIR-NEERI is promoting the non-POPs alternatives to DDT being developed by UNIDO/HIL through trainings, workshops, awareness programs, IEC activities to State public health departments.
- The total budget of the project was USD 9,12,425 and time limit of the project was up to December 31, 2022.
- The project has been extended to December 2024 to facilities and regulatory processes for the newly indigenously developed alternatives to DDT such as LLINs, Neem based Pesticides, Bt. based Pesticides etc. in order to completely phase out DDT.
- Considering the rationale of using DDT for vector disease control, India had registered with the Basel, Rotterdam and Stockholm conventions (BRS) Secretariat for allowing production and use of DDT for ‘acceptable purpose’. The registration allowed India to manufacture and use DDT domestically and export it to other Parties for disease vector control, till 2024. The NVBCDC, MoHFW coordinates the implementation of the country-wide vector control programme and regulate the usage of DDT for the purpose. As per the NVBDCP, the reliance on DDT for vector control has been decreasing and the same is visible from that fact that the DDT production has decreased from 8481 MT in 2005-06 to 1110 MT in 2020-21. For the year 2022-23, 675 MT of DDT (including 118.7 MT of additional buffer) is approved for usage.

19. As regards the status of the UNIDO projects, viz. Bio-pesticide (BTI) and Neem based formulations, it has been informed that the DPR for BTI project is being prepared and shall be completed within Dec, 2023. The project is expected to be commercialized in 2024 itself.

### **Long Lasting Insecticidal Nets (LLINs) project.**

20. When asked to elaborate on the specific role of M/o Environment, Forest and Climate Change (MoEF&CC), M/o Chemicals and Fertilizers (MoCF) and M/o Health & Family Welfare (MoH&FW) in the implementation of the LLIN project, the Department has informed the Committee as under:-

- MoEFCC is the nodal agency for the Stockholm Convention and thereunder the phase out of DDT and implementation of safe alternatives to DDT, including LLIN.

- MoCF is the implementation agency for the DDT alternative project, where the LLIN manufacturing project is implemented at HIL, CPSE under MoCF.
- MoHFW is the end user of LLIN for the Vector Borne Disease Control program.
- The Government of India brought together relevant Government institutions on a common platform to discuss development and promotion of DDT alternatives. These include MoEFCC, MoHFW and State Governments in charge of Integrated Vector Pest Management (IVPM). Led by MoEFCC, the National Environment Engineering Research Institute (NEERI) developed four training modules to adopt alternatives to replace DDT in the IVPM programme. Also, NEERI consulted with State Governments and the National Vector-Borne Disease Control Programme under the MoHFW. Development of low-cost local technology using local resources identified by local research institutions has enabled the country to produce safe and environmentally friendly alternatives to combat mosquitoes. To phase out DDT production, IVPM strategy encourages use of LLINs and bio-Pesticides in high-risk areas. To meet the LLINs requirement M/s HIL has established infrastructure and facility to scale up the commercial production.

21. When asked about the financial support being provided by UNIDO for plant and machinery for production of LLINs, it has been informed that UNIDO is supporting HIL for setting up of manufacturing facility for alternative to DDT project to the tune of USD 6.2 million. This covers manufacturing facility for LLIN, BTI bio-Pesticides and neem based formulations.

22. On being asked to furnish figures of the demand and supply of LLINs in the country, it has been informed that expected technical demand of LLINs has been estimated at 60 million nets. Under the project, HIL would be having a capacity of 10 million nets per annum. Since the life of LLIN is 3 years, the demand would always be there to replenish end of life.

23. When asked about percentage of LLINs being imported to meet its requirement in the country and steps being taken/proposed to reduce the import dependency gradually, it has been informed that import of LLIN has not taken place since last 3 years. Indigenous technology has been developed for the commercialization of the LLIN at HIL under the project. This step will help the country in reducing import dependency.

### **Issues/concerns of agrochemical industry**

24. The Committee have been informed that an Advisory Forum for Chemicals & Petrochemical sector was constituted on 10.07.2019 to identify the impediments affecting the growth of the chemical and petrochemical sector in the country and to facilitate the growth of the industry through policy interventions. The first meeting of the Advisory Forum was held on 27.08.2019, the second meeting on 25.06.2020 and the third meeting on 20.09.2022. The role of Advisory Forum is stated to be as under:-

- (i) To provide a platform to the industry associations for raising their grievances and problems which will have to be resolved through the 'Development

Committee' in coordination with other Ministries and present them before the 'Advisory Forum' with policy measure recommendations.

(ii) To boost 'Make in India' initiative by promotion of investments in Chemicals & Petrochemicals sector to meet growing domestic demand and promote exports.

25. When asked to brief on the issues of agrochemical industry that surfaced during the last three years and the action taken on them, the details have been given as under :-

S.No	Discussion Points	Decision	Action Points
1	<p>Issues regarding data requirements 'Export Registration' for Pesticides, e.g.,</p> <ul style="list-style-type: none"> <li>Exhaustive information on Toxicology/Chemistry is sought by CIB &amp; RC which leads to unnecessary wastage of time for scrutiny/irrelevant deficiencies/administrative processes etc.</li> <li>Requirement of seeking copy of registration from importing country should be done away with as it creates supply chain hurdles.</li> <li>Application in Form 1 should suffice.</li> <li>Review of Exports Registration Certificates issued by CIB&amp;RC.</li> <li>'Star Export House Applications' and 'Fast Track Applications' need to process on top priority with minimum information (Only Form-I) and certificate of registration should be issued in 5 working days to manufacture.</li> <li>All other applications for export shall be processed and Certificate of registration shall be issued within 15 working days (Post facto approval of RC).</li> </ul>	<p>It was observed that there are 7 categories in the existing Guidelines for Export Applications, such as A-I, A-II, A-III, B-I, B-II, B-III, B-IV.</p> <p>As per existing guidelines, no data is required for chemistry, Bio efficacy and Packaging for A-I, A-II, A-III, B-I, B-II, B-III &amp; B-IV categories. Only basic published information is required under B-I, B-II, B-III and B-IV categories in toxicology.</p> <p>No data is required for registered botanical and bio-Pesticides.</p> <p>These categories do not need any extra data other than information required in Form-I.</p> <p>For unregistered bio-Pesticides strain, basic information such as strain no. &amp; Accession No. is needed. No data on chemistry is required.</p> <p>No data in any category is required under toxicology if published information is available. If such information is not available then single exposure six battery pack studies are required under toxicity in B-II, B-III, B-IV Categories only.</p> <p>Only under the "Import for Export category" copy of registration status for the said pesticide in the importing country is required to ensure the export of such unregistered, untested product for safety purposes.</p> <p>Further, only one application is pending with CIB&amp;RC as on 5.11.2022. They asked the industry association to file the application on the portal.</p>	<p>The industry representative agreed that the existing guidelines of export are very simple and supportive to obtain the registration in minimum time to boost the export of Pesticides. It was also decided that an Online integrated Pesticides management system will be developed as an Artificial Intelligence based system by the DA &amp; FW, which shall address future concerns, if any.</p>



2	Issues regarding imports registration for Technical Grade Pesticides.	As per the provisions of Insecticides Act, there is no clause that restricts the imports registration for Technical Grade Pesticides of any applicant.	Manufacturing units importing the Technical Grade Pesticides which are being further used for trading. This is a policy issue and it is proposed that strict review/inspection of manufacturing facilities to be done regularly and sometime surprisingly (Without prior information).
3	Label and Leaflet notification	Reference to the meeting held on 26.07.2022 with DCPC and DA&FW; DA&FW and CIB&RC discussed the matter with Industry Associations in many rounds of meetings, based on which a Gazette Notification has been issued on 07.11.2022. The same is open for 30 days for seeking comments of the stakeholders.	Industry will be submitting the comments on draft notification.
4	Quantity exempted from imports permission as 2 kgs. only for research purpose for technical grade Pesticides	<p>CIB&amp;RC submitted that there are two ways for importing the Pesticides.</p> <ol style="list-style-type: none"> <li>1. Import of pesticide formulation to the tune up to 10 Kgs in a calendar year and Technical Grade Pesticide to the tune of 02 Kgs in a calendar year and 500g of PGRs by the GLP and NABL accredited laboratories.</li> <li>2. Such imports can also be applied through the ongoing Research Test and Trial (RTT) permits wherein there is no capping on the quantity of Pesticides to be imported.</li> </ol> <p>However, it has been decided that an internal committee at Sectt. Of CIB&amp;RC level will review the imports of Technical grade Pesticides for research purposes. The matter will also be discussed</p>	It was decided that the recommendations of the committee on the issue are still awaited. A final decision shall be taken once recommendations of the committee is received.

		with the Technical representative from DCPC.	
5	Streamline market sampling and their analysis.	Dte PPQ&S is in process for developing seamless coding system to have an unbiased and fair system.	DA&FW shall make a National Pesticide/Pest Surveillance System which will have the Rule Based Advisory. It will have the Information regarding the chain of supply from manufacturers to retailers (with the quantity of Pesticide).
6	Traceability and Digitization of database at CIB&RC	New crop portal has been developed in which the Industry can update their data with KYC.	A Faceless and Traceless system is being devised.

