MINUTES OF THE 58th MEETING OF THE CENTRAL INSECTICIDES BOARD (CIB) HELD ON 22.05.2020 AT 1100 HRS ONWARDS THROUGH VIDEO CONFERENCING.

The 58th meeting of Central Insecticides Board was held on 22.05.2020 at 1100 hrs onwards through video conferencing under the Chairmanship of (Prof.) Dr. Rajiv Garg, Director General of Health Services, Ministry of Health & Family Welfare. The list of the participants is at **Annexure-I.**

The Chairperson welcomed the participants. After formal introduction by the participants, Chairperson requested the Secretary CIB&RC to present the agenda. After detailed deliberation on each issue, the following decisions were taken.

Agenda item No.1: Confirmation of minutes of 57th meeting of CIB held on 15.11.2019

Except minor correction in the name of the molecule at Sl. No. 13 of Annexure-VI which shall be "Florpyrauxifen-benzyl", the minutes of the 57th meeting of Central Insecticides Board were confirmed.

Agenda item No. 2: Follow –up action on the decision of 57th Meeting of the CIB

The Board noted the follow up actions on the decisions of 57th meeting with satisfaction and appreciated the efforts made to complete the action in a time bound manner **(Annexure-II).**

Agenda item No. 3:Progress Report:

A. Progress report of the registration committee:

Hon'ble Chairperson expressed his happiness about the progress made by the Registration Committee since the last Board Meeting. The Members were further apprised of the new formulations approved/ registered by the RC u/s 9(3)**(Annexure-III &IV),** new &already registered bio-pesticides**(Annexure-V)**, import permit issued for multi-use**(Annexure-VI)**, new alternate and additional packaging**(Annexure-VII)**, waiting period/ pre-harvest interval between application of the pesticides and harvest in respect of various commodities in case of new formulations registered under section 9(3) & label expansion of already registered formulations**(Annexure-VIII)** and enhancement of shelf life under Section 9(3)**(Annexure-IX)** approved by the Registration Committee, since the last Board meeting. The board noted the progress made by the CIB&RC in registering the new and safer formulations.

B. Progress Report of Central Insecticides Laboratory (CIL):

The Board noted the progress of the CIL with satisfaction.

C. Progress Report of Techno-Legal Cell (TLC) and Regional Pesticide Testing Laboratories ((RPTLs):

The Board noted the progress of the Techno-legal Cell and RPTL's with satisfaction.

Agenda item No.4: Import permit issued for multi-use/dual use (non insecticidal purpose)

The Board noted the progress made by the CIB&RC in approving import permit issued for multi-use/dual use (non insecticidal purpose) as per **(Annexure-VI)**.

Agenda item No.5: New packing approved by the Registration Committee

The Board noted the progress made by the CIB&RC in approving both for new packing for new formulations and additional packing for approved pesticides as per **(Annexure-VII).**

Agenda item No.6: Waiting period/ pre-harvest interval between application of the pesticides and harvest in respect of various commodities in case of new formulations registered under section 9(3) & label expansion of already registered formulations

The Board noted the progress made by the CIB&RC, except about four pesticides which were technical pesticides, as per **(Annexure-VIII).**

Agenda item No.7: Consideration of cases of application for enhancement of shelf-life from one year to two years registered u/s 9 (3) of the Insecticides Act,1968

The Board noted the progress made by the CIB&RC as per **(Annexure-IX).**

Agenda item No.8: Consideration of proposals for Inclusion of New Molecules/substances in the Schedule to the Insecticides Act, 1968.

The Board deliberated the agenda in details and decided to include the molecules in the Schedule to The Insecticides Act, 1968. The complete list along with decision of the Board is annexed at **(Annexure X).**

Agenda item No.9: OA No. 155/2017 (SZ) before Hon'ble National Green Tribunal (NGT), Chennai-in the matter of M/s Gobineelan vs Union of India and Others- seeking status on framing of Bye Laws for Central Insecticides Board.

Board deliberated the agenda and observed that as per the provision envisaged under section 7 of the Insecticides Act, 1968 there is requirement of framing of Bye Laws by the Board for procedural purposes and to be notified by the Central Government**.** Board observed that the Bye Laws were framed but the same are not presently traceable despite of hard efforts by the Sectt. of CIB&RC. Further, the Board also took cognizance of the order dated 04.02.2020 passed by the Hon'ble NGT, Chennai in OA No. 155/2017 (SZ) whereby the Hon'ble NGT, Chennai had directed the Central Government through DAC&FW to submit a status report on the aspect of framing of the Bye Laws as envisaged under section 7 of the Act.

In view of above, the Board decided to reframe the Bye Laws and perused the draft Bye Laws placed before the Board and after deliberations it is decided to adopt the same subject to the modification in para no. 3 of the Bye Laws wherein the requirement of one third of the total members of the Board shall be a requirement for convening the meeting for the business to be transacted by the Board. The Board further desired that with highest regard to the directions of the Hon'ble NGT, Chennai a status report may be submitted accordingly. The Bye Laws as approved and adopted are at **(Annexure XI).**

Agenda item No.10: Consultation/Consent to Punjab Government regarding amendment/change in "Punjab Insecticide (Appeal) Rules 1975" required under Section 37 of the Insecticides Act, 1968

Members perused the agenda and observed that the Punjab State Agriculture Department had carried out certain amendments in the draft Rules named as the Punjab Insecticides (Appeal) first amendment Rules 2020 whereby they have proposed to make a change in the appellate authority and the enhancement of existing fee of appeal. The board also perused the provisions of section 37 of the Insecticides Act, 1968 which reads as under:

*37. Power of the State Government to make rules 1. The State Government may, **after consultation with the Board** and subject to the condition of previous publication, by notification in the official Gazette, make rules for the purpose of giving effect to the provisions of this Act and not inconsistent with the rules, if any, made by the Central Government.*
2. In particular and without prejudice to the generality of the foregoing power, such rules may provide for-
a. The authority to which, the manner in which, and the fee on payment of which, an appeal may be filed under Sec. 15 and the procedure to be followed by the appellate authority in disposing of the appeal."

The Board observed that the State Government has the power to make Rules as proposed and further a consultation with the Board is a pre-requisite for the purposes. Accordingly, after detailed deliberations the board decided to agree with the proposal of the Punjab State Agriculture Department and approved the same.

Agenda item No.11: Approval of Molecules/Products with Brand Name in the Schedule to the Insecticides Act, 1968

The Board deliberated the list of 54 molecules /products, which are there in the Schedule to the Insecticides Act, 1968 with trade name alongwith chemical or Common Name, and approved for inclusion in the Schedule after deletion the trade name as per serial number one to 54 **(Annexure XII).**

It was also brought to the notice of the Board that there are 6 more such molecules/products, which are not in the list of 54 molecules/products, but are there in the schedule with trade /Code name along with chemical or Common Name. The Board approved these molecules/products also for inclusion in the Schedule after deletion the trade name as per serial number 55-60 **(Annexure XII).**

Agenda item No.12: Regulation of Multiuse/Dual use Pesticides (for Non-Insecticidal purpose)- Follow up action of Agenda item no. 8 of 57th CIB Meeting.

The Board members were apprised about the import permit issued besides the status of the court cases pending in the matter. The Board noted the information.

Agenda item No.13: Consideration of Amendments in the rules vide Notification issued by Ministry of Agriculture and Farmers Welfare.

The Board deliberated the Notifications issued by Ministry of Agriculture and Farmers Welfare especially the GSR No. 264(E) dated 24.04.2020 and agreed to the amendments proposed.

Agenda item No.14: Grant of permission of aerial spraying for control of desert locust.

It was apprised to the Board that the country is facing continuous and heavy incursion of desert locust since last year from other side of the border into bordering districts of Punjab, Rajasthan and Gujarat**.** Considering locust as serious threat to the Indian Agriculture, Government of India, Ministry of Agriculture and Farmers Welfare, Department of Agriculture, Cooperation and Farmers Welfare, Directorate of Plant Protection, Quarantine & Storage considering the option of aerial spraying for locust control in the scheduled desert area of India. RC has approved various pesticides for control of desert locust including two of the ULV formulations viz; Malathion 96% and Deltamethrin 1.25 % which can be used for aerial spraying. Considering the requirement of the aerial spraying and provisions envisaged under the Insecticides Act, 1968 and Rules, 1971, one of the functions of the Board is to specify the uses of classification of insecticides on the basis of their toxicity as well as their being suitable for aerial application (Rule 3(b)). Rule 43 provides that the aerial application of insecticides shall be subject to the following provisions: -

a. Marking of the area shall be the responsibility of the operator.
b. The operator shall use only approved insecticides and their formulation at approved concentration and height.
c. Washing, decontamination and first-aid facilities shall be provided by the operators.
d. All aerial operations shall be notified to the public not less than twenty- four hours in advance through competent authorities.
e. Animal and persons not connected with the operations shall be prevented from entering such areas for a specific period.
f. The pilots shall undergo specialisation training including clinical effects of the insecticides.

The Board after deliberation approved the aerial application of insecticides for control of desert locust in the Scheduled Desert Area of India as per provisions envisaged under Rule 3(b) and Rule 43 of the Insecticides Rules, 1971 and the Standard Operating Procedure (SOP) for aerial spraying of insecticides prepared by the Directorate of Plant Protection Quarantine and Storage, Department of Agriculture, Cooperation and Farmers Welfare **(Annexure XIII).**

Agenda item No.15: Use of Drones for Pesticides Application

It was apprised to the Board by the Special invitee of DGCA that in national exigency Directorate General of Civil Aviation (DGCA), Ministry of Civil Aviation may grant approval of use of Drones for aerial spraying of insecticides (pesticide) as it has been done in the case for control of desert locust. The Board after deliberation approved the Sub-Committee Report to frame guidelines for use of drones for insecticide (pesticides) applications in locust control, plant protection and public health prepared under the Chairpersonship of Dr. Sandhya Kulshrestha, Consultant (Pharma) and endorsed by the Plant Protection Adviser after minor modification as per **Annexure XIV** and Standard Operating Procedure (SOP) for aerial spraying of insecticides prepared by the Directorate of Plant Protection Quarantine and Storage, Department of Agriculture, Cooperation and Farmers Welfare, which also include use of drone, as per **Annexure XIII.**

Agenda item No.16: Follow up action of agenda item no. 10.2 of 56th CIB Meeting

The Board noted the status report.

Agenda item No.17: Any other item with permission of the Chair

Follow up action of agenda item 10.1 of 56th Board meeting: Requirement of Good Laboratory Practice (GLP) Certification for regulation of pesticides.

Keeping in view of the Covid-19 situation Board Members reviewed its decision taken in 56th meeting at agenda item 10.1. In this regard the Board members were also apprised that the laboratories accredited/certified by either NABL or GLP and having pesticide testing in their scope have been exempted by Government of India vide notification S.O.93(E) dated 03.01.2020 for the purpose of importing insecticides or pesticides to the tune up to 10 kilograms in a calendar year for research and development purposes and registration related data generation.

After deliberation of the Agenda in detail the Board decided that the data generated /produced by the Good Laboratory Practices (GLP) certified testing facilities /institutions shall only be considered for pre-clinical safety testing and data generated /produced by Good Laboratory Practices (GLP) or NABL certified testing facilities /institutions shall be considered for physio-chemical analysis and other parameters whichever are under the scope of certification/accreditation. However, the Board also emphasized that the industry should be encouraged to adopt GLP.

The meeting ended with vote of thanks to the Chair.

Annexure-I

List of Participants of 58th Central Insecticides Board meeting held on 22th May, 2020 at 11:00Hrs (Through Video Conferencing)

Board Chairman/ Members/ Special invitee

1. Dr. Rajiv Garg, Director General of Health Services(DGHS).
2. Dr S.P. Shani, Deputy Drug Controller of India (DDCI)
3. Sh. Rajesh Malik, Plant Protection Adviser, Directorate of Plant Protection, Quarantine and Storage.
4. Dr. J.P. Singh, Joint Director & Secretary(CIB&RC), Directorate of Plant Protection, Quarantine and Storage.
5. Dr. R.K. Elangovan, Director General, Directorate General of Factory advice Services and Labour Institutes.
6. Ms. SuneetiToteja, Director General (DG), Director General, Bureau of Indian Standards.
7. Capt. Pooran Chand Meena, Nautical Surveyor cum DDG (Tech), Director General of Shipping (In-charge).
8. Dr. S. C. Khurana, Lead Expert, FSSAI.
9. Dr. Praveen Malik, Animal Husbandry Commissioner. Department of Agriculture & Farmers Welfare
10. Dr. S.K. Khurana, Consultant (Pathology)
11. Dr. Vishal Choudhary, Dy. Industrial Advisor (Chemicals), DCPC, erstwhile Directorate-General of Technical Development.
12. Dr. Jitendra Kumar, Director, Ministry of Petroleum and Chemicals.
13. Dr. VeenaVerma, Director Professor, Department of Pharmacology, Safdarjung Hospital.
14. Dr. Rajan, Assistant Director General (Plant Protection), Indian Council Agricultural Research.
15. Dr. S. Chandrasekhar, Director, Indian Institute of Chemical Technology.
16. Dr. Suneel Pandey, Director General, The Energy and Resources Institute (TERI).
17. Mr. Hillol Biswas, Director, Director General of Civil Aviation, Ministry of Civil Aviation.

List of experts/participants of Secretariat of CIB&RC and CIL

18. Dr. S.K. Khurana, Consultant (Pathology), CIB&RC, DPPQ&S, Faridabad.
19. Dr. Sandhya Kulshrestha, Consultant (Pharma), CIB&RC, DPPQ&S, Faridabad.
20. Dr. SaritaBhalla, Consultant (Pharma), CIB&RC, DPPQ&S, Faridabad.
21. Dr. Archana Sinha, JD (Chem), CIB&RC, DPPQ&S, Faridabad.
22. Sh. Hari Om Miglani, Sr.LO, CIB&RC, DPPQ&S, Faridabad.
23. Sh. A. K. Reddy, DD(WS), CIB&RC, DPPQ&S, Faridabad.
24. Sh. Kiran W. Deshkar, DD (E), CIB&RC, DPPQ&S, Faridabad.
25. Ms. SnehaPoddar, DD (Chem), CIB&RC, DPPQ&S, Faridabad.
26. Dr. Vandana Pandey, AD (PP), CIB&RC, DPPQ&S, Faridabad.
27. Sh. AvnishTomar, AD (Chem), CIB&RC, DPPQ&S, Faridabad.
28. Sh. Niraj Kulshrestha, LO, CIB&RC, DPPQ&S, Faridabad.
29. Ms. Raunaq, AD (Chem), CIB&RC, DPPQ&S, Faridabad.
30. Dr. Vandana Seth, Joint Director (Chem), CIL

ANNEXURE-II

ACTION TAKEN REPORT ON 57th CIB MEETING:

The 57th meeting of Central Insecticide Board was held on 15.11.2019 in the DGHS conference Room No. 445, 'A' Wing, Nirman Bhawan, New Delhi under the chairmanship of (Prof) Dr. Sanjay Tyagi, Director General of Health Services, Ministry of Health & Family Welfare.

The Chairperson welcomed the participants. After formal self-introduction by the participants, Chairperson requested the Secretary CIB&RC to present the agenda. After detailed deliberation on each issue, the following decision were taken.

The action taken on various agenda items is as under:

S. No.	Subject	Decision	Action taken
Agenda Item No. 1	**Confirmation of minutes of 56th meeting of CIB held on 07.05.2019**	As no comments were received on the minutes, the minutes of 56th meeting of Central Insecticide Board were confirmed.	No action required
Agenda Item No. 2	**Follow up action on the decision of 57th meeting of the CIB**	The Board noted the follow up actions on the decisions of 56th and 57thmeeting with satisfaction and appreciated the efforts made to complete the action in a time bound manner.	Noted
Agenda Item No. 3	**Progress report of the Registration Committee, Central Insecticides Laboratory and Regional Pesticide Testing Laboratories**	(1**) Progress report of the registration committee:** Hon'ble Chairperson appreciated that all the categories of applications of registration including endorsements are being received and processed completely through the online system in the Secretariat of CIB&RC. Clear and transparent processes will lead to better regulatory results. He appreciated the efforts made by the Secretariat. The Members were further apprised of the new pesticides and formulations approved/ registered by the RC u/s 9(3) of the Insecticides Act, 1968 since the last Board meeting. The board noted the progress made by the CIB&RC in registering of newer and safer formulations. The lists approved by the	Noted

		Registration Committee for registration under section 9 (3) of the Insecticides Act,1968 of new pesticides and formulation is at Annexure-III, new pesticides and formulation of already registered pesticides is at Annexure-IV, and New & already registered Bio-pesticides is at Annexure-IV respectively. **(Il.)Progress Report of Central Insecticides Laboratory (CIL):** The Board noted the progress of the CIL and RPTL' s with satisfaction (**111.) PROGRESS REPORT OF TECHNO-LEGAL CELL:** The Board noted the progress of the Techno-legal Cell with satisfaction.	Noted Noted
Agenda Item No. 4	**Consideration of proposals for New molecules Inclusion in the Item Schedule to the Insecticides Act, 1968.**	The Board deliberated the agenda in details and decided to include the molecules in the Schedule to the Insecticide Act, 1968 as per Annexure –VI.	DAC&FW has been informed for further necessary action.
Agenda Item No. 5	**New Packing approved by the RC**	The agenda was deliberated in details and board noted the progress made by the CIB&RC in approving new packing for new formulation and additional packaging for registered pesticides as per details at Annexure-VII.	No action required.
Agenda Item No. 6	**Waiting period /pre-harvest interval between application and harvestw.r.t new formulation u/s 9 (3) and label expansion of already registered for formulation.**	The Members were apprised of the new formulations u/s 9(3) registered by the RC since the last Board meeting. The agenda was deliberated in details and board noted the progress made by the CIB&RC in registering of newer and safer formulations. The lists of label expansion of registered formulation along with waiting period is at Annexure-VIII .	No action required

Agenda Item No. 7	**Consideration of cases of application for enhancement of shelf-life from one year to two years registered u/s 9 (3) of the Insecticides Act,1968 .**	The board deliberated the list of applications received in the Sectt. CIB&RC for enhancement of shelf-life (provisional) from one year to two years for the products registered u/s 9 (3) of the Insecticides Act,1968 and granted permission to process the same as per guidelines.	No action required
Agenda Item No. 8	**Regulation of multi-use Insecticides and addition Agenda Connectedregarding (Follow up action agenda item No. 8 of 56th CIB meeting) (As an additional Agenda Note)**	As a follow up action, the Board members were apprised about the complete details on the regulations pertains to import of multi-use and the status of the court cases regarding the import of multi-use pesticides. The Board noted the information.	No Action required
Agenda Item No. 9	**Classification of Pesticides on their toxicity**	The Board deliberated the agenda in details and decided to go ahead with the recommendation of the Sub-Committee.	DAC&FW has been informed for further necessary action.
Agenda Item No. 10	**Consideration of Amendments in the rules vide Notification issued by M/o Agriculture and Farmers Welfare.**	The board appreciated the effort made by the Government of India for reduction of number of forms under the Insecticides Act, 1968 and Rules 1971. The agenda was deliberated in details and approved the Gazette Notification G.S.R. 782(E) dated 11th October, 2019 issued by the Government of India for amendment of Rules w.r.t various forms required under the Insecticides Act. The notification is Annexed at Annexure-XI.	No Action required
Agenda Item No.11	**Any other Items With the permission of Chair**.	In closing Secretary (CIBRC) expressed his gratitude to all participants for their full cooperation and contribution to the 57th meeting for participation.	-

Annexure-III

LIST OF NEW PESTICIDES AND THEIR FORMULATIONS APPROVED BY THE REGISTRATION COMMITTEE UNDERSECTION 9(3)

Sr.No.	Name of molecule	Company Name	U/S	RC Number
1	*Brodifacoum 0.005% BB*	M/s Syngenta India Ltd., Pune	Formulation import without registering technical of the product under section 9(3)	411
2	*Mesotrione Technical 74% w/w min. wet basis (on theoretical dry weight basis,the purity is 94% w/w min.)*	M/s Syngenta India Ltd.	Registration for import of u/s 9(3)	413
3	*Mesotrione 2.27% w/w + Atrazine 22.7% w/w SC*	M/s Syngenta India Ltd.	Formulation u/s 9(3)	413
4	*Cyflufenamide 5% w/w EW*	M/s Dhanuka Agritech Ltd.	Formulation import (without registering technical) under section 9(3)	413

Annexure -IV

LIST OF NEW FORMULATIONS FOR ALREADY REGISTERED PESTICIDES APPROVED BY THE REGISTRATION COMMITTEE UNDER/SECTION 9(3) OF THE INSECTICIDES ACT, 1968

Sr. No.	Name of molecule	Company Name	U/S	RC Number
1.	*Fipronil Technical 95% w/w min.*	M/s Willowood Chemical Pvt. Ltd.,	9(3) (TI vsTIM)	411
2.	*Thiamethoxam Technical 98% w/w min.*	M/s Willowood Chemical Pvt. Ltd.,	9(3) (TI vsTIM)	411
3.	*Carbendazim Technical 98% w/w min.*	M/s Willowood Chemical Pvt. Ltd.,	9(3) (TI vsTIM)	411
4.	*Metsulfuron Methyl Technical 96% w/w min.*	M/s Willowood Chemical Pvt. Ltd.,	9(3) (TI vsTIM)	411
5.	*Glyphosate potassium salt 46% w/w SL* formulation.	M/s Monsanto India Ltd.	Formulation import without registeringtechnical) under section 9(3)	411
6.	*Transfluthrin* 1%+ *Cypermethrin* 0.25%Multi Insect Killer spray	M/s Godrej Consumer Products Ltd.,	Formulation u/s 9(3)	411
7.	*Transfluthrin* 0.08% Aerosol (household insecticide)	M/s Godrej Consumer Products Ltd.,	Formulation u/s 9(3)	411
8.	*Chlorothalonil 40% w/w + Difenconazole 4% w/w SC*	*M/s Syngenta India Ltd.,*	Formulation *u/s 9(3).*	413
9.	*Glyphosate Technical 95% w/w min.*	*M/s Krishi Rasayan Export Pvt. Ltd.,*	*(TI vs TIM)under section 9(3).*	413
10.	*Chlorothalonil Technical 96% w/w min.*	*M/s Willowood Chemical Pvt. Ltd.,*	*(TI vs TIM)under section 9(3).*	413
11.	*Gibberellic acid 40% w/w WSG*	*M/s Universal Speciality Chemicals Pvt. Ltd.,*	*under section 9(3) (FIM vs FIT) category.*	413
12.	*Butachlor Technical 95% w/w min.*	*M/s Cinochem India Company Pvt. Ltd.,*	*Technical Import under section 9(3) (new source).*	413
13.	*Mancozeb 50% + Thiophanate methyl 25% WG*	*M/s UPL Ltd.*	*Formulation under section 9(3).*	413

Annexure-V

LIST OF NEW & ALREADY REGISTERED Bio pesticides APPROVED BY THEREGISTRATION COMMITTEE UNDER/SECTION 9(3) OF THE INSECTICIDES ACT,1968

Sr.No.	Name of molecule	Company Name	RC Number
1	*Trichoderma harzianum 1.0% WP* undersection 9(3) (Strain designation : IIHR, Th-2, Strain Accession No. ITCC – 6888)	M/s Khedut Beej Nigam,	**411**
2	*Trichoderma harzianum 1.0%WP* under section 9(3) (Strain designation : IIHR, Th-2, Strain Accession No. ITCC – 6888)	M/s Manshya Enviro Biotech Pvt. Ltd.,	**411**
3	*Trichoderma harzianum 1.0% WP* undersection 9(3) (Strain designation : IIHR, Th-2, Strain Accession No. ITCC – 6888)	M/s Dewborn Agro Chemicals	**411**
4	*Trichoderma harzianum 1.0% WP* undersection 9(3) (Strain designation : IIHR, Th-2, Strain Accession No. ITCC – 6888)	M/s Uttam Chemicals Industries	**411**
5	*Trichoderma viride 1.50% WP* under section9(3) (Strain designation : IIHR, Tv-5, Strain Accession No. ITCC No. 6889)	M/s Uttam Chemicals Industries	**411**
6	*Trichoderma viride 1.50% WP*under section 9(3) (Strain designation : IIHR, Tv-5, Strain Accession No. ITCC No. 6889)	M/s Siddaganga Oil and Bio Pesticides LLP	**411**

7	*Trichoderma viride 1.00% WP* under section9(3) (Strain designation : TNAU TV-1, Strain Accession No. ITCC No. 6914)	M/s Apex Bio Science	411
8	*Trichoderma viride 1.00% WP* under section9(3) (Strain designation : TNAU TV-1, Strain Accession No. ITCC No. 6914)	M/s Dewborn Agro Chemical	411
9	*Trichoderma viride 1.00% WP*under section 9(3) (Strain designation : TNAU TV-1, Strain Accession No. ITCC No.6914)	M/s Rajcho Pesticides and Chemicals	411
10	*Verticulliumchlamydosporium 1.0% WP*under section 9(3) (Strain designation: IIHR VC-3, Strain Accession No. ITCC 6898).	M/s T. Stanes& Company Ltd.,	411
11	*Pseudomonas fluorescens 1.0% WP* under section 9(3b)(Strain : IIHR, PF-2, Accession No. ITCC No. B0034).	M/s Oshnic Crop Science Ltd.,	412
12	*Metarhiziumanisopliae 1.0% WP* undersection 9(3) (Strain designation IPL/KC/44 Strain Accession No ITCC 6895).	M/SKR Agrotech	412
13	*Metarhiziumanisopliae1.15% WP* under section 9(3b). (Strain Designation AAU Strain Accession No.NAIMCC-F-03037).	M/s Curative Microbes Pvt. Ltd	413
14	*Verticilliumchlamydosporium 1.00% WP* under section 9(3) (Strain designation: IIHR Vc-3	M/s Siddaganga Oil and Bio Industries LLP	413