### **Indian Chemicals Industry**

26. When asked to give an overview of the Chemical Industry in the country and how this industry is contributing to the GDP as well as gross value addition manufacturing, it has been stated that Indian Chemical industry stands 6th globally in sales values. The present market size is around 212 Bn USD and expected to reach 300 Bn USD by 2025. The Chemicals sector is segmented as Agrochemicals, Dyes & Pigments, Specialty chemicals, Bulk Chemicals etc. In Agrochemicals sector, India is the 4th largest producer and exporter globally. Similarly, in dyes-stuffs, India is the 2nd largest producer and exporter globally. This sector contributes 9.40% of Manufacturing GVA and 1.69% of National GVA. The sector employees around 4 million people directly and indirectly.

27. During oral evidence, a representative elaborated on the issues as under:-

*".....In the year 2022, it was US \$ 212 billion and the sector is expected to grow at 9.3 per cent. The people's aspirations are growing and the purchase power has increased. As a result, the demand in the chemical sector is increasing. If we are growing at 9.3 per cent by 2047, it will be around 2 trillion. At that time, the Indian market is expected to be 40 trillion. .... The chemical sector is about to touch 2 trillion if it goes at 9.3 per cent. If we consider a conservative growth of 6 per cent, then also our chemical sector will be about one trillion which will be 2-3 per cent of the total market size".*

28. On being asked to state whether India in the Chemical Sector is a net importer but in the agrochemicals India is a net exporter, it was submitted that Indian Chemical industry is the net importer and trade deficit stands at Rs.1.75 lakh crores in F.Y.-2020-21. The main reason for net imports is non-availability of feedstocks and mining agents. In agrochemicals sector, India is 4th largest producer and exporter globally.

29. The Committee have been informed that in 2003-04, the net import was almost NIL. By 2013-14, the net import rose to 8 billion and by 2022, it rose to 22 billions which amounts to Rs. 1,75,000 crore. The export had increased by 2.1 times whereas the import increased by 2.26 times only which indicates that the Department is not able to catch up with the import and there is an emergent need for increasing the domestic capacity or else, the net import will keep on increasing.

30. When asked about the steps, if any, taken or proposed to be taken to reduce dependency on imports in the Chemical sector, it has been stated that it is working on introducing the PLI Scheme in the chemicals sector for those chemicals which are majorly imported from single source and are having multiple uses.

### **Institute of Pesticide Formulation Technology (IPFT)**

31. The Committee desired to know the details with regard to the constitution of IPFT, its composition and powers. In reply, it has been stated that the Institute of Pesticide Formulation Technology (IPFT) was incorporated under the Societies Registration Act-1860 on 31.05.1991 under the D/oChemicals & Petrochemicals, Ministry of Chemicals & Fertilizers with the following objectives:

- Development and production of state-of-the-art user and environment friendly new generation pesticide formulation technology.
- Promotion of efficient application technologies suiting the existing requirements of newer formulations.
- Information dissemination of safe manufacturing practices, quality assurances, raw material specification and sources.
- Analytical and consultancy services.
- Fostering improvement in the qualification and usefulness of pesticide scientists working in the agrochemical area.
- Continuing education through specialized training for pesticide personnel.

32. Further, IPFT is the only Institute of its kind devoted to the development of state-of-the-art user and environment friendly new generation pesticide formulation technology. The Institute has established a healthy rapport with the Indian agrochemical industries and has been able to successfully transfer technologies for safer, efficient and environment friendly formulations. IPFT is also helping the industries in data generation as per CIB/RC guidelines for bioefficacy, phytotoxicity and pesticide residue analysis for both agriculture and household formulations. IPFT undertakes both in-house and externally funded R & D projects.

33. It has been added that IPFT has a well-defined Organizational Structure comprising of a Governing Body which is the supreme decision taking body. Governing Body meets annually and takes critical policy decisions related to the Projects, Budget, Manpower and General Management of the Lab. For day-to-day financial and administrative control, the Institute has a Finance & Administrative Committee (F&AC). The Committee meets as and when required to clear the issues related to Finance & Administration of the Institute.

34. When asked to state the number of field trials conducted by IPFT during the last three years for the development of safer, efficient, cost effective and environment friendly pesticide formulations, it has been replied that the field trials for

bio-efficacy and phytotoxicity evaluation and safety to natural enemies, sponsored by pesticide industries, were conducted by Bio Science Division of IPFT on different agricultural crops. The trials conducted during the year 2020-21, 2021-22 and 2022-23 were 14, 15 and 18, respectively, the details of which are given as under :-

<b>Crop</b>	<b>No. of trials conducted</b>
<b>2020-21</b>	
Cotton	3
Chilli	3
Cabbage	1
Okra	2
Tomato	2
Cucumber	1
Potato	1
Groundnut	1
<b>Total</b>	<b>14</b>
<b>2021-22</b>	
Potato	2
Cucumber	1
Paddy	3
Cabbage	1
Chilli	4
Cotton	2
Tomato	1
Okra	1
<b>Total</b>	<b>15</b>
<b>2022-23</b>	
Maize	3
Tomato	2
Cotton	3
Cauliflower	1
Chilli	6
Brinjal	1
Wheat	2
<b>Total</b>	<b>18</b>

Out of the trials conducted, three trials were for plant growth promoters in chilli crop and four trials for bio stimulants on maize and tomato crops during 2022-23. In addition to it, three In-house field trials were conducted for newer formulations/products developed by IPFT on wheat, chilli and okra crops.

35. When asked about the States/UTs where field trials have so far been conducted along with the outcome thereof, the States/UTs where such field trials are proposed to be conducted and also the criteria for conducting field trials by IPFT, it has been informed that the field trials were conducted in Haryana State (IPFT) only. So far, there is no proposal for conducting field trials in other States/UTs. The IPFT is approved for data generation on Bio-efficacy and phytotoxicity of Pesticides on

agricultural crops and also against house hold insect pests by Central Insecticides Board and Registration Committee (CIBRC), Faridabad. So, IPFT has been conducting field trials sponsored by pesticide industries and also in-house trials for newer/ advanced formulations of Pesticides developed by IPFT.

36. As regards the sanctioned strength vis-a-vis actual strength of various categories of staff working in IPFT, the reasons for vacancies, if any, and from when the respective posts are lying vacant, the Committee has been apprised asunder:-

Category of Post	Group			Total Sanctioned Strength	Working Strength	No. of post vacant	No. of Post for revival
	A	B	C				
Scientific	10	11	08	29	11	04	07
Technical	01	-	01	02	-	-	02
Admin/Allied	05*	03	02	10	08	06	03
<b>Total</b>	<b>16</b>	<b>14</b>	<b>11</b>	<b>41</b>	<b>19</b>	<b>10*</b>	<b>12</b>

\* Including 01 Supernumerary Post for Establishment Officer. 07 vacant posts have been advertised & 02 posts have caused vacant due to retirement of incumbents of Group C in December 2022 and 01 post of Specialist (Bioscience) is under litigation.

37. When asked to give brief particulars of about 80 technologies developed and transferred by IPFT so far to various agrochemicals industries, future plans to develop and transfer of technologies and target, if any, fixed, the information furnished has been given at **Annexure-I**. Further, the year-wise target is fixed under M.O.U. with DCPC to develop new technologies.

38. When asked how much revenue is being accrued to IPFT by transferring technologies in the market as commercial pesticide products, the information with regard to revenue generated by transfer of technologies during last three years is as under:-

**F.Y. 2020-21** : Rs. 200000.00+ USD 120072.00  
**F.Y. 2021-22** :Rs. 2839600.00+ USD 60036.00  
**F.Y. 2022-23** :Rs. 4704400.00

39. On being asked about the feedback of farmers/users of commercial Pesticides and products of IPFT, the Department in their written reply has stated that the technologies user & environment friendly formulations have been transferred to industries for commercialization. Some technologies have been demonstrated to farmers during different workshops for farmers. As per discussion with technology recipients, feedback is good.

40. The Committee asked about the R&D Projects being undertaken or proposed to be undertaken by IPFT, the budget allocation for R&D projects during the last three years vis-à-vis the amount proposed by IPFT and whether the budgetary funds allocated to IPFT for R&D Projects was found to be adequate. In response, the details of the R&D projects funded by different funding agencies and executed during last three years is given as under :-

- a. Development and Promotion of Non-POPs alternatives to DDT (Sponsored by UNIDO)
- b. Development and Production of Hand Sanitizers using less Hazardous Chemicals and botanical antimicrobial based formulations (Sponsored by UNIDO)
- c. Monitoring of Pesticide Residues at National Level (Sponsored by Department of Agriculture & Cooperation, Ministry of Agriculture, Government of India)
- d. Monitoring of Pesticide Residues at various districts of Rajasthan (Sponsored by Govt. of Rajasthan)
- e. Monitoring of Pesticide Residues in various fruits, vegetables and environmental matrices." (Sponsored by Directorate of Horticulture, Govt. of Haryana)

The budgetary funds allocated to IPFT for above mentioned R&D Projects was stated to be adequate.

41. On being asked how many workshops for judicious use of Pesticides through Krishi Vigyan Kendras (KVKs) have been organised during the last three years and the average attendance of farmers in such workshops, the Department has informed that no workshop has been organised through KVK.

42. On being asked about the criteria for organising Krishi Melas, Conferences etc. and whether due care is taken to ensure that the Krishi Melas, Conferences etc. are held uniformly in all States/UTs, the Department has submitted that IPFT is making efforts to organise the workshops in different States. So far the Workshops have been organised in the states of Rajasthan, Haryana, Maharashtra, U.P, Karnataka, Assam, Orissa.