	StrainAcc. No. ITCC 6898)		
15	*Verticillium lecanii 1.15%WP* under section 9(3) (Strain designation AS-MEGH-VL ACC. No. MCC 1028)	M/s Aaryaman Sugar & Seeds Pvt. Ltd	413
16	*Beauveria bassiana 1.15% WP* formulation under section9(3).	M/s Shree Pesticide Pvt. Ltd.,	413
17	*Beauveria bassiana 1.15% WP* formulationunder section 9(3).	M/s HCM Agro Products Pvt. Ltd	413
18	*Trichoderma viride 1.00%WP* under section 9(3) (Strain designation : TNAU-TV-1, Strain Accession No. ITCCNo. 6914)	M/s HCM Agro Product Pvt. Ltd.,	413
19	*Trichoderma viride 1.50% WP* under section9(3) (Strain designation: IIHR TV-5 Strain Acc. No. ITCC 6889).	M/s International Biotech,	413
20	*Trichoderma harzianum1.0% WP* under section 9(3) (Strain designation: IIHR Th-2 Strain Acc. No. ITCC6888).	M/s Total Agri Care Concern Pvt. Ltd	413
21	*Verticillium lecanii 1.15% WP* under section 9(3). (Straindesignation AS-MEGH-VL Acc. No. MCC 1028)	M/s SKR Agrotech	413
22	*Beauveria bassiana 1.15% WP* formulation under section9(3). (Strain designation BB- ICAR-RJP Acc. No. MCC 1022)	M/s Microplex India	413
23	*Beauveria bassiana 1.15% WP* formulation under	M/s SKR Agrotech	413

	section9(3). (Strain designation BB- ICAR-RJP Acc. No. MCC 1022)		
24	*Bacillus thrungiensisvarkurstaki (Serotype 3a3b3c) 0.5% WP* under section 9(3) (Strain designation DOR BT-1, Accession No. NAIMCC-B-01118)	M/s MaaBhagwati Biotech & Chemicals	413
25	Bacillus *Trichoderma viride 1.50% WP*under section 9(3) (Strain designation IIHR-TV-5, Strain accession No. ITCC No. 6889)	M/s Shree Pesticides Pvt. Ltd	413
26	*Trichodermaviride 1.00% WP* under section 9(3) (Strain designation ITCC No. 6914).	M/s NavalsinghSahakariSahakkarKarkhanaMaryadit	413
27	*Metarhiziumanisopliae 1.0% WP* undersection 9(3) (Strain designation IPL/KC/44, Strain Accession No. ITCC-6895).413	M/s Microplex India	413
28	*Beauveria bassiana 1.15% WP* formulation under section 9(3).	M/s Sarthak Agro Laboratories,	413
29	Bacillus *Trichoderma viride1.50% WP* under section 9(3) (Strain designation IIHR-TV-5, Strain accession No. ITCCNo. 6889)	M/s Total Agri Care Concern Pvt. Ltd.	413
30	*Verticillium lecanii 1.15% WP* under section 9(3). (Straindesignation AS-MEGH-VL Acc. No. MCC 1028)	M/s Microplex India	413

31	*Trichoderma harzianum1.0% WP* under section 9(3). (Strain designation IIHR Th-2 Strain accession No. ITCC6888)	M/s Parijat Industries (India) Pvt. Ltd.	413
32	*Trichoderma harzianum 1.0% WP* undersection 9(3). (Strain designation IIHR Th-2 Strain accession No. ITCC 6888)	M/s AgrivaAgro Tech	413
33	Bacillus *Trichoderma viride1.50% WP* under section 9(3) (Strain designation IIHR-TV-5, Strain accession No. ITCC No. 6889)	M/s Curative Microbes Pvt. Ltd.	413
34	Bacillus *Trichoderma viride1.00% WP* under section 9(3) (Strain designation TNAU TV-1 strain accession no. 6914).	M/s Aaryaman Sugar and Seeds Pvt. Ltd.	413

Annexure- VI

Applications for import of multi-use insecticides (Boric Acid) 411 RC

S.No.	Applicant (M/s)	Decision of the Registration Committee
1.	M/s Welsuit Glass & Ceremic Pvt. Ltd.	Approved of 650 M.T. of Boric Acid for the use in manufacturing of Ceramics Glaze Mixture Frit
2.	M/s Artek Surfin Chemicals Ltd	Approved of 25 M.T. of Boric Acid for the use in manufacturing of Electroplating chemicals and compositions
3.	M/s Futura Ceramics (P) Ltd	Approved of 200 M.T. of Boric acid for the use in manufacturing of Ceramic Glaze Mixture Frit.

Applications for import of multi-use insecticides (Other than Boric Acid) 411 RC

S.No.	Applicant (M/s)	Decision of the Registration Committee
1.	M/s Mahavir Expochem Limited	Approved of 300 M.T. of Sodium Cyanide for the use in manufacturing of Electroplating Chemicals
2.	M/s Mahavir Expochem Limited	Approved of 80 M.T. of Potassium Cyanide for the use in manufacturing of Electroplating Chemicals
3.	M/s Excel Crop Care Ltd.	Approved of 1150 M.T. of Yellow phosphorus for manufacturing of Aluminium Phosphide and Zinc Phosphide
4.	M/s Reliance Industries Limited	Approved of 115 M.T. of Di-methyl Di-sulphide for the use in manufacturing of Ethylene, Propylene Benzene, Toulene, Linear Alkyl Benzene and other petrochemical items
5.	M/s Yamuna Metachem	Approved of 110 M.T. of Sodium Cyanide for the use in manufacturing of Brass Salt, Copper Cyanide, Copper Salt, Zinc Cyanide and Zinc Salt
6.	M/s Benzo Chem Industries Private Limited	Approved of 235 M.T. of Sodium Cyanide for the use in manufacturing of 2,5 Dimethyl Acetyl Chloride, 2,4 Dichloro Phenyl Acetic Acid, 2,4 Dichloro Phenyl Acetyl Chloride, Ortho Methyl Phenyl Acetic Acid, Ortho Methyl Benzyl Cyanide, Para Chloro Benzyl Cyanide, Meta Chloro Benzyl Cyanide, Para Chloro Phenyl Acetic Acid, 2,4,6 Mwthyl Phenyl Acetyl Chloride, Ortho Chloro Phenyl Acetic Acid
7.	M/s Tina Organics (P) ltd.	Approved of 70 M.T of Yellow Phosphorus for the use in manufacturing of Phosphorus Oxychloride (POCl3)
8.	M/s Best Crop Science LLP	Approved of 50 M.T. of Sodium Cyanide for the use in manufacturing of Lamba Cyahalothrin Technical
9.	M/s Nishant Aromas	Approved of 12 M.T. of Eucalyptus Oil 60% to 80% for the use in Manufacturing of Perfumery

		Compounds Essential oils, Organic Chemicals
10.	M/s Grauer & weil (India) Ltd.	Approved of 120 M.T. of Sodium Cyanide for manufacturing of Metal Finishing & Electroplating chemicals

Applications for import of multi-use insecticides (Boric Acid) 412 RC

S.No.	Applicant (M/s)	Decision of the Registration Committee
1.	M/s The Dharamsi Morarji Chemical Co. Ltd.	Approved of – 50 M.T. of Boric Acid for the use in manufacturing of Zinc Borate
2.	M/s Grauer & weil (India) Ltd.	Approved of 100.– M.T. of Boric Acid for the manufacture of Metal Finishing Chemicals and Electroplating Chemicals

Applications for import of multi-use insecticides (Other than Boric Acid) 412 RC

S.No.	Applicant (M/s)	Decision of the Registration Committee
1.	M/s Bayer Vapi Private Limited	Approved of 400 M.T. of Sodium Cyanide for the use in the manufacturing of Cypermethrin Alphamethrin, Deltamethrin, Acrinamethrin Cyfluthrin & beta Cyfluthrin
2.	M/s K. A. Malle Pharmaceuticals Ltd.	Approved of 200 M.T. of Thiourea for the use in manufacturing of Mebendazole and Albendazole
3.	M/s Navin Fluorine International Limited.	Approved of 10 M.T. of 2,6 Dichlorobenzonitrile for the use in the manufacturing of 2,6 Dichlorobenzonitrile & 2-fluro 6- Hydroxybenzoic Acid
4.	M/s Speciality Organics Pvt. Ltd.	Approved of 200 M.T. of 3-Iodo -2-Propynylbutylcarbamate (IPBC) for manufacturing of Metazolone
5.	M/s Sarthi Chem Private Limited	Approved of 2.0 M.T. of Chloropicrin Technical 99.5% Min. for the use in manufacturing of Methyl Bromide Technical
6.	M/s UPL Ltd.	Approved of 200 M.T. of Sodium Cyanide for the Trading Purpose

Applications for import of multi-use insecticides (Other than Boric Acid) 412 RC

S.No.	Applicant (M/s)	Decision of the Registration Committee
1.	M/s Inventys Research Company Pvt. Ltd.	Approved 40 MT of Sodium Cyanide for the use in manufacturing of s-Methyl Phenyl Glycine Methyl Ester.
2.	M/s UPL LTD.	Approved 1359 MT of Sodium Cyanide for the use in manufacturing of Glufosinate Technical
3.	M/s Amjey Chem Trade Pvt Ltd	Approved 94 MT of Di Methyl Di Sulfide for use in the refinery at Numaligarh, Assam

4.	M/s Asian Chemtech Pvt. Ltd.	Approved 700 MT of Sodium Cyanide for the trading purpose
5.	M/s Meghmani Organics Limited	Approved 261 MT of Sodium Cyanide for the use in manufacturing of Cypermethrin Tech.
6.	M/s Sarthi Chem Tech Pvt. Ltd.	Approved 102.44 MT of Yellow Phosphorous for the use in manufacturing of Aluminium Phosphide 6%, 15%, 56%, & 77.5% Tablet
7.	M/s Divis Laboratories Limited	Approved 180 MT of Sodium Cyanide for the manufacturing of Dextromethorphan HBR(Sigma), Dextromethorphan HBR Intermediates (Sigma - I with ISA & ISB) and Irbesartan
8.	M/s Metco Resources	Approved 27388.32 MT of Nitrobenzene for supplying to the industries for manufacturing of Resist salt & Metallic Acid
9.	M/s Asian Chemtech Pvt. Ltd	Approved 300 MT of potassium Cyanide for trading purpose
10.	M/s Godrej Agrovet ltd.	Approved 32 MT of 2,6-Dichloro Benzonitrile for the use in manufacturing of Herbicide Pyrithiobac Sodium Technical
11.	M/s Harshlaxmi Chemisolv	Approved 680.50 MT of Nitrobenzene for the use in manufacturing of Metanilic Acid, Resist Salt, Rubber Chemicals, Dyes etc
12.	M/s Honour Lab Ltd.	Approved 169.26 MT of Sodium Cyanide for the use in manufacturing of Amino butyramide
13.	M/s S D Fine-Chem Limited	Approved 50 MT of Thiourea for the use in Electroplating Process of Copper
14.	M/s Rathoure Trading Company	Approved 1200 MT of Sodium Cyanide for Trading Purpose
15.	M/s Black Rose Industries Limited	Approved 12432 MT of Acrylonitrile for the use in manufacturing of Acrylamide, Polyacrylamide (Liquid/ Powder) and N-Methylol Acrylamide
16.	M/s Tagros Chemicals India Private Limited	Approved 303 MT of Sodium Cyanide for the use in manufacturing of Cypermethrin, Alphacypermethrin and Deltamethrin Technical
17.	M/s SNF Flopam India Pvt. Ltd.	Approved 10000 MT of Acrylonitrile for the use in manufacturing of Acrylamide, Polyacrylamide Powder, Polyacrylamide Liquid and Polyacrylamide emulsions
18.	M/s Bharat Rasayan limited	Approved 290 MT of Sodium Cyanide for the use in manufacturing of Cypermethrin Tech., Fenvalerate Tech., Para Chloro Benzyl Cyanide, Lambda Cyhalothrin Tech., Para Chloro Phenyl Acetic acid
19.	M/s Ambic Organic	Approved 720 MT of Yellow Phosphorous for the use in manufacturing of Aluminium Phosphide and Zinc Phosphide

20.	M/s Chemtech Intermediates Pvt. Ltd.	Approved 330 MT of Sodium Cyanide for the use in manufacturing of Phenyl Acetonitrile / Phenyl Acetic Acid
21.	M/s UPL Ltd.	Approved 30 MT of Sodium Cyanide for the Trading Purpose
22.	M/s D.D. Shah Fragrances Pvt. Ltd.	Approved 30 MT of Eucalyptus Oil for the use in Manufacturing of Flavouring Compounds and reconstituted essential oils
23.	M/s Hemani Industries Limited	Approved 673 MT of Ethylene Dichloride for the use in manufacturing of Meta Phenoxy Benzaldehyde
24.	M/s Hemani Industries Limited	Approved 1900 MT of Acrylonitrile for the use in manufacturing of Cypermetric Acid Chloride
25.	M/s Hemani Industries Limited	Approved 783 MT of Ethylene Dichloride for the use in manufacturing of Meta Phenoxy Benzaldehyde
26.	M/s Grauer & Weil (India) Ltd.	Approved 10 MT of Thiourea for the use in manufacturing of Metal Finishing Brighter Additives
27.	M/s Intech Organics Ltd.	Approved 1000 MT of Yellow Phosphorous for the use in manufacturing of Aluminium Phosphide
28.	M/s Hindustan Chemicals Company	Approved 1000 MT of sodium Cyanide for trading purpose
29.	M/s Lucky Chemical Industries	Approved 1357.26 MT of Yellow Phosphorus for the use in manufacturing of Phosphorous Trichloride, Phosphorous Oxychloride and Phosphorous Pentoxide

Applications for import of multi-use insecticides (Boric Acid) 413 RC

S.No.	Applicant (M/s)	Decision of the Registration Committee
1.	M/s Spire Cera Frit Pvt. Ltd.	Approved of 500 M.T. of Boric Acid for the use in manufacturing of Ceramics Glaze Mixture Frit
2.	M/s Supreme Glazes Pvt. Ltd	Approved of 1000 MT of Boric Acid for the use in manufacturing of Ceramics Glaze Mixture / Frit
3.	M/s Artek Surfin Chemicals Ltd.	Approved of 50 M.T. of Boric Acid for the use in manufacturing of Electroplating chemicals and compositions

Annexure- VII

List of new packing approved by RC from 01.11.2019 to 30.04.2020.

A. New/Alternate Packing for New Formulation:			
RC No.	**Name of Company**	**Name of the Product**	**Type of Packing**
412th	M/s Godrej Consumer Products Ltd.,	Transfluthrin 1.6% Liquid Vaporiser.	Endorsement for alternate packing of single refill (45 ml) in printed carton as secondary packing and 120 units of secondary pack cartons will be packed in 5 ply corrugated box of specification IS 2771 (Part-I) – 1990 as transport packing
412th	M/s Nichono India Pvt. Ltd.,	Buprofezin Technical 98% w/w min.	Endorsement for additional transport packing of capacity 200 kg in fiber board drum for import
413th	M/s Syngenta India Ltd.,	Thiamethoxam 12.6% + Lambda cyhalothrin 9.5% w/w ZC	Endorsement for alternate packing in PET container of capacity 10 ml, 40 ml, 80 ml, 100 ml, 200 ml, 500 ml and 1000 ml as per IS 13123:2000 . Primary pack of capacity 10ml, 40ml, 100ml, and 200ml shall be further packed in duplex board monocarton as secondary packing. There shall be no secondary packing for 500ml and 1000ml pack size. Secondary pack shall be further packed in CFB box as transport packing.
413th	M/s Syngenta India Ltd.,	Lambda cyhalothrin 4.9% (capsule Suspension).	Endorsement for alternate packing in PET container of capacity 100 ml, 250 ml, 500ml and 1000 ml as per IS 1312:2000.Primary pack of capacity 100ml and 250ml shall be further packed in duplex board monocarton as secondary packing. There shall be no secondary packing for 500ml and 1000ml pack size. Secondary pack shall be further packed in CFB box as transport packing.

Annexure – VIII

List of Label Expansion u/s 9(3) formulations along with waiting period

Sl. No.	R.C. No.	File No.	Company Name	Product Name	Crop	Waiting Period (Days)
Insecticides						
1.	411	17-450/2012-CIR-II	M/s Bayer Crop Science Ltd., Thane (Maharashtra)	Flubendiamide 39.35% w/w SC	Maize Gherkin Cardamom	14 05 15
2.	411	17-43/2017-CIR-II	M/s Bayer Crop Science Ltd., Thane (Maharashtra)	Fipronil 40% + Imidacloprid 40% WG	Groundnut	76
3.	413	17-283/2015-CIR-II	M/s Bayer Crop Science Ltd., Thane (Maharashtra)	Deltamethrin 11% EC	Onion	05
4.	413	17-750/2016-CIR-II	M/s Bayer Crop Science Ltd., Thane (Maharashtra)	Imidacloprid 70% WG	Potato	54
5.	414	10044-END/2019-CIR-II	M/s ADAMA India Pvt. Ltd., Hyderabad	Fluensulfone 2% w/w GR	Pomegranate	91
6.	414	8459-END/2017-CIR-II	M/s Bayer Crop Science Ltd., Thane (Maharashtra)	Spirotetramat 15.31% w/w OD	Grapes	60
Herbicide/PGR						
1	413	6924-TI/9(3)/2018-CIR-II	M/s Syngenta India Ltd	Mesotrione 2.27% w/w + Atrazine 22.7% w/w SC	Maize Sugarcane	42 190
2	413	9194-FI/9(3)/2018-CIR-II	M/S Tropical Agrosystem (India) Pvt	1-MCP 3.3% VP (1-Methyl CycloPropen)	Apple (Post Harvest)	One day (Between treatment and use)

Fungicide						
1.	411	F.No.9394-END/2018	M/s DhanukaAgritech Ltd	Carbendazim 25% + Flusilazole 12.5% SE.	Apple	9
2.	413	F.No: 8810-F/9(3)/2017	M/s Syngenta India Ltd	Chlorothalonil 40.0%w/w + Difenoconazole 4.0%w/w SC	Tomato Chilli	3
3.	413	F.No.7216-FI 9(3)/2016-CIR-II	M/s DhanukaAgritech Ltd	Cyflufenamid 5 % EW	Chilli Grapes	5 25
4.	413	F.No.9355-END	M/s UPL Ltd.	Mancozeb 50% + Thiophanate methyl 25% WG	Rice	34
5.	413	F.No.5940-FI/9(3)/2015-CIR-II	M/s BASF India Ltd	Triticonazole 80 g/l+ Pyraclostrobin 40g/l FS	Wheat	Seed dresser
6.	413	F.No.9808-END/2018-CIR-II	M/s Bayer Crop Science Ltd.	Tebuconazole 50% WG + Trifloxystrobin 25% WG	Cowpea	20
7.	413	F.No.9126-END	M/s DhanukaAgritech Ltd	Kasugamycin 5%+ Copper oxychloride 45% WP	Pomegranate	10
8.	413	F. No-9840-END/2018	M/s Bayer Crop Science Ltd.	Fluopicolide 6.25% + Propamocarb hydrochloride 62.5% SC	Cucumber	5

Annexure - IX

Enhancement of shelf life u/s 9(3)

S. No.	Applicant (M/s)	Product Name	RC No.
1.	M/s Parijat Industries India Pvt. Ltd.	Pyriproxyfen 10% + Bifenthrin 10% EC.	413
2.	M/s Tagros Chemical India Pvt. Ltd.	Pyriproxyfen Technical 98% w/w min	413

ANNEXURE -X

Name of the Molecules to be included in the Schedule of the Insecticides Act,1968

Sr No	File No	Name of the Applicant	Common Name	IUPAC/Chemical Abstract Name	CAS/CA SRN no	Bio-efficacy	Toxicity	Status of Registration in other Countries	Decision
1	3- /2017CIR-11 and Computer F. NO.3124/InclusionInSchedule	M/Shukla Ashar Impex Pvt. Ltd. Rajkot	Long Chain Alkyl poly glucoside (C8-C16) ,Agro Clean Charger/ AGNIQUE PG The applicant submitted further specify the name of the product as	alkyl glucoside Typical formula C16H32 O6 (coconut oil based)	CAS RN N/A	Insecticide	Skin Contact – non irritant Ingestion-Non toxic Inhalation – Not applicable	As per the literature submitted by the applicant AGNIQUE PG which has EPA approval states that AGNIQUE PG	Applicant vide E-mail dated 19.05.2020 has requested to withdraw the application. **Request for withdrawal of application is accepted.**

			lauryl glucoside, (C18 H36 O6) CAS No. 1106615-47-9 which is totally different than the molecules deliberated in previous the meeting 55th					surfactant was reassessed in May 2006 and granted exemption from tolerance when used as pesticide inert ingredients for application	
2	3136/InclusionInSchedule	M/s Imerys Performance and Filtration	DIATOMACEOUS EARTH	Siliceous Earth	61790-53-2	Acaricide and insecticide	Acute Oral LD50 for Rats >3160mg/kg	Registered with EPA, USAfor Control of beetles,	Board observed that diatomaceous earth containing

		Minerals Pvt Ltd.					Acute Dermal LD50 for Rats - Produced moderate to low toxicity for toxicity category of III Inhalation LC50 for Rat not test animals died in acute inhalation study as a result of exposure to 40.0% silica gel . Skin Irritant	moths, weevils etc.	80 to 90% silica is used as raw material/ inert material in various pesticides and non-pesticide formulations and hence did not approve.

							(Rabbit) - moderate to low toxicity Eye Irritant - moderate to low toxicity		
3	3144/Inclusion In Schedule	Shukla Ashar Impex Pvt. Ltd.	Garlic Oil (Allium sativum)	Diallyl disulphide	8000-78-0	Bio-efficacy of (Allicin) garlic extract against cotton sucking insects	No Toxicity Data	Not Registered	Differed for want of more information on registration status, marker chemical which is active in Garlic oil having Insecticidal properties and toxicity data of active substance.

4	3145/Inclusion In Schedule	Syngenta India Limited	Cyclobutriflura m	N-[2-(2,4-dichlorophenyl) cyclobutyl)-2-(trifluoromethyl) nicotinamide, 80-100% (1S,2S)-enantiomer	1460292 -16-3	Used as Nematicide	Acute Oral(Rat): LD50 >2,000mg/k g, Acute dermal (rat): LD50>2000 mg/kg , Acute inhalation(ra t): LC50 > 5.08 mg/l Acute dermal irritation (Rabbit): slight irritation, Actual Eye Irritation (Rabbit): slight irritation, Skin sensitization : Non-sensitizer	New Nematicide, still in the preliminary stages of development and the data generation is under process	Approved

5	3142/Inclusion In Schedule	Bharat Insecticides Limited	Maltodextrin	Non allocated	9050-36-6	Insecticide	Acute Oral (Rat): LD50 >2,000mg/kg , Acute dermal (Rat):LD50> 2000mg/Kg Acute dermal irritation(Rabbit): Non-irritant to Rabbit skin	Not Registered	The Board observed that the product is used in food industry as food additive and preservative and hence did not approve.
6	3138/Inclusion In Schedule	Biostadt India Ltd	Acynonapyr	3-endo-[2-propoxy-4-(trifluoromethyl) phenoxy]-9-[5-(trifluoromethyl) -2-pyridyloxy]-9-azabicyclo[3.3.1]nonane.	[1332838-17-1] S	Used as Insecticide	Acute Oral (Rat): LD50 >2,000mg/kg, Acute dermal (rat): LD50>2000 mg/kg , inhalation(rat): LC50 > 4.79 mg/L	Registered in Japan and Registration under process in Korea	Approved

							Skin Irritation Dermal (Rabbit): Not irritant, Eye Irritation (Rabbit): Not-irritant, Skin sensitization Dermal – Guinea Pig : Negative		
7	3140/ Inclusion In Schedule	Biostadt India Ltd	Picarbutrazox	tert-butyl (6-{(Z)-[(1-methyl-1H-5-tetrazol)(phenyl)methylene]-aminooxymethyl}-2-pyridyl)carbamate.	[500207-04-5]	Used as Fungicide with translaminar activity for controlling Downy mildew in various crops	Acute Oral LD50 Rat->2,000mg/kg , Acute dermal (rat): LD50>2000 mg/kg , inhalation(rat): LC50 > 5.20 mg/L, Acute Dermal Irritation(Ra	Registered in Japan and Registration under process in U.S.	Approved

							bbit): Not Irritant Acute Eye Irritation (Rabbit): Slight Irritant, Skin sensitization Guinea Pig : Negative		
8	3146/Inclusion In Schedule	PI Industries Ltd.	Flometoquin	2-ethyl-3,7-dimethyl-6-[4-(trifluoromethoxy)phenoxy]-4-quinolyl methyl carbonate	875775-74-9	New Insecticide	Acute Oral Toxicity(LD50) - Rat (Female): 50- 300 mg per kg Acute Dermal Toxicity(LD50) - Rat (Female):933.03 mg per kg	Registered in Japan	Approved

							Inhalation Toxicity LC50 Rat:0.67 mg per L (male rat); 0.93 mg per L (female rat) Skin Irritation (Rabbit): Non-irritating Eye Irritation (Rabbit):Non-irritating.		