43. Asked to state the steps taken by IPFT to ensure development of safer Pesticides Formulations apart from development and transferring of technologies, it has been informed asunder:-

- IPFT has been providing training on various aspects of formulations including safer formulations, Quality Assurance, Instrumental Analysis to technical personnel from pesticide industries, Scientists, Students, different bio-botanical formulations for controlling insects in Seed spice crops in collaboration with ICAR-National Institute of Seed Spices, Ajmer.
- The Orobanche weed causes huge losses in the yield of rapeseed and mustard crops. This is a serious problem being faced by farmers in northern & western part of India. In collaboration with ICAR- directorate of rapeseed mustard research, Bharatpur, Rajasthan, IPFT Developed two formulations for management of Orobanche weed. The bio-efficacy studies results indicate good control of target weed. IPFT has well equipped NABL Accredited and GLP certified analytical laboratories. IPFT has been assisting the industries in sample analysis and quality

assurance. Various projects on Residue analysis, bio-efficacy data generation have been executed by IPFT.

- During last three years, 28 research papers on formulations, Analytical chemistry and persistence studies have been published in reputed national & international journals.

44. On being asked about details of the efforts made by IPFT to maximize the use of bio-Pesticides for controlling different agricultural insects and development of different bio-botanical pesticide formulations, it has been replied that **IPFT** is making continuous efforts for promoting bio-botanical pesticide. Various technologies of these formulations have been developed, trainings are being given to farmers for promoting the use of botanical based crop protection products. The technologies of eight bio-botanical based products is being commercialized for mosquito control in public health sector. IPFT has successfully developed different bio-botanical formulation for crop protection. The bio-botanical products are slowly gaining popularity. Continuous efforts are required to develop new bio-botanical Pesticides as safer alternatives to commercial chemical Pesticides.

45. The Committee desired to know the time by when the four Advanced Research Centres (ARCs) of IPFT in the states of Assam, Karnataka, UP and Gujarat are likely to be set up. In reply, it has been informed that after obtaining in-principal approval from the respective states, a concept note for opening of 04 Advanced Research Centre (ARC) of IPFT in the state of ASSAM, Karnataka, UP and Gujarat has been submitted to DCPC for the approval of Govt. of India. After approval of Govt. of India, action for opening of 04 new ARC will be taken immediately.

46. When the Committee desired to know the role of IPFT for Chemicals promotion and development, a representative of the Department stated as under:-

*“We have a specific scheme with respect to chemicals promotion and development. We provide assistance to various organisations with respect to seminars, conferences, training programmes, etc. We have a specific institute as I have mentioned - IPFT. This institute has done very good work with respect to coming out with the new age formulations. They have been able to come out with formulations which are very user friendly, and they were efficient. Here are some of these formulations which they have developed. They have developed about 82 technologies. They have developed water disposable granules, controlled-release formulations, concentrated emulsions, micro emulsions, and they have provided these technologies to the industry also. The industry is using them. This is a very good work which has happened in the country. They have the best of accreditations with them. NABL and GLP compliance they have done recently”.*

### **Non PoPs alternative to DDT**

47. When asked to explain the term ‘Non-POPs’ alternative to DDT, the Department replied as under:-

- Persistent organic pollutants (POP) are organic compounds that are resistant to degradation through chemical, biological, and photolytic processes. They are toxic chemicals that adversely affect human

health and the environment. DDT is a POP, which is used for the control of vector borne disease.

- Non-POPs alternatives to DDT refer to alternatives to DDT that do not contain any of recognized POPs under the Stockholm Convention. The Non-POPs alternative to DDT project has been undertaken to eliminate the dependency on DDT for mosquitoes control through developing and promoting locally appropriate, cost effective and sustainable alternatives which are not persistent in nature and biodegrade in shorter time. UNIDO project non-POP alternatives to DDT focuses on LLIN, Bti based bio-larvicides, neem based repellents and larvicides.
- DDT was one of the chemicals listed under the Stockholm Convention on persistent organic pollutants (POPs) under Annex B (Restriction) in 2001. Chemicals listed under Annex B are allowed for production and use for specific purposes only i.e. disease vector control in case of DDT.
- Subsequently, WHO (2001) published a document titled "Action plan for the reduction of reliance on DDT in disease vector control", which defines alternatives to DDT as:-
  - i. Alternative products for chemical and biological control.
  - ii. Alternative methods of vector control such as environmental management and personal protection
  - iii. Alternative strategies that are based on scientifically sound criteria, cost-effectiveness analysis, and a delivery system compatible with current trends in health sector reform, including decentralization of health services, inter- sectoral Action at the local level and subsidiarity in decision-making.
  - iv. The term Non-POPs' alternative means the pesticide/ insecticide that does not belonging to persistent organic pollutant group as classified under the Stockholm convention and can be used in place of DDT which is one of the persistent organic pollutant.
  - v. POPs stand for "**Persistent Organic Pollutants**" and refer to a group of synthetic chemicals that are persistent in the environment and can last for long in the environment before degrading. These are Aldrin, chlordane, DDT, dieldrin, endrin, heptachlor, hexachlorobenzene, mirex, polychlorinated biphenyls, polychlorinated dibenzo-p-dioxins, polychlorinated dibenzo-difurans, and toxaphen comprised the "**Dirty Dozen**" of persistent and toxic pollutants.
  - vi. In contrast to POPs, Non-POPs include Pesticides that are non-persistent, readily biodegradable, and, therefore, environmentally safer than POPs. The Non-POPs are derived from plants and other natural sources and the active ingredient is from biological origin.

48. Asked as to how far it is better than DDT for the farmers, for the agricultural produce and environment, the Department informed that DDT is intended for use only in controlling malaria and other vector borne disease. It is not used for agricultural purpose. DDT is not used as pesticide in agriculture but used as a vector



control. Non-POPs alternatives are far better than DDT for the farmers as per the report, for the agricultural produce and environment by the following factors:-

- i. *Non persistence*
- ii. *Biodegradable*
- iii. *Safe to human being*
- iv. *Safe to non-target fauna including beneficial insects*
- v. *No residue*
- vi. *Cost effective: affordable*

- *Non-POPs' alternative of DDT may be beneficial to the farmers in terms of ecological and environmental aspect as they will be easily biodegradable and will not be persisting in the environment and will be safer for non-targets.*
- *NoN-POPs are better alternatives for mosquito control and agricultural insects control because these are cost effective, user-friendly, and environmentally benign. The specific mode of action, Non-Persistent, environment sustainable without residual effect and are not associated with the harmful toxic effects and, therefore, safe for the environment.*

49. When asked whether NoN-POPs will totally replace the harmful effects of DDT while having same effectiveness as DDT, the Department submitted as under:-

- Non-POPs are safe non persistent alternatives to DDT to control the mosquito without any serious impact to the environment.
- They are not persistent and also safe to non target organisms, whereas, highly efficient in controlling mosquito.
- As per report of IPFT, Non POPs will totally replace the harmful effects of DDT while having same effectiveness as DDT due to non-persistence, biodegradability, safety to human beings as well as fauna, absence of residue, local appropriateness and cost-effectiveness. These alternatives include:

Bt based Pesticides- suspension concentrate; wettable powder and spreading oil.

Neem based bioPesticides: Larvicide: (i) spreading neem oil; (ii) floating tablets from neem kernel powder/oil;

Adulticide: (i) mosquito coil from neem kernel; (ii) repellent cream from neem oil; (iii) Suspension concentrate.

Long Lasting Insecticidal Nets (LLINs)

Through the Global Environment Facility (GEF) investment, India has taken the first step to eliminate dependency on the insecticide DDT by promoting locally appropriate, cost-effective, and sustainable alternatives, including the Long-Lasting Insecticidal Net (LLIN) and Neem-based and bacteria-based bio-Pesticides. HIL (India) Limited (HIL), a public sector enterprise, is the only manufacturer of DDT in the country.

- NoN-POPs are proposed as alternatives to the synthetic Pesticides like which are effective as DDT. These are non-persistent, readily biodegradable, and

safer for the environment compared to POPs, which are capable of reducing the deleterious effects of POPs like DDT.

50. As regards, the present status of production/Commercialization of Non-POPs and steps taken by HIL India Limited for commercialization of Non-PoPs, it was informed that HIL has commercialized LLIN plant. HIL is also in the process of setting up of manufacturing facility for Neem based Pesticides as larvicides and repellents and also Bti based bio-larvicides as non-POP alternative to DDT for the control of mosquitoes. HIL is committed to commercialize these projects by mid-2024. The technology of Eight NoN-POPs alternative to DDT has been transferred to HIL Ltd., and HIL is in the process of commercialization of these technologies.

## **AGROCHEMICALS**

51. The Committee wanted to know about agrochemicals and how they are different from insecticides/pesticides and their added benefits. In response, the Department has informed that Agrochemicals are chemicals that are used to control pests, pathogens, and supply nutrients to the soil. Insecticides /Pesticides are broadly termed as Agrochemicals. Agrochemicals play a vital role in increasing agricultural productivity by protecting crops from insects, pests, fungi, weed etc. Agrochemicals is a broader/umbrella terminology used for all the chemicals especially as input in the Agriculture either at pre or post-harvest stage. It includes the insecticides/pesticides also under its ambit. Agrochemicals especially pesticides play an important role in sustaining agricultural production by protecting crops from pests. Availability of safe and efficacious pesticides and their judicious use by the farming community is critical to long-term sustainability of agricultural production and productivity. Agrochemicals (insecticides/Pesticides) are used in totality along with all other agricultural inputs.