Annexure –XI

BYE-LAWS FOR PROCEDURE OF THE CENTRAL INSECTICIDES BOARD (CIB)AS STIPULATED UNDER SECTION 7 OF THE INSECTICIDES ACT, 1968

1. Time and place of the meeting of the CIB

(i) The Committee shall meet at such times as the Chairman may, from time to time, determine, provided that such meetings to be held normally during every six months, preferably in the second week of November and May, every year.

(ii) The meeting may also be convened through video conference (VC)/ electronic mode as and when so directed/desired by the Chairman of the board.

(iii) The Director General of Health Services (DGHS) -*ex-officio* shall be the Chairman of the CIB. The place for such meetings shall be the Ministry of Health and Family Welfare, Nirman Bhavan, New Delhi.

2. Notice for meetings

(i) Not less than 15 clear days notice of every meeting of the CIB shall be given to each member who is for the time being in India.

(ii) A notice may be served on any member either personally or by post under an envelope or through email addressed to each member at his latest address provided to the Secretary (CIB&RC) by the Members of the CIB.

(iii) Any incidental omission to give any such notice to any of the Members shall not in any manner invalidate any such decision or resolution passed at any such meetings.

(iv) Notwithstanding anything contained in (i) above, a meeting of the CIB at which any matter which is considered urgent by the Chairman has to be taken up, may be called at a shorter notice.

3. **Quorum**

(i) No business shall be transacted at a meeting of the CIB unless one third of the total members of the Board are present.

(ii) If within half an hour from the time appointed for holding the meeting, the quorum is not present, the meeting shall adjourn to the afternoon of the same day to be reconvened at such time as Chairman may indicate.

(iii) If at any such adjourned meeting also the quorum is not present within half an hour from the time appointed for holding the meeting, members present at the meeting shall form the quorum.

4. Presidency over meetings

(i) The Chairman of the CIB shall, when present, preside at all such meetings of the CIB.

5. Adjournment of meeting

(i) The Chairman shall with the consent of the members present at any meeting of the CIB adjourn the meeting from such time as deem fit.

(ii) No business other than which is included in the agenda shall be presented at any such adjourned meeting except with the prior consent of the Chairman.

6. Voting

Each member of the CIB shall have one vote. All matters submitted to a meeting of the Central Insecticides Board CIB shall be decided by a majority of the members present and voting there at, and in case of any equality of votes, the Chairman or the person presiding shall have a second or casting vote in addition to the vote to which he may be entitled as a member.

7. Record of business

A record of all business transacted by the CIB shall be maintained through issue of minutes of the proceedings of each meeting of the CIB. The proceedings of each meeting duly approved by the Chairman shall be circulated to all the members for their approval of comments within 10 days of the date on which the minutes are received.

8. Transaction of business by circulation of papers

(i) Any business which it may be necessary for the CIB to transact shall, if the Chairman so directs be dealt with by circulation of papers under registered

cover among all the members for the time being in India at their usual addresses, and any decision or resolution so circulated and approved by a majority of the members signing, shall be as effectual and binding as if it had been taken/passed at a meeting of the CIB.

(ii) When any business is usually referred to the members by circulation, a period of not less than 10 clear days shall be allowed for the receipt of reply from the members. Such period to be counted from the date on which the notice is issued.

9. Functions and powers of the Secretary (CIB&RC)

(i) The Secretary (CIB&RC) shall be the Principal Executive Officer of the CIB and shall whenever directed by the Chairman convene a meeting of the CIB.

(ii) The Secretary shall be responsible for the administration of the affairs of the CIB and shall exercise such executive and administrative powers of the CIB as may be necessary or desired for purpose subject to the provisions of these bye-laws.

(iii) The Secretary shall keep or caused to be kept proper records and minutes of the proceedings of the meetings of the CIB and send copies thereof to all members of the CIB and the competent authority of Government of India in the Ministry/administration concerned in Agriculture. He shall be the principal channel of communication between the CIB on the one hand and the Government of India and the State Governments on the other.

(iv) The Secretary shall take appropriate steps as necessary to give effect to the decisions/resolutions passed by the CIB. The Secretary shall subject to the provision of these bye-laws and such other rules and orders as may apply in particular cases exercise general supervision and disciplinary control over the staff of the Sectt. of Central Insecticides Board and Registration Committee (CIB & RC) and prescribe their duties and function.

10. The chairman if feels expedient, shall have the power to relax any of the provisions of these bye laws in larger public interest.

Annexure-XII

List of Insecticides with brand name in The Schedule of the Insecticides Act

Sl. No.	Sr No in Schedule	Common Name	Brand name	Remark	Notification No
1.	26.	Carbophenothion (Trithion)	Trithion	Brand name	Added originally with the Insecticides Act
2.	44.	Naled (Dibrom)	Dibrom	Brand name	Added originally with the Insecticides Act
3.	48.	Trichlorfon (Dipterex)	Dipterex	Brand name	Added originally with the Insecticides Act
4.	51.	Thiometon (Ekatir)	Ekatin	Brand name	Added originally with the Insecticides Act
5.	55.	EPTC (Eptam)	Eptam	Brand name	Added originally with the Insecticides Act
6.	63.	Azinphos-methyl (Gusathion M)	Gusathion M	Brand name	Added originally with the Insecticides Act
7.	78.	Oxydemeton-methyl(metacyotoxR)	Metacyotox R	Brand name	Added originally with the Insecticides Act
8.	97.	Mevinphos (Phosdrine)	Phosdrin	Brand name	Added originally with the Insecticides Act
9.	98.	Phosmet (Phthalimidomethyl, Imidan)	Imidan	Brand name	Added originally with the Insecticides Act
10.	100.	Pindone (Pival)	Pival	Brand name	Added originally with the Insecticides Act
11.	102.	Pebulate (Tillam)	Tillam	Brand name	Added originally with the Insecticides Act
12.	123.	Camphechlor (Toxaphene)	Toxaphene	Brand name & common name as well	Added originally with the Insecticides Act
13.	132.	Pirimiphos-methyl (Actellic)	Acetellic	Brand name	**Added vide Notification No GSR 9(E)*dated 09/01/74
14.	133.	Pyrazophos (Afugan)	Afugan	Brand name	**Added vide Notification No GSR 9(E)*dated 09/01/74
15.	145.	Bentazone (Basagran)	Basagran	Brand name	**Added vide Notification No GSR 9(E)*dated 09/01/74
16.	146.	Fluchloralin (Basalin)	Basalin	Brand name	**Added vide Notification No GSR 9(E)*dated 09/01/74
17.	147.	Fenobucarb (Bassa)	Bassa	Brand name	**Added vide Notification No GSR 9(E)*dated 09/01/74
18.	148.	Carbendazim (Bavistin)	Bavistin	Brand name	**Added vide Notification No GSR 9(E)*dated 09/01/74

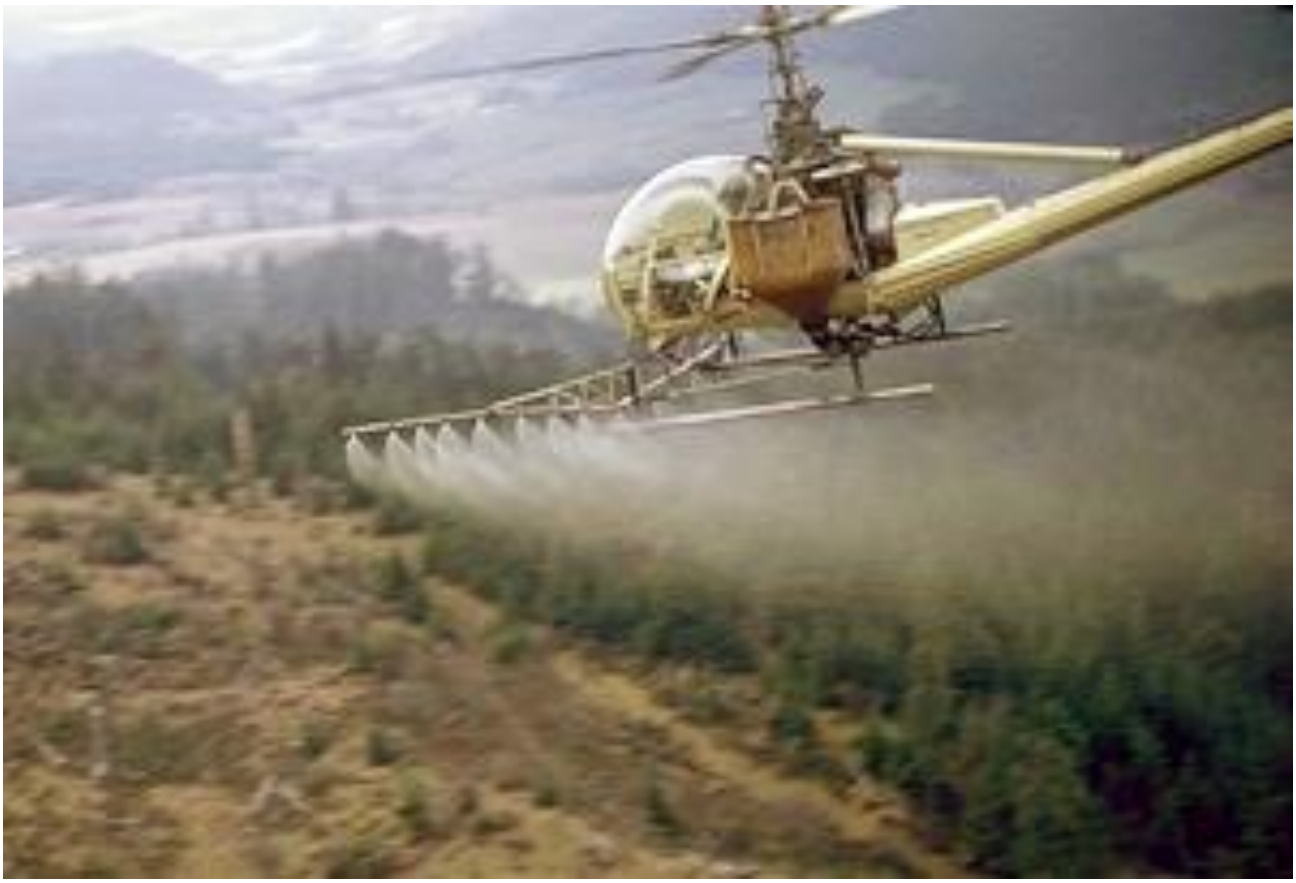
19.	159.	Bufencarb (Bux)	Bux	Brand name	**Added vide Notification No GSR 9(E)*dated 09/01/74
20.	168.	Chlorbufam (BIPC)	BIPC	Brand name & common name as well	**Added vide Notification No GSR 9(E)*dated 09/01/74
21.	185.	Mephosfolan (Cytrolane)	Cytrolane	Brand name	**Added vide Notification No GSR 9(E)*dated 09/01/74
22.	201.	Temephos (Difenphos, Abate)	Abate	Brand name	**Added vide Notification No GSR 9(E)*dated 09/01/74
23.	203.	Daminozide (Alar)	Alar	Brand name	**Added vide Notification No GSR 9(E)*dated 09/01/74
24.	214.	Chlorophacinone (Drat)	Drat	Brand name	**Added vide Notification No GSR 9(E)*dated 09/01/74
25.	215.	Chlorpyrifos (Dursban)	Dursban	Brand name	**Added vide Notification No GSR 9(E)*dated 09/01/74
26.	223.	Ethephon (Ethrel)	Ethrel	Brand name	**Added vide Notification No GSR 9(E)*dated 09/01/74
27.	224.	Chlorfenac; Chlorfenac-sodium (Fenac)	Fenac	Brand name	**Added vide Notification No GSR 9(E)*dated 09/01/74
28.	232.	Tributylphosphorotrithioite (Folex)	Folex	Brand name	**Added vide Notification No GSR 9(E)*dated 09/01/74
29.	233.	Fonofos (Dyfonate)	Dyfonate	Brand name	**Added vide Notification No GSR 9(E)*dated 09/01/74
30.	237.	Noruron (Herban)	Herban	Brand name	**Added vide Notification No GSR 9(E)*dated 09/01/74
31.	243.	EBP (Kitazin)	Kitazin	Brand name	**Added vide Notification No GSR 9(E)*dated 09/01/74
32.	246.	Chlorquinox (Lucel)	Lucel	Brand name	**Added vide Notification No GSR 9(E)*dated 09/01/74
33.	248.	Butachlor (Machete)	Machete	Brand name	**Added vide Notification No GSR 9(E)*dated 09/01/74
34.	267.	Thionazin (Nemafos)	Nemafos	Brand name	**Added vide Notification No GSR 9(E)*dated 09/01/74
35.	268.	Tetramethrin (Neo- Pynamin)	Neo-pynamin	Brand name	**Added vide Notification No GSR 9(E)*dated 09/01/74
36.	272.	Acephate (Orthene)	Orthene	Brand name	**Added vide Notification No GSR 9(E)*dated 09/01/74
37.	283.	Leptophos (Phosvel)	Phosvel	Brand name	**Added vide Notification No GSR 9(E)*dated 09/01/74
38.	286.	Cyhexatin (Plictran)	Plictran	Brand name	**Added vide Notification No GSR 9(E)*dated 09/01/74
39.	287.	Propyzamide (Pronamide, Kerb)	Kerb	Brand name	**Added vide Notification No GSR 9(E)*dated 09/01/74
40.	289.	Propargite (Omite)	Omite	Brand name	**Added vide Notification No GSR 9(E)*dated 09/01/74

41.	296.	Phthalide (Rabicide)	Rabcide	Brand name	**Added vide Notification No GSR 9(E)*dated 09/01/74
42.	297.	Cycloate (Ro-Neet)	Ro-neet	Brand name	**Added vide Notification No GSR 9(E)*dated 09/01/74
43.	300.	Dichlozoline (Selex)	Sclex	Brand name	**Added vide Notification No GSR 9(E)*dated 09/01/74
44.	312.	Tetram (amiton)	Tetram	Tetram is Brand name &Amiton is common name	**Added vide Notification No GSR 9(E)*dated 09/01/74
45.	320.	CECA (Udonkor)	Udonkor	Brand name	**Added vide Notification No GSR 9(E)*dated 09/01/74
46.	322.	Etem (Vegita)	Vegita	Brand name	**Added vide Notification No GSR 9(E)*dated 09/01/74
47.	324.	Mexacarbate (Zectran)	Zectran	Brand name	**Added vide Notification No GSR 9(E)*dated 09/01/74
48.	353.	Pyrinuron (Vacor)	Vacor	Brand name	**Added vide Notification No GSR 32(E)*dated 12/02/80
49.	479.	Imazapyr& its salt (Arsenal)	Arsenal	Brand name	**Added vide Notification No GSR13(E)*dated 05/01/90
50.	509.	Imazalil (Magnate)	Magnate	Brand name	**Added vide Notification No GSR 577(E)*dated 26/08/93
51.	526.	Abamectin (Vertimec)	Vertimec	Brand name	**Added vide Notification No GSR109(E)*dated 03/01/96
52.	534.	Dodemorph (Meltatox)	Meltatox	Brand name	**Added vide Notification No GSR 10(E)*dated 03/01/96
53.	630.	Tepraloxydim(Aramo)	Aramo	Brand name	**Added vide Notification No GSR 291(E)*dated 19/04/2002
54.	869.	Polyoxin(Polyoxin- B,Polyoxin-D, Polyoxin-AL	Polyoxin-AL	Brand name	**Added vide Notification No GSR 111(E)*dated 20/02/2013
55.	633.	Terallethrin	Knockthrin-M108	Brand name	**Added vide notification No. G.S.R. 291 (E) dated 19/04/2002
56.	665.	Flufenzine	SZ1-121	Development Code	** Added vide notification No. G.S.R. 772 (E) dated 18th November, 2002
57.	419.	Clomazone	Dimethazone	Dimethazone	**Added vide Notification No. GSR 858 (E) * dated 12/08/88
58.	420.	Etofenprox	Ethofenprox	Ethofenprox was used before 1988	**Added vide Notification No. GSR 858 (E) * dated 12/08/88

59.	333.	Deltamethrin	Decamethrin	Where decamethrin has been rejected by WHO as common / chemical name	** Added vide Notification No. GSR 574 (E) * dated 06/10/79
60.	331.	Thiobencarb	Benthiocarb	Molecule was introduced as Benthiocarb by M/s Kumiai and recognised by Japan Ministry of Agriculture and Forestry (JMAF)	** Added vide Notification No. GSR 574 (E) * dated 06/10/79

Annexure-XIII

Standard Operating Procedures (SOP) on aerial spraying using aircraft/ helicopter/drone for control of Desert Locust



सत्यमेव जयते

Government of India
Ministry of Agriculture and Farmers Welfare
Department of Agriculture, Cooperation and Farmers Welfare
Directorate of Plant Protection, Quarantine & Storage
N.H.IV., Faridabad-121001 (ppa@nic.in)

CONTENTS

Endorsement

This Standard Operating Procedure (SOP) for Aerial Spraying by aircraft/helicopter/drone is prepared by the Directorate of Plant Protection, Quarantine & Storage, Faridabad in line with FAO SOP on aerial spraying and considering requirement envisaged under the relevant provisions (Rule 43) of the Insecticides Act 1968 and Insecticides Rules 1971 for undertaking safe and effective control of desert locust by aerial spraying using aircraft/helicopter/drone. This SOP will render guidance to the locust officer/ pilot/operators while undertaking aerial control operations. This SOP is duly approved on 18th May, 2020.

-sd-

(Rajesh Malik)

Plant Protection Adviser

Directorate of Plant Protection, Quarantine & Storage,

NH-IV, Faridabad-121001 India

Standard Operating Procedures (SOP) for Desert Locust Control

Objective

The objective of the Standard Operating Procedures (SOP) for Desert Locust Aerial Control is to give concise instructions for effective and safe control operations against the Desert Locust using aircraft/helicopter/drone. Considering the legal requirements envisaged under the relevant provisions of the Insecticides Act 1968 and Insecticides Rules 1971 for undertaking safe and effective control of desert locust by aerial spraying using aircraft/helicopter/drone these instructions required to be followed. These instructions are intended for use by the field staffs who are involved in Desert Locust aerial operations (including Locust Officers and pilots/ operators) to help them avoid dangerous, ineffective or wasteful operations. They are based on the **FAO Desert Locust Guidelines for aerial spraying** where more detailed information and references are available.

The instructions focus on:

- Aerial survey operations
- Aerial spraying of insecticides
- Aerial spray equipment's
- Techniques for safe and efficient operations

1. Control process

A series of steps need to be followed before, during and after aerial survey and control operations.

Aircraft/Helicopter are best for spraying large areas (5000+ ha) the smallest area an aircraft can spray is 100 ha and inaccessible through ground vehicles. Use of drone is useful for spot applications of pesticides such as long trees and in the area where vehicle entry is inaccessible such as acacia plantation, sand dune etc.

PREPARATIONS before control operations

- Determine what type and number of aircraft/helicopter/drone are required for control operations
- Select competent control teams and provide them with training or refresher training. The pilots/Operator shall undergo specialization training including

clinical effects of the insecticides by the experienced locust officer as well as medical toxicologist authorized by the Plant Protection Adviser.

- Check and service of aircraft/helicopter/drone
- Check and test the spray system on the aircraft/helicopter/drone, that commonly needed spare parts are available and aircraft/helicopter/drone are equipped with a GPS-based track guidance system
- Distribute the required quantity and type of insecticides, protective clothing, aviation fuel and pumps to the likely spray sites
- Make sure that aircraft/helicopter/drone is available in the country and can be contracted by the MOA&FW for control operations. Check that airstrips have been maintained

BEFORE aerial control operations

- Determine if aerial control operations are required.
- If so, choose appropriate aircraft/helicopter/drone types, insecticide and spray coverage pattern (barrier or full cover).
- Calibrate the spray system on the aircraft/helicopter/drone in order to assure the correct amount of insecticide is applied in the right way and in the right place.
- All aerial operations shall be notified to the public not less than twenty-four hours in advance through competent authorities
- Animals and persons not connected with the operations shall be prevented from entering such areas for a specific period
- Ensure that local inhabitants are informed about the date, time and location of control operations, so that they can move their livestock, beehives and families to safety.
- Find the wind direction in order to establish a spray direction at right angles to it and demarcate the infested area.
- Make sure that temperature, wind and rainfall conditions are suitable and safe for the aerial control operations.
- Marking of the area shall be the responsibility of the operators
- Washing, decontamination and first-aid facilities shall be provided by the operators

DURING aerial control operations

- Make sure that all staff who are handling or applying insecticide use full protective clothing
- The operators shall use only approved insecticides and their formulations at approved concentration and height
- All other non-spraying personnel, vehicles and equipment are away from the target area to avoid contamination by the sprayed insecticide
- Start at the downwind edge of the target area and spray cross wind (at right angles to the wind direction), moving upwind after each spray pass, making sure to measure the correct track spacing using DGPS, flagmen or other means
- Make an extra spray pass upwind of the target area to prevent under-dosing at the upwind edge
- Stop spraying if the wind drops (less than 1 m/s) or becomes very strong (more than 10 m/s) and wait for the right conditions
- Stop spraying if it starts to rain or seems likely to rain soon
- Stop spraying if the wind direction changes by more than 45 degrees, adjust your new spray line and spray the remaining area

AFTER aerial control operations

- Monitor and record all relevant details on the *FAO Spray Monitoring Form* (Annexure-I).
- Empty any insecticide remaining in the aircraft/helicopter/drone spray tank back into the original insecticide container. Clean and maintain the spray system on the aircraft/helicopter/drone, and store the insecticide and the empty containers in safe places**.**
- Wash yourself and the protective clothing as soon as possible.

2. Ground support team and field equipment

Support Team: one locust officer, two drivers and two vehicles, plus support staff such as assistants and skilled laborers.

Equipment: to be available in each team

- Hand-held GPS *(1)*
- Maps, compass
- FAO forms *(2)*
- Clipboard, paper and pen
- Anemometer
- Hygrometer
- Flags
- Oil sensitive paper to sample ULV droplets
- Bucket and plastic measuring cylinder or jug
- VHF or UHF walkie-talkies for short range ground-to- air communication
- Vibrating tachometer
- Stop watch
- Hand lens (x10)
- Sweep net
- Plastic bags
- Tool kit, first aid kit
- HF radio
- Cages for mortality assessment
- Water and soap for washing
- Sets of protective clothing for all staff handling insecticides

(1) extra batteries, cigarette lighter adapter, remote antenna

(2) Survey & Control Forms and Spray Monitoring Forms

3. Principles of ULV application

Ultra low volume (ULV) spraying uses small amounts of concentrated insecticide. In locust control, about 1.0 litre/hectare is applied. The insecticide is not mixed with water or solvent. It is oil-based to prevent evaporation and is usually applied ready to spray.

Droplets of spray are carried by the wind. In full coverage treatments, the insecticide is sprayed as overlapping swaths onto the control target so that a uniform deposit is achieved and the locusts receive enough insecticide. Remember:

- Do **not** spray during the hottest part of the day (1100-1600 hr) when convection may occur and carry the spray up into the sky instead of down onto the locusts
- Do **not** spray at low wind speeds less than 1 m/s
- Do **not** spray at high wind speeds more than 10 m/s

4. ULV aerial spray system

A good ULV sprayer uses rotary atomizers (spinning discs or rotating cages) to produce droplets in a small size range (50-100 *u*m). If droplets are too large or too small, control will be poor and insecticide wasted. For aerial spraying, use the following:

- Volume median diameter (VMD): 75-100 *u*m
- Blade angle: 35° (AU4000), 40° (AU5000) *(1)*
- Emission height: 5-10 meters, depending on wind *(2)*
- Aircraft/helicopter speed: 140-160 km/h in consultation with pilot
  (1) at air speed of 160 km/h, 7000 rpm (AU4000), 8000 rpm (AU5000)
  (2) higher for milling and flying swarms and, possibly, barrier control
- Drone height and speed should coincide with effective and safe locust control operation.

5. Calibrating ULV spray system

The aerial spray system on the aircraft/helicopter/drone must be calibrated before the actual spraying takes place.

What is calibration?

The aerial spray equipment needs to be adjusted in order to apply the recommended amount of insecticide, in the right size spray droplets, to the right place.

Before setting flow rates for the first time, consult the manufacturer's manual to get a rough estimate of the required flow rate. On aircraft/helicopter/drone, flow rate is checked by recording the time spent spraying and the amount of insecticide

Calibration should always be carried out by using the actual insecticide that will be applied

used. Accordingly, the flow rate should be measured and reset if necessary.

When do you calibrate spray equipment?

- When the aerial spray equipment is new
- When the insecticide formulation or concentration is changed
- When the volume application rate (VAR), track spacing or forward speed is changed
- Before the beginning of the campaign and at weekly intervals during it

How to calibrate a sprayer

Step 1. Find the recommended dose of the insecticide (g a.i./ha), from the drum label, FAO Guidelines, etc. If it is given as litres/hectare, go to step 3.