52. In this regard, the representative of the Department added as follows:-

*“...thatglobally, we are the fourth largest producer of agrochemicals. This is important for us today. I will not go into the other things. Otherwise, it is a very important sector contributing in a big way to the GDP as well as to gross value addition manufacturing. We are the second largest manufacturer and exporter of dyes, etc. I will not go into that. But in terms of the agrochemicals in which we are dealing, the global market is about Rs.4,50,000 crore, and the Indian size of the market is about Rs.50,000 crore. So, even though in the chemical sector, overall, we are net importer but in agrochemicals, we are net exporters. That is the big advantage of agrochemicals which we are dealing today”.*

53. On being asked about the future potential of agrochemicals, the Department, during evidence have submitted as follows:-

*Sir, if we look at the share of the agro-chemicals, which we are discussing now, it is about 4 per cent. Out of this, let us say if we have to see what is the kind of growth potential which the agro-chemicals alone are having. At a conservative estimate of 1150 billion dollars, we will be touching almost 40 billion dollars in terms of agro-chemicals. In a situation of best-case scenario which is about 2000 billion dollars, we will be touching about 80 billion. So, this is a kind of potential which is there in agro-chemicals.*

54. As regards country-wise consumption of Agrochemicals the Committee were informed as follows:-

**Country-wise Consumption of Agrochemicals**

Country	Consumption (in Kilo-tonnes)	World Share (in %)
CHINA	1,763	43%
USA	407	10%
BRAZIL	377	9%
ARGENTINA	172	4%
CANADA	90	2%
FRANCE	85	2%
RUSSIA	76	2%
AUSTRALIA	63	2%
SPAIN	61	2%
ECUADOR	60	1%
TURKEY	60	1%
INDIA	58	1%
ITALY	54	1%
OTHERS	796	20%
<b>TOTAL</b>	<b>4,122</b>	<b>100%</b>

55. The Committee then pointed out that China consumes 1,763 Kilo tonnes of agrochemicals and whereas India consumes just 58 Kilo tonnes of agrochemicals and desired to be apprised of the reasons for such a huge difference in consumption of agrochemicals, the representative of the Department replied as under:-

*“Sir, the usage done by China and countries like Japan is manifold than India. They have intensive agriculture - greenhouse agriculture and polyhouse agriculture – where the pests are there because they take a number of crops in those protective farming activities. Due to the intensification of agriculture, the kind of use and the spring technology they have, they have a lead over us and that is why, they are using more. Their management of that is relatively better. That is why, they are using more. They have more of commercial farming and more of protective farming. So, they use more of it”.*

**HIL (India) Ltd.**

56. When asked to give details of three plants of HIL (India) Ltd. located at Cochin (Kerala), Rasayani (Maharashtra) and Bhatinda (Punjab) and producing agrochemicals and their production of agrochemicals during the last three years, the Committee were apprised as follows:-

- Bathinda Unit was established in the year 2002. Bathinda Units has a state-of-the-art multipurpose formulation facility for Liquid, Solid and Granular Formulation of capacity 1000 KL/MT.
- Rasayani Unit was put up in the year 1980 for the manufacture of Malathion Tech & its Formulation. Subsequently, DDT plant was put up in the year 1983.

Butachlor, Monocrotophos Tech and their Formulation plants were put up in the year 1987-88. Monocrotophos plant was converted to a multi-purpose plant for the manufacture of Monocrotophos and DDVP Technical. Future plans are in hand to manufacture Glyphosate Tech and Imidachlorprid Technical by retrofitting the existing plants.

- Udyogamandal unit was put up in the year 1957 for the manufacture of DDT Technical and Formulation. Subsequently, Endosulfan Technical and Dicofol Technical plants were put up in the year 1980 and 1995 respectively. Mancozeb Production Facility was put up in the year 2001.
- This unit has ISO 9001-2000, ISO 14001-2004 & OHSAS - 18001 certification.

Plant Wise Production for last three years is attached as **Annexure-II**

57. The Committee during their study visit to Kochi during May, 2023 heard inter-alia the Grievances of employees of Udyogamandal Unit of HIL. It was learnt that the Udyogamandal Unit of HIL (India) Limited had been closed down. The company has stopped payment of salaries to its employees for the last 6 months and had even cut the electricity and water supply at the complex. Offer of voluntary retirement by the management was not viable as many of the employees are very young. There are 64 employees and many of them are very young. Moreover, the option given to shift the employees to the Rasayani (Maharashtra) unit of the company is not feasible due to low salary and wages as the employees may not be able to sustain with added expenses for rented accommodation, besides Mumbai being a costly city, etc.

58. Responding to the grievances of the employees of the plant, a representative of the company stated that due to paucity of funds, the company was not able to give salary and other amenities to their employees. Even the retired employees are not given gratuity and pension. The Udyogamandal Unit of HIL (India) Limited had to be closed due to operational losses because of the increase in production cost at the plant as raw materials come from far off places. This made its products unviable.

59. During the deliberations, a representative of the Department of Chemicals and Petrochemicals (DCPC) submitted that the employees of all the units of HIL (India) Limited including those at its headquarters were not receiving their salary. A reason for the same was the closing down of Udyogamandal Unit of HIL due to its operational losses. HIL could not even raise any loan from the Government as the unit has been closed. To circumvent the situation, offer of VRS has been given to the employees while the younger staff may be absorbed at its Rasayani unit. It was, however, assured that serious efforts would be made to get the dues of HIL of Rs. 96 crore pending with the Ministry of Health and Family Welfare cleared, which will facilitate payment of salary and other dues to its employees.

60. The Committee then called the representatives of the DCPC, D/o H & FW to get their response on the issue. At the outset, the Committee were briefed on HIL (India) Ltd. as under:-

*“HIL has been incorporated in 1954 solely for the manufacture of DDT with 100 per cent shareholding by the Government of India. Various other manufacturing facilities such as Udyog Mandal, Kochi, was set up in 1957, Rasayani, Raigad in 1977, and Formulation Plant at Bhatinda in 2004. Some other diversification was also done for the production of agrochemicals, seeds, and fertilizers.....During 1920, when there was locust attack during COVID time, the staff was alert and rose up to the occasion and produced 600 KL of Malathion and helped the Department of Agriculture in controlling locus. HIL has three units. The Rasayani unit is in Maharashtra. If you see the profit and loss for the last five years, out of the three units only Rasayani unit is making profit, and Udyog Mandal, and Bhatinda unit are doing losses to the tune of Rs.50 crore per year because of various reasons. The Udyog Mandal unit was basically set up for production of DDT. Later on, Sir, benzene hexachloride, endosulfan, and dicofol plants were also set up. Subsequently, for various reasons one-by-one those plants were stopped either under the directions of the hon. Supreme Court, State Government or Stockholm Conventions. As a result of that, the overrate cost of production of products from the Udyog mandal was becoming unviable economically. Secondly, the raw materials were also being sourced from North India, and because of that the transportation cost was also becoming more. Similarly, for Bhatinda Unit which was primarily the formulation making unit, the raw materials were getting transported from Udyog Mandal and Rasayani, and the formulation was made there. This formulation was again transported to various parts of the country. So, the logistic cost was becoming high. For Bhatinda, there was a DDT Plant at Delhi which was closed as per the direction of Hon. Supreme Court. Their staff was deputed at Bhatinda which led to overstaffing, and as a result the cost of production at Bhatinda unit was quite high. These are the reasons why Udyog Mandal and Bhatinda units were running into losses. As per the Government of India’s policy in 2021, all the strategic and non-strategic sectors, PSUs, are to be either privatised, merged or closed. So, only a bare minimum CPSE in the strategic sector, has to be maintained. It is because of that policy and because both the units were not making profit, in April, the Committee of Group of Officers, under the Chairmanship of the Chairman, NITI Aayog, decided that the two units should be closed, and the Rasayani Unit should be disinvested. Accordingly, the Department has proposed for the closure of the two units-Udyogamandal and Bhatinda. At present, only the Rasayani Unit will be run as the single manufacturing unit and it will be made viable for making it eligible for disinvestment. For that purpose, in order to take care of the interests of the employees of Udyogamandal and Bhatinda, all the employees have been given an option to get transferred to Rasayani Unit. Those employees who will not be interested for a transfer, will be offered VRS and VSS as per the DPE guidelines. We have taken options from the employees of Udyogamandal and Bhatinda. There are 147 employees in both the units, and out of that, twenty-nine have opted for a transfer, and the rest of them, are interested in taking VRS or VSS. Hon. Chairperson, Sir, we have proposed for the closure of two units, and we have circulated the said proposal*

*to all the Ministries for their opinions. We have got their opinions also. Now, the proposal will be sent to DPE for final approval of the administrative mechanism. We have asked for Rs. 401 crore. Out of the said amount, Rs. 56 crore will be for meeting the expenditure arising on account of VRS/VSS and also, for payment of pending salary dues, and this is expected to be finalised very shortly. The remaining amount is for making payments to the vendors and also for the loans. All these things will be taken care of from the said funds”.*

61. On being pointed out by the Committee that the employees of HIL (India) Ltd. are starving and not even a month or two months’ advance against the arrears could be disbursed to them, a representative of the Department submitted as under:-

*“As per the availability of the fund, we have given them some advances to take care of their day-to-day needs. This PSU is suffering from a financial crunch. We have taken some steps. We have met with the vendors and asked them to supply raw materials. Then, we have started closely monitoring the performances also. We are generating some amount from the Rasayani unit, and from that amount, we are paying some advances to take care of their emergent needs. But once this proposal is approved and we get fund from the Government, all the dues will be paid. Twenty-nine employees have opted for a transfer and they have already been transferred to Rasayani Unit”.*

62. The Committee then drew the attention of the representatives to the fact that 118 employees have not agreed to be transferred and are waiting for their salaries. To this, the representatives submitted that they will get the funds from the Government very soon.