Step 2. Calculate the required Volume Application Rate (VAR).

$$\text{VAR (l/ha)} = \frac{\text{Recommended dose (g a.i./ha)}}{\text{Formulation concentration (g/l)}}$$

Example: If the recommended dose for chlorpyrifos is 250 g a.i./ha and its concentration is 450 g/l what is the VAR?

$$\text{VAR (l/ha)} = \frac{250}{450} = 0.55 \text{ l/ha}$$

If the formulation concentration expressed as a percentage of weight to volume (% w/v) convert the concentration to g a.i/l by using the formula:

$$\text{Concentration (g a.i./l)} = \frac{\text{Concentration given} \times 1000}{100}$$

Example: If the concentration given for Malathion is 96%, then this must be converted by using the formula:

$$\text{Concentration in g a.i./l} = \frac{96 \times 1000}{100} = 960 \text{ g a.i/l}$$

In short, multiply the given percentage concentration by 10.

Step 3. Calculate the Flow Rate (FR).

$$\text{FR (l/min)} = \frac{\text{VAR (l/ha) x speed (km/h) x track spacing (m)}}{600}$$

Example: What flow rate is required from an aircraft flying at 140 km/h using a 100m track spacing in order to apply 960 g a.i./ha of Malathion 96% ULV?

$$\text{FR (l/min)} = \frac{\text{1 (l/ha) x 140 (km/h) x 1000 (m)}}{600} = 23.33 \text{ l/min}$$

It is important to remember that if one of the parameters (flow rate, track spacing or forward speed) is altered, then one or more of the others have to be changed in order to maintain the correct Volume Application Rate and Dose.

- If flow rate increases VAR increases (and vice versa)
- If track spacing increases VAR decreases (and vice versa)
- If forward speed increases VAR decreases (and vice versa)

Example: If the wind becomes stronger, it might be possible to increase the track spacing to allow a faster work rate. In order to maintain the correct VAR and dose, either the spray forward speed must be decreased or the flow rate must be increased. In order to achieve a faster work rate from the wider track spacing, the flow rate must be increased, rather than the forward speed being decreased.

How to measure the flow rate of aerial spray systems

Electronic pesticide pumps (collection technique) :

Step 1. Calculate the required flow rate for each atomizer.

Step 2. Make sure that the aircraft engine is running so that the correct voltage is being supplied to the pump.

Step 3. Set the approximate flow rate based on tables in the user's handbook.

Step 4. Position a bucket under each atomizer. To prevent insecticide from squirting outside the collecting bucket, fasten plastic bags with a hole in the bottom over the atomizers.

Step 5. Put about 50 litres of insecticide into the spray tank in order to prime the pipework. Ensure that the pipes are full by pumping insecticide through the atomizers until air bubbles disappear (the pipework in an aircraft spray system can

contain up to 30 litres of liquid). Return the collected insecticide to the sprayer tank.

Step 6. Put the buckets back under each atomizer, turn on the pump (*but not the atomizers*) and measure the volume of insecticide collected using a measuring cylinder.

Step 7. Adjust the flow rate to bring it closer to the required rate calculated previously. Repeat step 6 until this rate has been achieved to within about 5% error.

Step 8. When the required flow rate has been achieved, recheck it two more times to ensure that it is correct.

Windmill-driven pesticide pumps (loss technique while in flight):

Step 1. Calculate the desired flow rate (see page 12).

Step 2. Set the approximate flow rate based on tables in the user's handbook.

Step 3. Position a bucket under each atomizer. To prevent insecticide squirting outside the collecting bucket, fasten a plastic bag with a hole in the bottom over each atomizer. Put about 50 litres of insecticide into the spray tank in order to prime the pipework. Ensure that the pipes are full by pumping insecticide through the atomizers until air bubbles disappear (the pipework in an aircraft spray system can contain up to 30 litres of liquid). Return collected insecticide to the sprayer tank.

Step 4. Fill the spray tank to a known level with insecticide (either complete full or to a marked level).

Step 5. Take off and spray over the target area using normal spraying techniques for a specific number of minutes **(M)**.

Step 6. After landing, use a measuring cylinder to measure the amount of insecticide required to refill the spray tank to its original level. This is the number of litres emitted **(E)**.

Step 7. Calculate: **Flow rate (l/min) =** $\frac{\mathbf{E(l)}}{\mathbf{M\ (mins)}}$

Step 8. Adjust the flow rate to bring it closer to the required rate calculated previously. Repeat steps 4-7 until this rate has been achieved to within about 5% error.

Step 9. When the required flow rate has been achieved, recheck it two more times to ensure that it is correct.

How to estimate work rate

A rough estimate of the work rate can be calculated from the formula:

$$\textbf{Work rate (ha/h)} = \frac{\textbf{Forward speed (km/h) x track spacing (m)}}{\textbf{10}}$$

Note: this formula does not take into account the time required for turning at the end of each spray pass, which can be considerable for aircraft.

Typical track spacing in aerial control

A track spacing of **100 m** is generally used when spraying hopper bands, blocks of bands or settled swarms, milling swarms at roost and stratiform swarms using aircraft/helicopter.

6. Recording and reporting

Monitoring is very important in order to document the activities and to allow later analysis of the successes and failures of any campaigns. Most of the information concerning the control operations and their efficacy and the efficiency of the campaign are covered in the *FAO Spray Monitoring Form* (Annexure-I).

The form should be completed in order to include details on the location, rainfall, ecology and locusts. Duly filled forms should be returned to the National Locust Unit headquarters as soon as possible for review. Any problems (lack of protective clothing, overdosing, poor efficacy, non-target effects, etc.) can be noted on the form so they can be addressed later.

General flight report and job details produced by the DGPS, track guidance system and any flow control systems on board the aircraft/helicopter should be submitted to the Locust Control Unit Headquarters. Field staff recording the details of each

Field staff recording the details of each control operation should use these forms

control operation should use these forms

7. Cleaning, storing and disposal

Spray equipment should always be clean and ready to use. Properly dispose empty containers.

Always wear protective clothing while handling insecticides

Aerial spray system

- Drain unused insecticide back into the original containers
- To clean the sprayer, put some kerosene or diesel into it and spray it over the target area or waste ground, away from water bodies or supplies used by people or livestock; never dump this liquid in one place such as a pit
- Carry out any repair or required maintenance
- Wash the outside of the spray system with a cloth soaked in diesel or kerosene
- Cover the spray system (atomizer, variable restrictor unit and blades) with suitable protective covering to avoid any contamination (e.g. dust)

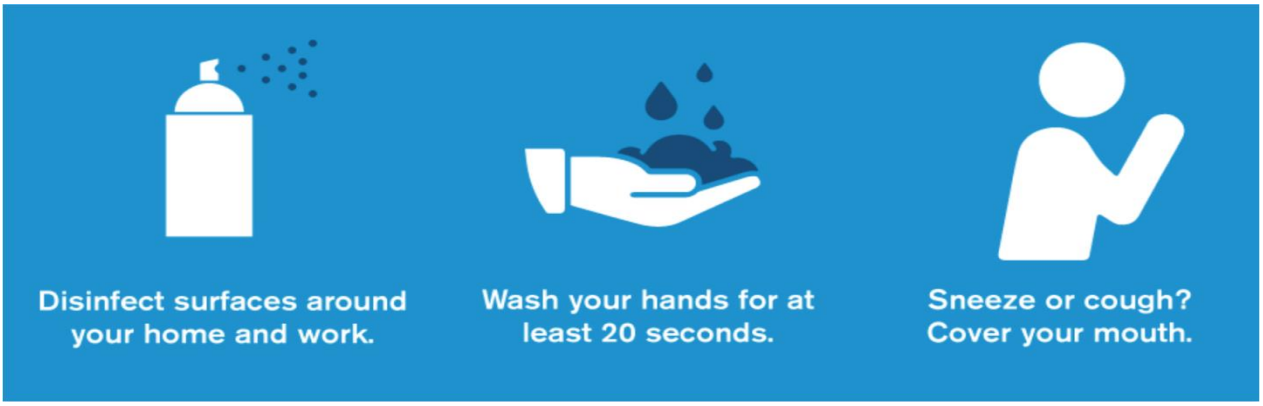
Insecticide storage

- Keep insecticide in original containers in a cool locked store to reduce deterioration caused by high temperatures
- Use older insecticides first (first-in-first-out system)

Disposal of empty insecticide containers

- Follow relevant provisions envisaged under the Insecticides Act 1968 and Rule 1971
- Clean empty insecticide containers three times inside and out with diesel or kerosene
- Collect the small volume of washings and dispose of by adding them to the insecticide in sprayer tanks during the next control operations or, if it is the end of the season, pour them into insecticide containers that are not full
- Never use empty containers for any other purpose than insecticides
- If they are to be recycled, they should be transported back to manufacturer
- Containers for disposal should be punctured, crushed and sent back to relevant authorities for appropriate disposal

Coronavirus: Safety Tips



Follow these steps to help keep you and others safe:

Download Arogya Setu App in your Mobile Phone

Stay home if you can and avoid any non-essential travel. Avoid social gatherings of more than 5 people.

Practice social distancing by keeping at least 6 feet — about two arm lengths — away from others if you must go out in public. Stay connected with loved ones through video and phone calls, texts and social media. Avoid close contact with people who are sick.

Wash your hands often with soap and water for at least 20 seconds, especially after being in a public place, or after blowing your nose, coughing or sneezing. If soap and water are not readily available, use a hand sanitizer with at least 60% alcohol.

Avoid touching your eyes, nose and mouth with unwashed hands.

Clean and disinfect household surfaces daily and high-touch surfaces frequently throughout the day. High-touch surfaces include phones, remote controls, counters, tabletops, doorknobs, bathroom fixtures, toilets, keyboards, tablets and bedside tables.

Cover your coughs and sneezes. Use a tissue to cover your nose and mouth and throw used tissues in a lined trash can. If a tissue isn't available, cough or sneeze into your elbow — not your hands. Wash your hands immediately

Annexure - I

FAO SPRAY MONITORING FORM

Attach this form to the DL Survey and Control Form and submit both to the National Locust Unit in your country whenever control operations are carried out

(indicate appropriate information as required)

1	**CONTROL LOCATION**	**1**		**2**		**3**		**4**		**5**		**6**	
1-1	date												
1-2	name *(from DL Survey Form)*												
2	**VEGETATION DATA**												
2-1	vegetation type (Grass, Bushes, Trees, Crop)	G B T C		G B T C		G B T C		G B T C		G B T C		G B T C	
2-2	height (m)												
2-3	crop names and damage (%)												
3	**INSECTICIDE DATA**												
3-1	trade name												
3-2	concentration (g a.i./l or %)												
3-3	formulation (EC, ULV, Dust)	E U D		E U D		E U D		E U D		E U D		E U D	
3-4	expiry date												
3-5	is insecticide mixed with water or solvent?	Y N		Y N		Y N		Y N		Y N		Y N	
3-6	if yes, what solvent and mixing ratio												
4	**WEATHER CONDITIONS**												
	start and end of control operations:	start	end	start	end	start	end	start	end	start	end	start	end
4-1	time												
4-2	temperature (°C)												
4-3	relative humidity (%)												
4-4	wind speed (m/s)												
4-5	wind direction (degrees from N)												
4-6	spray direction (degrees from N)												
5	**SPRAY APPLICATION**												
5-1	sprayer type (Rotary, Airblast, ENS, Hydraulic, Other)	R A E H O		R A E H O		R A E H O		R A E H O		R A E H O		R A E H O	
5-2	sprayer operator (Pilot, Driver, Locust officer, Hired, Other)	P D L H O		P D L H O		P D L H O		P D L H O		P D L H O		P D L H O	
5-3	sprayer manufacturer												
5-4	sprayer model												
5-5	sprayer platform (Aerial, Vehicle, Handheld)	A V H		A V H		A V H		A V H		A V H		A V H	
5-6	date of last calibration												
5-7	atomizer height above ground (m)												
5-8	ROTARY SPRAYERS: speed setting (blade angle, pulley setting, no. batteries)												
5-9	speed of atomizer (rpm)												
5-10	flow rate setting (which nozzle or restrictor used)												
5-11	flow rate/atomizer (l/min)												
5-12	number of atomizers												
5-13	track spacing (m)												
5-14	BARRIERS ONLY: width and spacing (m)												
5-15	forward speed (km/h)												
5-16	AERIAL SPRAYING:	GP = ground party available RC = radio communication with aircraft TG = DGPS track guidance											
	support supplied	GP RC TG		GP RC TG		GP RC TG		GP RC TG		GP RC TG		GP RC TG	
5-17	ground marking (GPS, Flag, Mirror, Smoke, Vehicle, None)	G F M S V N		G F M S V N		G F M S V N		G F M S V N		G F M S V N		G F M S V N	
6	**CONTROL EFFICACY**												
6-1	locust mortality (% dead)												
6-2	time after treatment (hours)												
6-3	method of mortality estimation (Quadrats, Target size, Visual, Cages, Other)	Q T V C O		Q T V C O		Q T V C O		Q T V C O		Q T V C O		Q T V C O	
7	**SAFETY AND ENVIRONMENT**												
7-1	protective clothing:	G = goggles M = mask L = gloves O = overalls B = boots											
	what did the operator wear?	G M L O B		G M L O B		G M L O B		G M L O B		G M L O B		G M L O B	
7-2	was soap and water available?	Y N		Y N		Y N		Y N		Y N		Y N	
7-3	who was informed of spraying? (Farmer, Nomad, Villager, Official, Beekeeper)	F N V O B		F N V O B		F N V O B		F N V O B		F N V O B		F N V O B	
7-4	effect on non-target organisms	Y N		Y N		Y N		Y N		Y N		Y N	
7-5	if yes, what												
7-6	details of anyone who felt unwell or if other problems were encountered:												

Annexure-XIV

REPORT OF THE SUB-COMMITTEE TO FRAME GUIDELINES FOR USE OF DRONES FOR PESTICIDES APPLICATIONS IN LOCUST CONTROL, PLANT PROTECTION AND PUBLIC HEALTH

BACKGROUND:

The use of latest technological intervention has increased drastically in various fields including agriculture. There is an increase demand for use of drones in locust control, plant protection, public health etc. where pesticide applications are to be done by using drones. As the use of pesticide by drone can be considered as aerial spraying hence provisions / conditions envisaged under the Insecticides Act / Rules needs to be fulfilled.

Many queries/reference are received from time to time for approval of use of drones for pesticides application in the above sectors.

As of now no modalities/ protocol / guiding document is available with CIB & RC which can be used to scrutinize such requests, hence, a sub-committee is constituted by the Plant Protection Advisor to look into all relevant aspects of application of pesticide by drones and list out requirements for drone operators etc. considering efficacy and safety aspects. The composition of the Sub-Committee is as under;

1.Dr.SandhyaKulshrestha, Consultant(Pharma):Chairperson
2. Dr. Neelam Chaudhary, DD (E), IPM : Member Secretary
3. Sh. K. W. Deshkar, DD (E), CIB&RC : Member
4. Dr. K. L. Gurjar, DD (PP), Locust : Member

Any other co-opted members, as suggested by the Chairperson.

The terms of reference of the sub-committee are to submit protocol / guidelines as per requirement of the Insecticides Act 1968 and Rules 1971 as amended, considering the relevant aspects (efficacy and safety) of applications of pesticide by drones for locust control, plant protection, public health etc and list out requirements (with checklist) for drone operators for enabling processing of their applications to the CIB.

CONDUCT OF BUSINESS

The sub-committee held four meetings at the Dte. of PPQ&S, Faridabad. The meetings were attended by all members. Dr. S. Kulshrestha, Chairperson of the sub-committee attended the meeting through conference call due to sealing of State borders during lockdown.

The members gathered information on rules and regulations for use of drones for pesticide application in various countries; relevant regulations and /or guidelines in India, type of farming practiced in the country etc. and observed the following:

Provisions under the Insecticides Act/Rules:

The committee noted that as per the provisions of the Insecticides Rules, one of the functions of the board is to specify the uses of the classification of insecticides on the basis of their toxicity as well as their being

suitable for aerial application (Rule 3 (b)). Also, Rule 43 provides that the aerial application of insecticides shall be subject to the following provisions:

a. Marking of the area shall be the responsibility of the operators;
b. The operators shall use only approved insecticides and their formulations at approved concentration and height;
c. Washing, decontamination and first-aid facilities shall be provided by the operators;
d. All aerial operations shall be notified to the public not less than twenty-four hours in advance through competent authorities;
e**.** Animals and persons not connected with the operations shall be prevented from entering such areas for a specific period; and
f**.** The pilots shall undergo specialization training including clinical effects of the insecticides.

Further, as per the provisions of the Insecticides Act and Rules, label/leaflets are approved by the Registration Committee (RC) under the Act. These label/leaflets besides other information also provide information on the type and stage of crop, pest-diseases to be controlled, equipment to be used for application of pesticide, dilution, rate of spray, conditions of spray etc. based on the data submitted by the applicant to the Registration committee. Hence, before permitting the application of pesticide through Drones, data generated as per guidelines of the RC (yet to be framed for drones) need to be evaluated for ensuring the efficacy of the product and its safety to human and environment.

Guidelines /Scenario in other Countries of the World:

The committee noted that the permission for use of drones for pesticide application and the rules for the same vary around the world considerably. It depends on type of farming; whether the country has advanced or developing agriculture and geography and other factors. **In EU, aerial application including use of drones is completely banned.** In USA, use of drones is permitted provided pilots comply with strict Federal Aviation Operational Rules as well as requirement of aerial application. **In Canada, drone use for pesticide application is illegal.** In Africa, in many countries there are no Rules and regulations. In **New Zealand,** regulations introduced in 2019, permit commercial chemical applications providing the pilot holds Part 102 Certificate, specifying agricultural operations and operating an aircraft weighing more than 25kg. They must also hold a certificate in Aerial Application (Pilot Chemical Rating). In **Australia, r**ecently introduced exemptions to regulations about drone laws allow landowners to use 2kg to 25kg drones for limited commercial use on private land, including spraying. In **China, d**rones must be registered and pilots must be trained for agricultural spraying. Drone pilots are also required to take training and hold a Class V – Protection certificate. In **Switzerland, p**ilots must receive authorisation, meet comprehensive safety regulations and keep drift below a defined threshold. In Japan, **p**ilots must comply with Civil Aeronautics Act and have training and special permission to spray.

Scenario in India:

In India, there were no guidelines for use of drones in agriculture, hence these were not used. As and when required, in case of need, permissions were granted by the Central Insecticides Board in the past for aerial application of pesticides through helicopter or aircraft for specific purpose and periods subject to approval under regulations of other concerned departments like civil aviation. Till now there was no regulation in the country for use of drones in agriculture. However, in August, 2019, the Directorate General of Civil Aviation has issued the Civil Aviation Requirements (CAR) for

civil use of Remotely Piloted Aircraft System (RPAS) commonly known as drones. The regulation was developed after extensive consultations among various stakeholders, and is effective from 1st December, 2018. As of now, RPAS to operate within visual line of sight (VLoS), during day time only, and upto maximum400 ft. altitude. However, Director General Civil Aviation (DGCA) may authorize some operations on case-to-case basis subject to adequate justification is provided for safe conduct of RPAS operation. Minimum manufacturing standards and training requirements of Remote Pilots of small and above categories of RPAS have been specified in the regulation. Further, as per the guidelines/rules issued by DGCA on 1st December'2019, RPA shall not discharge or drop substances unless specially cleared and mentioned in UAOP (12.18) and RPA shall not transport any hazardous material such as explosives or animal or human payload (12.19). Hence, pesticide application using drones require clearance as all pesticides are hazardous substances.

Development of Guidelines for Drone use in India:

Department of Agriculture, Co-operation and Farmers Welfare (DAC&FW) and ICAR have been working on development of drone based precision input application. Accordingly, a committee was constituted by Department of Agriculture, Cooperation & Farmers Welfare (M& T Division), Ministry of Agriculture & Farmers Welfare, Government of India vide letter No. 13-8/2017-M&T(I&P) dated 27/05/2019) under the chairmanship of Dr. K. Alagusundaram, DDG (Agri. Eng.), ICAR, to formulate the standard guidelines for operation of drones for pesticide application. The terms of reference of the Committee are to develop guidelines for operation of drones in application of spraying of pesticides, growth hormones, fertilizers in different crops at different stages.

The sub-committee also noted that no further guidelines of M/o Civil Aviation exist w.r.t. clause 12.18 which refers to special clearance for discharging or dropping the substances. Also, clarification is required from the M/o Civil Aviation w.r.t. clause 12.19 in their guidelines which prohibits the transport of hazardous material in RPA.

Farming pattern in India:

As most of the agriculture systems in India belongs small and marginal sector, it would not be the best option for small and marginal farmers to apply pesticides by drone technology. Given the warm climate with wide range of variability it would be difficult to mitigate exposures and drift risk caused by pesticides. Further, in such cases, usually farmers have their residential huts/houses also in the same premises at a little distance and the live-stocks are also kept in the same farm making it further difficult to avoid the exposure. Moreover, the technology is expensive and its affordability by small and marginal farmers is to be seen.

There are some sectors where the use of this modern technology may deliver benefits like for control of big locust swarms; in some public health situations to control vectors of diseases; and for plant protection where corporate plantation is practiced like tea estates.

RECOMMENDATIONS:

Based on the above observations and discussions, the following recommendations are made:

1. A clarification is required from the M/o Civil Aviation w.r.t. clause 12.19 in their guidelines on Drones which prohibits the transport of hazardous material in RPA. As pesticides are hazardous substances, hence the clarification is required.

2. Applicant seeking permission for spraying of pesticide by RPA should obtain special clearance from M/o Civil Aviation for discharging or dropping the substances as per clause 12.18 of their guidelines.

3. Applicant should comply and follow the guidelines of the Civil Aviation Ministry for use of RPA /drones and should have permission for undertaking the pesticide application operation.

4. Applicant should comply and follow the guidelines as given by the Government regarding use of drones/ RPA.

5. The pesticide should be approved by the Registration Committee for applying through drones for controlling locust in the schedule desert area; on the specified crops having insect pest/diseases/ weeds; and for disease vectors to be controlled.

6. The application of pesticides through drones is permitted only for the following situations:

i) **Use of drone for locust control:** Permission for use of drones to control Locust shall be subject to the conditions of Standard Operating Procedure (SOP) duly endorsed by the Plant Protection Adviser and approved by the Central Insecticides Board which should contain the following: -

   a. Marking of the area shall be the responsibility of the operators;
   b. The operators shall use only those insecticides and their formulations which are approved by the Registration Committee for proposed use through drones and at approved concentration and height;
   c. Washing, decontamination and first-aid facilities shall be provided by the operators;
   d. All pesticide applications through drone operations shall be notified to the public not less than twenty-four hours in advance through competent authorities;
   e. Animals and persons not connected with the operations shall be prevented from entering such areas for a specific period as per the recommendations of the Registration Committee;
   f. The pilots shall undergo specialization training in plant protection including clinical effects of the insecticides by the subject matter specialist nominated by the Plant Protection Adviser;
   g. Drone should have capability to carry payload of minimum 10 litres; and
   h. All above requirements including compliance to the various requirements under Civil Aviation Rules and of guidelines/SOP for aerial spraying approved by the Central Insecticides Board /Registration Committee to be ensured by the Technical Committee nominated by the Plant Protection Adviser prior recommending use of drone for locust control;

   The proposals received by the Locust Division, Directorate of PPQ&S for granting permission for use of drone in locust control will be examined by a Technical Committee (comprising of Locust Control Experts & Medical Toxicologist) constituted by the Plant Protection Adviser prior permitting use of drone in locust control. Plant Protection Adviser will submit details of such approvals in the subsequent meeting of the Board.

ii) **Use of Drone in Public Health:** To control vectors of the diseases by M/o Health & Family Welfare under National Vector Disease Control Program. In addition to compliance of requirements of the Civil Aviation Rules and other provisions under the Insecticides Act & Rules and other safety precautions, detail guidelines/SOP may be formulated by the M/o Health & Family Welfare and the proposal received from the Government authorities

(Central or State Government/ Municipal Corporation) which comply to SOP shall be placed before the Central Insecticides Board for grant of permission.

iii) **Use of Drone for Plant Protection in agriculture:** Use of drones may be permitted only in corporate plantation in organized sectors etc. In such cases recommendations from the State dept. of Agriculture/ horticulture will be required. Permission for use of drones shall be subject to the conditions of Standard Operating Procedure (SOP) duly endorsed by the Plant Protection Adviser and approved by the Central Insecticides Board/Registration Committee. Compliance to all Rules and regulations and the SOP should be evaluated by a technical committee constituted by the Plant Protection Adviser.

The proposals received by the IPM Division, Directorate of PPQ&S for granting permission for use of drone in agriculture/ horticulture will be examined by a Technical Committee (comprising of Plant Protection Experts& Medical Toxicologist) constituted by the Plant Protection Adviser prior permitting use of drone in agriculture/ horticulture. Plant Protection Adviser will submit details of such approvals in the subsequent meeting of the Board.

7. The proposals complying to above requirements for application of pesticides through drones will be placed before the Central Insecticides Board for consideration and grant of **permission for** application of pesticides through drones **for the specific purpose and for the specified period**. Thereafter, renewal of permission will be required.