63. When the Committee referred to the same assurance given to the Committee during their study visit to Kochi in the month of May, 2023, a representative of the Department admitted that, actually, it is a very difficult situation.

64. The Committee then desired to know whether the Department has requested the Ministry of Finance for separate allocation of funds in this regard. The representatives replied in the affirmative.

65. The representatives further submitted as under:-

*“DIPAM will be dealing with this matter, and within a week or so, we will be sending the proposal to DIPAM, and then, they will take the approval of the administrative mechanism which may be finalized”.*

66. Expressing their concern over the fact that the employees of HIL have not been paid their salary for six months, the Committee viewed that HIL being owned by the Government of India, the Government should ensure payment of salaries and arrears to its employees. The representatives in reply submitted as under:-

*“We are paying the current salary..... the arrear will be paid through the fund that we will get from the Government once this proposal is approved. We have improved the operation. We are currently paying the salary. We are not paying full salary but we are paying some advance.. Sir, once we get the fund from the Government, then only we can pay for which we have already approached and we hope we will get some sort of relief... Sir, out of the total support which we are seeking in the form of budgetary support through the mechanism which has been elaborated ....., Sir, the total amount is on the higher side, about Rs. 402 crore but for VRS, VSS and other payment of arrears etc. there is a separately earmarked fund of about Rs. 56 crore or so. So, we should be focusing on this. Definitely, Sir, within this, overall budgetary requirement which we are projecting, we will focus especially on the Rs. 56 crore so that we can take care of the requirement of the employees. We are very sorry about the whole situation but it is a business kind of organization and we are not getting any support even from our bankers also. In fact, they wanted to rate this organization as one sort of NPA and they wanted to close our accounts also. With great persuasion, we have been able to operate even our bank accounts. So, this is the situation in which we are and for that, we have to take a harsh decision of closing down two units where nothing was happening and just to make sure that at least something happens in one place. Let us say Bhatinda. Only formulation was happening which could have been done in one place itself where the technical was being produced and in other place also, it is because of the logistics reasons. These are the historical reasons which have made them financially unviable and we hope that once we close down them, and with the VRS of remaining people and the people who are stuck there in Udyog Mandal, they will move to Rasayini. Probably, the whole operation becomes viable and we will be able to do much better”.*

67. The details of the training programmes for farmers organized under CPDS during the last 3 years were stated to be as given below:-

<b>Sl. No.</b>	<b>Name of the Organization</b>	<b>Name of the programme</b>
<b>2022-23</b>		
1	HIL (India) Ltd.	Conducting 35 one day Training Programme under CPDS during the Financial year 2022-23 at different locations in the country
2	IPFT	Conducting 6 one-day training program for promotion of use of botanical pesticide
3	IPFT	6 one-day training programs for promotion of safe and judicious use of Pesticides and application of New Generation Formulations for crop protection under CPDS during FY 2022-23 at different locations in the country
4	FICCI	11 <sup>th</sup> National Agrochemicals Conference held on

		23 <sup>rd</sup> June, 2022 in New Delhi
<b>2021-22</b>		
5	HIL (India) Ltd.	Conducting 22 one day Training Programme during the Financial year 2021-2022
6	FICCI	10 <sup>th</sup> National Agrochemicals Conference held on 23 <sup>rd</sup> September, 2021 in New Delhi
<b>2020-21</b>		
7	HIL (India) Ltd.	Conducting 23 one day Training Programme during the Financial year 2021-2022
8	FICCI	9 <sup>th</sup> National Agrochemicals Conference held on 1 <sup>st</sup> December, 2020 in New Delhi

68. It has been added that the objective of the training programmes conducted by HIL (India) Ltd. is to enhance the awareness for the judicious use of Pesticides. These trainings help the farmers in addressing the problem related to soil degradation, damage to the underground water bodies, human life and environment, which are because of the adverse effect of residual Pesticides. The farmers are also sensitized through video clips and PPE kits are also given to the farmers.

69. The Committee were informed through a written reply that the Rasayani unit of HIL (India) Ltd. suffered a massive loss of Rs. 30 crores and when asked about the reasons for the loss, the Department submitted that The DDT plant of HIL(India) Ltd at Rasayani was primarily operated to cater the demand of DDT by Ministry of Health and Family Welfare. However, the reasons for losses during 2021-22 are summarized below:-

- i. Order of DDT-50% was Rs.79.41 crore in the year 2020-21 and in the year 2021-22 order of DDT-50% has been reduced to Rs.43.91, thereby there is reduction of sales by Rs.35.50 crore in the year 2021-22.
- ii. Further, export order of DDT-75% was Rs. 24.70 crore in the year 2020-21 and in the year 2021-22 order of DDT-50% has been reduced to Rs. 6.48 crore; thereby there is reduction of sales by Rs.18.22 crore in the year 2021-22.
- iii. Total reduction in sale of DDT was Rs.53.72 crore due to which Rasayani has reported a loss of Rs.30.71 crore in the year 2021-22
- iv. Due to paucity of funds/financial crises, supplies of raw materials got affected as vendors were not willing to supply the same due to non-clearance of dues.



70. Asked about the precautionary steps taken to stop the recurrence of such unfortunate events, the Department submitted that to overcome the loss generated in the year 2021-22 in Rasayani Unit, HIL is focusing on utilization of idle production capacity of agrochemicals plants, increase in the production of LLIN etc. and during March, 2023, a meeting was held with major vendors who were persuaded to supply the raw materials to streamline the production. With these efforts, HIL (India) Ltd. has improved production since March, 2023 and as per DPE guidelines, Department has initiated efforts for closure of two loss making units i.e. Udyogmandal and Bathinda units.

## **OBSERVATIONS/RECOMMENDATIONS**

### **Administration of Insecticides Act, 1968**

1. The Committee note that Pesticides are regulated in the country through the Insecticides Act, 1968 and the Insecticides Rules, 1971 framed thereunder. The Act is a comprehensive legislation as it regulates the import, manufacture, sale, transport, distribution and use of Insecticides with an objective to prevent risk to human beings or animals. Further, the administration of the Insecticides Act, 1968 is with the Department of Agriculture and Family Welfare (DA & FW) and kept outside the purview of the Department of Chemicals and Petrochemicals (DCPC). The DA & FW uses its attached offices like Directorate of Plant Protection, Quarantine and Storage (DPPQS) for registration of Insecticides, inclusion of Chemicals/Insecticides etc. under the Act.

Keeping in view the significance of the role of DCPC in regulation of the Insecticides and Pesticides, the Committee apprehend that keeping administration of the Insecticides Act, 1968 outside the purview of the DCPC may act as a deterrent for regulation of the Insecticides and Pesticides. Also, DCPC is to take up matters of agrochemicals Industry with the DA & FW from time to time. It is, therefore, warranted that there is a requirement of close coordination between DCPC and DA & FW for the expeditious resolution of all the issues of the agrochemicals industry. The D/o Chemicals and Petrochemicals needs to take up the matter at the appropriate forum, to get allocated the administration of at least those provisions of the Insecticides Act, 1968, which are directly linked to the agrochemical industry. The Committee would like to be apprised of the decision taken in this regard.

### **Development of Pesticides**

2. The Committee note that Pesticides prevent the loss of agricultural products from diseases and attack of pests. The locusts attack in the year 2019-20 and 2020-2021 was controlled successfully when HIL (India) Ltd supplied approximately 600 KC of Malathion Technical to the Ministry of Agriculture for locust control programme. The Committee have been informed that the foodgrain production has increased from 52 million tonnes in the year 1951-52 to 300 billion tonnes in 2021-22 and among various factors which have

helped in increasing the agriculture production in the country, pesticides have played a vital role. The Committee appreciate that the Department has been taking various measures for promotion and development of pesticides like (i) playing the role of promoters for growth of the Industry (ii) taking up inter-ministerial coordination to sort out the problems of chemicals and petrochemicals sector (iii) extending financial support under Chemicals Promotion Development Scheme(CPDS) for organizing seminars, conferences and training programmes to create awareness among the farmers about the judicious use of agrochemicals and fertilizers.

The Committee take note of the fact that while pesticides play a vital role in increasing the agricultural production, their extensive use can, directly or indirectly, pollute air, water, soil and overall ecosystem thereby causing serious health hazards for living beings. The Committee, therefore, recommend that measures being taken by the Department for the promotion and development of pesticides should be stringently implemented for the balanced growth of pesticides in the country.

### Less consumption of Pesticides

3. The Committee note that the Pesticide Industry in India has a size of 50,000 crore and generic Pesticides are in demand worldwide. There is tremendous potential in the Pesticides industry, which needs to be tapped. The Committee, however, regret to note that consumption of the pesticides in the country is 0.5 kg per hectare whereas the consumption in some other countries is as high as 17 Kg per hectare, even though India is the second largest producer of agricultural products. The Department has clarified that countries like China and Japan have intensive agriculture—green house as well as poly house agriculture in which a number of crops are grown in and due to intensification of agriculture and the ‘spring technology’. These countries have a lead over India. Besides, the management of intensive agriculture in these countries is relatively better. Therefore, these countries use more pesticides. The Committee feel that significantly lower penetration levels of pesticides in India as compared to other countries like China clearly suggest that the market for pesticides is still largely unpenetrated with huge room for future growth in the country. Furthermore, with rising population, food demand is expected to continue to increase in the coming years and

pesticides will play a key role in increasing the average crop yields per hectare.

In view of the foregoing, the Committee feel that it is high time that the Department acts promptly to enhance the use of agrochemicals/pesticides in the country. The Committee recommend that the Department should study the agricultural practices of countries like Japan and China for suitably adopting the same in India. There is an urgent need for the Government to take initiatives to give a boost to the Pesticides industry. Increasing availability of pesticides and low interest rates of farm loans would encourage farmers to use more pesticides in order to improve crop yields. Initiatives should be taken to increase awareness of Pesticides among farmers. Farmers should be educated on the right usage of Pesticides in terms of quantity, the right application methodology and appropriate chemicals to be used for identified pest problems, etc.

#### **Phasing out of hazardous insecticides and Pesticides**

4. The Committee are aware that Pesticides are inherently hazardous, and among them, a relatively small number of Highly Hazardous Pesticides (HHPs) cause disproportionate harm to environment and human health with acute and chronic toxicity. The Committee are happy to learn that HIL (India) Ltd along with UNIDO is currently taking up the project titled “Promoting eco-friendly crop protection solution for persistent organic pollutant and highly hazardous Pesticides reduction in Asia” under a programme named as Financing Agrochemicals Reduction and Management (FARM) programme of the Global environment Facility with the objectives (i) to minimize the use of highly hazardous Pesticides and persistent organic pollutants in agriculture (ii) to catalyse investment in the agriculture sector etc.

The Committee hope that HIL(India) Ltd. will take all advance measures to execute the aforesaid project under FARM programme with all seriousness so that its objectives are achieved. The Committee would also like the Department to extend its full support to HIL (India) Ltd. in this regard.

## Regulation of Pesticides by the Department of Agriculture and Farmers Welfare

5. The Committee note that Pesticides are being regulated by the Department of Agriculture and Farmers Welfare (DA&FW) under the Insecticides Act, 1968 and the Insecticides Rules, 1971 framed thereunder. The DA & FW also reviews the use as well as banning of pesticides, which are reported to pose harm to human health and environment, through its Registration committee and has so far banned or phased out as many as 46 pesticides and 04 pesticides formulation besides withdrawal of registration of 08 pesticides and placing 09 pesticides under restricted use. Further, D/o Chemicals and Petrochemicals (DCPC) plays the role of promoter for the agrochemicals. The Committee are of the strong conviction that DCPC and DA & FW need to work in close coordination to avoid instances where the former promotes the pesticides and the later ban/discontinue their use depending upon their toxicity and harmful effects. The Committee recommend that adequate safeguards should be exercised by both the Departments engaged in regulation and promotion of pesticides and would like to be kept informed on this aspect.

### Organic pesticides

6. Organic pesticides are the pesticides derived from things in nature, which can be used to control pests. Neem based pesticides are the pest control agents manufactured from Neem extracts. The Committee note that organic and Neem based pesticides do not leave any synthetic residue in the crop produce and soil whereas the synthetic chemical pesticides leave a certain amount of pesticide residue after their application. Besides, these pesticides are usually inherently less toxic and affect only the target pest as compared to the conventional pesticides which are more toxic and may affect organisms, birds, insects and mammals as well. The Committee are deeply concerned to note that Neem based pesticides are currently manufactured by only a few organizations in the country and specific information with respect to companies in private sector planning to produce bio- pesticides is not even available with the Department. However, the Committee find some relief to learn that HIL (India) Ltd. is in the process of setting up neem based pesticides with the support of UNIDO, though initially HIL (India) Ltd. is targeting

mosquito control with the purpose of vector borne diseases management including malaria. While observing the promising properties of organic and neem based pesticides, the Committee strongly desire that the Department should realize the need of the hour and explore ways and means to overcome the limitations and impediments for effective large-scale use of these pesticides so that their full potential can be realised and they are put to use by the farming community. The process of setting up of neem based pesticides by HIL (India) Ltd should be expedited and the Company with time should endeavor to diversify development of all types of organic and neem based pesticides.

### Declining use of DDT

7. It has been brought to the notice of the Committee that the global use of DDT for vector-borne diseases has declined due to availability of new insecticide products with long residual activity periods for indoor residual spraying and next generation bed nets etc. Presently, HIL(India) Ltd. is the sole manufacturer of DDT and supplies it to the M/o Health and Family Welfare as per their requirement. Further, DDT is regulated as a Persistent Organic Pollutant (PoP) under the Stockholm Convention which has been ratified by India. This Convention has mandated the elimination of DDT from our country by December, 2024. In order to phase out DDT, UNIDO is supporting HIL (India) Ltd. in setting up of commercial manufacturing facilities for long lasting Insecticidal Nets (LLINs), Bti based bio-larvicides as well as Neem based botanical insecticide, larvicide, repellent and insect growth regulation (IGR). HIL (India) Ltd. is also the commercial manufacturing partner for the UNIDO project on “Development and Promotion of Non-PoPs” as an alternative to DDT and committed to complete the neem project and Bti Project before December, 2024. Moreover, DPR for Bti project is being prepared and would be completed by December, 2023 itself and expected to be commercialized in 2024.

The Committee trust that the Department/ HIL(India) Ltd. will give their utmost attention for elimination of DDT as well as preparation and commercialization of Bti project within the prescribed timelines. Further, commercial manufacturing facilities for long lasting Insecticidal Nets (LLINs), Bti based bio-larvicides as well as Neem based botanical insecticide, larvicide,

repellent, insect growth regulation (IGR) and development of other alternatives to DDT would be expedited so that their benefits reach society in a given timeframe.

### **Resolving the issues of Agrochemicals industry**

8. The Committee note that the Department has constituted an Advisory Forum in July, 2019 to identify the issues of agrochemicals industry that hinder its growth and development through policy interventions. The Advisory Forum provides a platform to the industry associations for raising their grievances and problems and also to boost the 'Make-in-India' initiative by promotion of investments in chemicals and petrochemicals sector to meet the growing domestic demand and promote export. Though the role of the Advisory Forum thus constituted is laudable, the Committee are dissatisfied to note that only a single meeting of the Advisory forum is being held in a calendar year. The first, second and third meetings of the Advisory forum were held on 27 August, 2019, 25 June, 2020 and 20 September, 2022, respectively.

The Committee are of the view that the frequency of meetings of the Advisory forum should be increased to enable the industry associations to put forth their grievances related to agrochemicals industry. This will be of great help in identifying the impediments affecting the growth of the Industry, finding the solutions to such impediments and achieving the objective of constituting the Advisory Forum in a true sense.

### **Indian Chemicals Industry**

9. The Committee note that the Indian Chemical Industry stands 6<sup>th</sup> globally in sales values, its present market size is around US \$ 220 billion and it is expected to reach US \$ 300 billion by the year 2025. Further, in the agrochemicals sector, India is the 4<sup>th</sup> largest producer and exporter and in dyes-stuffs India is 2<sup>nd</sup> largest producer and exporter. Moreover, it contributes 9.40% of manufacturing gross value added and 1.69 % of National Gross value added. Also, it employs around four million people directly and indirectly. However, it is worrisome that Indian Chemical Industry is the net importer and in financial year 2020-21, the trade deficit stood at Rs. 1.75 lakh crore. The main reason was the non-availability of feedstocks and mining agents.

In view of the foregoing, the Committee believe that Indian Chemical Industry has a potential to grow further and therefore would earnestly desire that the Government should extend all possible help and assistance to resolve the issues being faced by the Indian Chemical Industry. Though the Department, in order to reduce dependence on imports, is working on introducing the PLI scheme in the chemicals sector for those chemicals which are majorly imported from a single source and have multiple uses, the Committee recommend that the Government act with urgency to minimize the trade deficit in the near future.

#### **Development of new generation pesticides formulation technology by IPFT**

10. The Committee have been informed that IPFT is the only Institute of its kind devoted for the development of state-of-the-art user and environment friendly new generation pesticides formulation technology and has established a healthy support with the agrochemical industry and transfer technologies for safer, efficient and environment friendly formulations etc. Further, IPFT has also conducted field trials for bio-efficacy and phytotoxicity evaluation etc. However, it conducted 14, 15 and 18 such trials during the year 2020-21, 2021-22 and 2022-23, respectively in the State of Haryana only. The Committee are, however, disappointed to note that IPFT has no further plans to conduct field trials in other States/UTs. The Committee are of the opinion that field trials at different places may show different results and would be useful for development of new generation pesticides formulation technology. Hence, the Committee recommend to the Department/IPFT to conduct field trials accordingly.

#### **Consumption of Agrochemicals in the country**

11. The Committee note that Agrochemicals are chemicals that are used to control pests, pathogens, etc. and supply nutrients to the soil. Further, Insecticides/Pesticides are broadly termed as Agrochemicals and play a vital role in increasing agricultural productivity by protecting crops from insects, pests, fungi, weed etc. Agrochemical sector is also contributing in a big way to the GDP as well as to gross value addition manufacturing. The global market of agrochemicals is 4,50,000 crore. However, the Indian size of the agrochemicals market is about Rs. 50,000 crore. India is a net exporter of



agrochemicals. A perusal of the country-wise consumption of Agrochemicals *inter-alia* reveals that the consumption of Agrochemicals in Kilo tonnes by China is 1763, USA 407, Brazil 377, Argentina 172, Canada 90, France 85, Russia 76 and their world share are 43 percent, 10 percent, 9 percent, 4 percent, 2 percent, 2 percent, 2 percent respectively, whereas the consumption of Agrochemicals in India in Kilo tonnes is just 58 and its world share is just 1 percent. The Committee desire to know the reasons for this huge difference in consumption of Agrochemicals between India and other countries. The Committee would further like to be apprised of the concrete steps being taken to increase the consumption of agrochemicals in India and to increase its world share.

#### **Development of safer pesticides formulation by IPFT**

12. The Committee are pleased to note that IPFT has developed 80, user and environment friendly pesticides formulation technologies. They have developed water disposable granules, controlled-release formulations, concentrated emulsions and micro emulsions which are being used by the industry. Apart from that, IPFT provides training on various aspects of formulation to technical personnel from pesticides industry, scientists, students, etc. Further, in collaboration with ICAR, IPFT has developed two formulations of management of orbanche weed and during the last three years, 28 research papers on formulations, analytical, chemistry and persistence studies have been published in reputed national and international journals. While appreciating the efforts of the IPFT, the Committee would earnestly desire that IPFT should make consistent efforts to develop new pesticide formulations for the benefits of farmers, registering a bumper crop production in the country and keep the committee informed in this regard.

#### **Promoting the use of Bio-Pesticides**

13. The Committee note that IPFT is making continuous efforts for promoting bio-botanical bacterial pesticides. Besides developing various technologies of different bio-botanical pesticides bacterial formulations, IPFT is also conducting training programmes for farmers to promote the use of botanical based crop protection products. The Committee feel that there is a considerable need to promote the use of *bio-pesticides/bio botanical*

*pesticides* to address the serious concern posed to human life and environment by the use of *non-target toxicity*, residual consequences and challenging biodegradability of the synthetic pesticides. The Committee therefore, impress upon the Department/IPFT to vigorously take up training programmes for the farmers to educate them in this regard accordingly.

#### Setting up of four Advanced Research Centres (ARC) of IPFT

14. The Committee note that IPFT proposes to set up four advanced research centres (ARCs) in the state of Assam, Karnataka, Uttar Pradesh and Gujarat. A concept note in this connection, for obtaining in-principle-approval from the respective states, has been submitted to the Department. Only after the approval of the Government, ARCs can be set up and further action would be taken accordingly in the matter. The Committee recommend to the Department to expedite the examination and processing of the proposal received from IPFT and take up the matter at highest level with Government of India, for its approval.

#### Sanctioned and Actual Strength of IPFT

15. The Committee note that out of the total sanctioned strength of 40, the working staff strength of IPFT is just 19 which is less than 50% of the total sanctioned strength. The posts are lying vacant for various reasons, one superannuary post of establishment officer is lying vacant, 07 vacant posts have been advertised, 02 post became vacant due to retirement of incumbents of Group 'C' officers in December, 2022 and 01 post of specialist (Bioscience) is under litigation. The Committee urge the Department to take immediate steps to fill all the vacant posts in IPFT on priority basis so as to enable IPFT to discharge its function in an efficient and time bound manner.

#### Loss of Rs. 30 crore to Rasayani Unit of HIL (India) Ltd. during 2021-22.

16. The Committee are concerned to note that the Rasayani unit of HIL (India) Ltd. suffered a massive loss of Rs. 30 crore during 2021-22. The Committee are, however, not convinced with the reply of the Government to justify the loss of Rs. 30 crore. It has been informed that order of DDT which was, Rs. 79.41 crore in the year 2020-21 declined to Rs. 43.91 crore, that is, by 50% of order value in 2020-21 resulting in reduction of sales by Rs. 35.50

crore. Similarly, the export order of DDT during 2020-21 which was Rs. 24.70 crore too declined to Rs. 6.48 crore resulting in reduction of sales by Rs 18.22 crore. As such the total reduction in sale of DDT was Rs. 53.72 crore. The Committee are unable to understand how Rasayani unit incurred a loss of Rs. 30 crore during 2021-22 when there was a reduction in sale of DDT by Rs. 53.72 crore in 2020-21. The Committee would expect factual information in this regard.

17. The Committee further take note of the steps taken by HIL(India) Ltd. to overcome the loss generated in the year 2021-22 in Rasayani unit. The company is focusing on utilization of idle production capacity of agrochemicals plants besides increasing the production of LLINs and also persuading the major vendors to supply new materials to streamline the production. The Committee would like to be assured that the Department/HIL (India) Ltd. would take all corrective measures to avoid recurrence of such a huge loss in future.

#### **Non-Payment of salaries/arrears to employees of HIL (India) Ltd.**

18. The Committee, during their study visit to Kochi in May, 2023 learnt that the Udyogamandal Unit of HIL (India) Limited had been closed down due to operational losses because of increase in production cost at the plant as raw materials were brought from far-off places, which made its products unviable. The Committee regret to note that due to paucity of funds, salary and other dues could not be provided to their employees for the past several months. Even the retired employees are not given gratuity and pension. Further, Voluntary Retirement Scheme (VRS)/ Voluntary Separation Scheme (VSS) has been offered to the employees of the unit. Though the Committee were assured during the study visit in May, 2023 that utmost efforts would be made by the Department to get the dues of HIL of Rs. 96 crore pending with the Ministry of Health and Family Welfare, which will facilitate payment of salary and other dues to its employees, the position as is learnt remains the same even after considerable lapse of time with no resolution to the crisis. The representatives of the Department during evidence on 28 July, 2023 submitted that the employees are being given some advances to take care of their day-to-day needs. Further, a proposal for the closure of two units will soon be sent to DPE for final approval of the administrative mechanism. Out of Rs. 401 crore

that has been sought, Rs. 56 crore will be for meeting the expenditure arising on account of VRS/VSS and also, for payment of pending salary dues. The remaining amount will be used for making payments to the vendors and also for the loans.

The Committee would like to be assured that the Department would vigorously pursue the matter with the Ministry of Finance and get the required amount of Rs. 402 crore for expending the same on account of VRS/VSS, for payment of pending salary dues to the employees, etc. The Committee hope that the matter will get a favorable response from the Ministry of Finance. The Committee would like to be kept updated on the matter.

### Training programmes for farmers for judicious use of Fertilizers

19. The Committee note that the D/o Chemicals and Petrochemicals(DCPC) extends financial support under Chemicals Promotion Development Scheme (CPDS) for organizing seminars, conferences and training programs to create awareness among the farmers about judicious use of agrochemicals and fertilizers. The Committee also note with satisfaction that HIL (India) Ltd. as well as IPFT organize training programmes under CPDS to enhance awareness among the farmers to judiciously use pesticides and for helping them in addressing the problems such as soil degradation, damage to the underground water bodies, human life and environment due to the adverse effect of residual pesticides, etc. Farmers are also sensitized through video clips and PPE kits are also given to the farmers.

Taking cognizance of the fact that the increased use of chemical fertilizers in the country would consequently translate into enhanced crop production, the Committee feel that training to the farmers is the need of the hour to educate them about the judicious use of fertilizers to reduce their harmful effects on the environment and other forms of life. The Committee, therefore, recommend that pan-India training programmes should be organized at frequent intervals of time with wide publicity so as to engage more and more farmers.

**Nil import of Long Lasting Insecticidal Nets (LLINs)**

20. The Committee are happy to learn that the LLINs have not been imported even once during the last three years as indigenous technology has been developed for the commercialization of the LLINs at HIL (India) Ltd. The Committee are aware that this will not only reduce the dependency of the country on imports but also save precious foreign reserves/exchange. The Committee would desire the Department to keep up the good work with regard to attaining self-reliance in the manufacture of LLINs in the future as well.

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*New Delhi;*  
**14 December, 2023**  
*23 Agrahayana, 1945 (Saka)*

**DR. SHASHI THAROOR**  
**CHAIRPERSON,**  
**STANDING COMMITTEE ON**  
**CHEMICALS AND FERTILIZERS.**

**STANDING COMMITTEE ON CHEMICALS & FERTILIZERS**

**(2022-23)**

**Minutes of the Eighth Sitting of the Committee**

The Committee sat on Wednesday, the 08 February, 2023 from 1720 hrs. to 1845 hrs. in Committee Room 'D', Parliament House Annexe, New Delhi.

**PRESENT**

**Dr. Shashi Tharoor – CHAIRPERSON**

**MEMBERS**

**LOK SABHA**

2. Shri Deepak Baij
3. Shri Ramakant Bhargava
4. Shri Prataprao Patil Chikhalikar
5. Shri Rajeshbhai Naranbhai Chudasama
6. Dr. Sanjay Jaiswal
7. Shri Satyadev Pachauri
8. Smt. Aparupa Poddar

**RAJYA SABHA**

9. Dr. Anil Jain
10. Shri Vijay Pal Singh Tomar

**SECRETARIAT**

- |    |                        |   |                     |
|----|------------------------|---|---------------------|
| 1. | Shri Vinay Kumar Mohan | - | Joint Secretary     |
| 2. | Shri N. K. Jha         | - | Director            |
| 3. | Smt. Geeta Parmar      | - | Additional Director |
| 4. | Shri Kulvinder Singh   | - | Deputy Secretary    |
| 5. | Shri Panna Lal         | - | Under Secretary     |

**WITNESSES**

**Representatives of the Ministry of Chemicals and Fertilizers  
(Department of Chemicals and Petrochemicals)**

- |    |                           |                  |
|----|---------------------------|------------------|
| 1. | Shri Arun Baroka          | Secretary (C&PC) |
| 2. | Sh. Susanta Kumar Purohit | Joint Secretary  |
| 3. | Ms. Divya Parmar          | Economic Adviser |
| 4. | Shri K. K. Srivastava     | Director         |

5. Shri Ram Sajeevan Director

### **Representatives from Ministry of Agriculture and Farmers Welfare**

- |    |                        |                             |
|----|------------------------|-----------------------------|
| 1. | Shri A. K. Shrivastava | Joint Secretary             |
| 2. | Dr. Sanjay Aarya       | Sec. CJB & RC               |
| 3. | Dr. Archana Sinha      | J. D. (DA&FW)               |
| 4. | Dr. Ranjit Singh       | Director (Plant Protection) |

### **REPRESENTATIVES FROM OTHER PSUs/ORGANIZATIONS**

- |    |                          |                          |
|----|--------------------------|--------------------------|
| 1. | Dr. Jitender Kumar       | Director- IPFT           |
| 2. | Shri Shashank Chaturvedi | Director (Marketing) HIL |
| 3. | Dr. Vishal Choudhury     | Dy. Ind. Adviser         |
| 4. | Dr. J. P. Singh          | Plant Protection Adviser |

2. At the outset, the Chairperson welcomed the representatives of the Department of Chemicals and Petrochemicals(DCPC), its PSUs/Organizations and Ministry of Agriculture to the sitting of the Committee convened to have briefing on the subject 'insecticides & pesticides – promotion and development including safe usage - licensing regime for insecticides'. Their attention was also drawn to the Direction 58 of 'Directions by the Speaker, Lok Sabha' about the confidentiality of the proceedings of the Committee.

3. Thereafter, the Secretary, DCPC briefed the Committee through a Power Point Presentation *inter-alia* highlighting Chemical Industry: An overview, Indian Chemical Industry, Projected Market Size of Sector, Chemical industry market by segment (FY20), Introduction of Pesticides, Classification of Pesticides, Pesticides Sector Scenario, Top ten Export Destinations for Indian Pesticides, Country-wise Major Imports of Pesticides, Country-wise Consumption of Agrochemicals, The Insecticides Act, 1968, Insecticides Act, 1968, Implementation of Insecticide Act, 1968, Insecticides Rules, 1971, Key provisions, Central Insecticides Board, Registration Committee, Types of Registrations under the Act, Registered pesticides in India, Quality Control of Pesticides, Locust Control efforts 2019-2020, Integrated Pest management IPM, Efforts made to promote IPM, Safe & Judicious use of Pesticides, IPM efforts during last five years, etc.

4. The Members, then, raised certain queries on the subject like country-wise consumption of agro-chemicals, use of pesticides, misuse and abuse of pesticides including its ill-effects, phasing out of the hazardous pesticides, introduction of organic pesticides, safe usage of pesticides etc. The representatives of the Ministry responded to the same.

5. The Chairperson thanked the Secretary and other representatives of the Ministry for furnishing the available information on the subject matter and responding to queries of the Members.

(The witnesses then withdrew)

[A copy of the audio-recorded verbatim proceedings was kept on record]

***The Committee then adjourned.***



**MINUTES OF THE FIFTEENTH SITTING OF THE  
STANDING COMMITTEE ON CHEMICALS AND FERTILIZERS (2022-23)**

The Committee sat on Thursday, the 20<sup>th</sup> July, 2023 from 1600 hrs. to 1800 hrs. in Committee Room 'D', Parliament House Annexe Building, New Delhi.

**PRESENT**

DR. SHASHI THAROOR- CHAIRPERSON

**MEMBERS**

**LOK SABHA**

2. Shri Dibyendu Adhikari
3. Shri Ramakant Bhargava
4. Shri Prataprao Patil Chikhlikar
5. Dr. Sanjay Jaiswal
6. Shri Ramesh Chandappa Jigajinagi
7. Shri Satyadev Pachauri
8. Dr. Sanjeev Kumar Singari

**RAJYA SABHA**

9. Dr. Anil Jain
10. Shri Arun Singh
11. Shri Ram Nath Thakur
12. Shri Vijay Pal Singh Tomar

**SECRETARIAT**

- |    |                        |   |                     |
|----|------------------------|---|---------------------|
| 6. | Shri Vinay Kumar Mohan | - | Joint Secretary     |
| 7. | Smt Geeta Parmar       | - | Additional Director |
| 8. | Shri Kulvinder Singh   | - | Deputy Secretary    |
| 9. | Shri Panna Lal         | - | Under Secretary     |

**WITNESSES**

**Representatives of the Ministry of Chemicals and Fertilizers (Department of Chemicals and Petrochemicals)**

1. Shri Arun Baroka - Secretary (C&PC)
2. Shri Susanta Kumar Purohit - Joint Secretary (Chemicals) and CMD HIL (India) Ltd.
3. Shri Deepak Mishra - Joint Secretary (PC) and Director, IPFT

- |    |                                   |                                  |
|----|-----------------------------------|----------------------------------|
| 4. | Shri Ganga Kumar                  | - DDG                            |
| 5. | Smt. Divya Parmar                 | - Economic Adviser               |
| 6. | Shri K. K. Srivastava             | - Director                       |
| 7. | Shri Awijit Rakshit               | - Director                       |
| 8. | Dr. Sanjay Kumar<br>Chattopadhyay | - Convener, Advisory Forum, DCPC |

### **Representatives of the Ministry of Environment, Forest and Climate Change**

- |    |                       |                    |
|----|-----------------------|--------------------|
| 1. | Dr. Satyendra Kumar   | - Director (HSMD), |
| 2. | Shri Dinabandhu Gouda | - Scientist, CPCB  |

### **Representatives of The Ministry of Agriculture & Farmers Welfare**

- |    |                             |                                       |
|----|-----------------------------|---------------------------------------|
| 1. | Dr. Ashish Kumar Srivastava | - Joint Secretary, (Plant Protection) |
| 2. | Dr. Sanjay Arya             | - Secretary (CIB&RC) DPPQ&S           |
| 3. | Dr. Archana Sinha           | - Joint Director (Chemistry), DPPQ&S  |

### **Representatives of the Ministry of Health and Family Welfare**

- |     |                  |                   |
|-----|------------------|-------------------|
| 19. | Dr. Rajiv Manjhi | - Joint Secretary |
|-----|------------------|-------------------|

### **Representatives of other PSUS/Organizations**

- |    |                                 |   |
|----|---------------------------------|---|
| 1. | Shri Shashank Chaturvedi        | - Director (Marketing) HIL (India) Ltd. |
| 2. | Shri D. N. V. Srinivasa Raju    | - Director (Finance), HIL (India) Ltd.  |
| 3. | Shri B. Sajeeb                  | - CMD, HOCL                             |
| 4. | Dr. Mohana Krishna Reddy Mudiam | - Director, IPFT                        |
| 5. | Sh. Varun Singh Punia           | - DIA (VSP)                             |
| 6. | Ms. Himanshi Trivedi            | - Asst Director                         |

2. At the outset, the Hon'ble Chairperson welcomed the representatives of the Department of Chemicals and Petrochemicals to the sitting of the Committee convened to take oral evidence on the subject 'Insecticides & Pesticides-Promotion and development including safe usage-licensing regime' for insecticides. Their attention was drawn to the Direction '58' of the 'Direction by the Speaker' regarding confidentiality of the proceedings of the Committee.

3. The Secretary, Department of Chemicals and Petrochemicals then made a Power Point presentation highlighting various aspects of the subject viz. overview of the Chemical Industry, projected market size of the Chemicals Sector, Introduction of

Pesticides and their classification, scenario of pesticides sector, country-wise consumption of agrochemicals, top ten export destination for Indian Pesticides, country wise major imports of Pesticides, Promotion and Development of Insecticides including their safe and judicious use, role and responsibilities under the insecticides Act, 1968, Constitution of Central Insecticides Board, and Registration Committee under section 4 and 5 of the Insecticides Act, 1968, Integrated Pest Management (IPM), Quality and production of the state of the art user and environment friendly new generation pesticides formulation technology by *Institute of Pesticide Formulation Technology* (IPFT), functioning of HIL (India) Limited, closure of its two units and also its role in controlling locust attack, Farmers training programme conducted under Chemicals Promotion Development scheme (CPDS) by HIL (India) Ltd. and ensuring quality of chemicals.

4. The Members then raised several queries related to the subject and the representatives of the Department of Chemicals and Petrochemical and Department of Health and Family Welfare responded. Further, certain clarifications were sought on points viz. the reasons for not conducting not even a single farmers training programme during the year 2019-2020 under chemical promotion development scheme by HIL (India) Ltd., whether conducting only 134 farmers training programmes covering just 46,561 farmers would be adequate for practicing judicious and safe use of Pesticides countrywide, how to stop the availability of banned insecticides/pesticides in the market and how HIL (India) Ltd. would function and discharge its responsibilities with just a single function unit, etc.

5. The Secretary, Department of Chemicals and Petrochemicals assured the Committee to furnish written replies to the queries which remained unanswered within two weeks time.

6. The Chairperson thanked the Secretary and other representatives of the Department of Chemicals and Petrochemical and Department of Health and Family for furnishing the required information on the subject and responding to the Members of the Committee.

(The witnesses then withdrew)

[A verbatim record of the proceedings was kept on record]

***The Committee then adjourned.***