

Information Note

On 2nd February 2023, The Ministry of Agriculture and Farmers Welfare, Government of India, issued an Insecticides (Prohibition) Order banning the use of two insecticides and a fungicide namely dicofol, methomyl and dinocap respectively prohibiting their manufacture, registration, formulation, import, transport, sale and use in the country. The ban was issued considering the expert and registration committee's report on the previously published draft order for banning 27 pesticides which are likely to involve risks to humans and animals, dated 18th May, 2020 in the Gazette of India.

The expert committee was constituted by the Department of Agriculture and Cooperation on 8th July 2013 and further expanded on 19th August 2013 for reviewing and examining 66 pesticides which were banned, restricted or withdrawn in other countries but continued to be registered in India. Subsequently, the Central government, in the exercise of the power conferred by Sections 27 and 28 of the Insecticides Act, 1968 banned 18 pesticides for registration, use import and export purposes in 2018, of which 12 were banned with immediate effect on August 2018, while ban on 6 more was to kick in by December 31, 2020. Following the review of 66 pesticides by the Expert Committee and the status of submission of recommended studies and safety data, another 27 pesticides were notified given the risks to animals and human beings for action in the Gazette notification issued on 14th May 2020.

The current notification of ban pertaining to only 3 of the 27 insecticides was issued following the hazard risks produced by these pesticides in animals, and human beings and the non-availability of safety data and efficacy regarding the same. These are in the list of Highly Hazardous Pesticides provided by PAN (Pesticide Action Network) International. However, 24 other pesticides listed in the previous gazette notification issued on 14th May 2020 still remain unprohibited, which is baffling enough. Among these 24, 19 are Highly Hazardous Pesticides. It was clearly mentioned in the draft order that “the use of twenty-seven insecticides as specified in the schedule to this Notification is likely to involve risk to human being and animals as to render it expedient or necessary to take immediate action”

Prohibited pesticides, in the current notification:

- 1. Dicofol (WHO Class II insecticide)-** It is a POP listed in the Stockholm convention. It is banned in 52 other countries. The latest consumption data shows that 7.18 MT of Dicofol is consumed in India in 2021.

Source of import: Agan Chemical Manufacturers Ltd., Israel, Makhteshim Agan, Israel, Dow AgroScience, Italy. I.P.I.CI.SPA, Italy. Dow AgroScience, USA, Makhteshim, Chemical Works, Israel. , Montecinca, S.A.,Barcelona,Spain

Local manufacturers: Indofil Industries Ltd., Andheri(E) and Hindustan Insecticide Ltd.

- 2. Dinocap (WHO Class II fungicide)-** It is banned in other 32 countries. It is deemed to be a registered pesticide. According to EU GHS, it is known or presumed a human reproductive toxicant. The latest consumption data shows that, 8 MT of Dinocap is consumed in India in 2021.

Source of import: Dow Agro Science, Italy, Dow AgroScience, USA

3. **Methomyl (WHO class Ib insecticide)**- It is banned in 47 other countries. The latest consumption data shows that 3 MT of methomyl is consumed in India in 2021 (Import).

Source of import: E.I. Dupont de Numerous & Co. Inc., USA (By M/s Coromandel Indag Product India Ltd, CR issued in1990) and Jiangyin Rotam Chemicals Co. Ltd., Qingyang Town, Jiangyin, Jiangsu Province, China. (By M/s Rotam India Ltd in 223rdRC)

4. **Monocrotophos (WHO class Ib Insecticide)** - Monocrotophos is not banned outright, like the 3 HHPs above. will be restricted to use only in Cotton according to the latest draft of the prohibition order, as the formulation Monocrotophos 36 % SL will be stopped for use in 14 label crops. Monocrotophos is an HHP, which is banned in 129 countries, and is listed in the PIC of the Rotterdam convention. Monocrotophos was banned for use in vegetables as per order dated 10, October, 2005². Monocrotophos has 7487 MT production in 2022 and 351.91 MT volume consumption in 2022.

Source of import: Shen Hong Agril Chemical Co. Ltd., Taiwan, Shell International Chemical Co. Ltd.,USA, Shell International Chemical Co. Ltd.,UK, Shell Netherland Chemie B.V., Netherland, Taiwan -Tainan Giant Ind. Co. Ltd., Taiwan, Antiparasited per Agriculture, SPA Vspitale Interments, versato, Italy, Agrimont, SPA,Italy, Sundat (S) Pte. Ltd., Singapore, Sinoway International (Jiangsu) Company Ltd. China.

Local manufacturers: Cheminova India Ltd., Mumbai, De-Nocil Crop Protection Ltd., Mumbai, Coromondal International Ltd, Secunderabad, Hindustan Insecticides. Ltd., Delhi, Vantech Industries Ltd., Hyderabad, Meghmani Organics Ltd, Ahmedabad, United Phosphorus Ltd., Mumbai, Sabero Organics Gujarat Ltd, Hyderabad Chemical Products Pvt. Ltd, India Pesticides Ltd.(68%), Gujarat Insecticides Ltd., Ankleshwar (68%), Bharat Rasayan Ltd., Delhi(68%), Sudarshan Chemical Industries Ltd. Pune (68%), Syngenta India Ltd. (68% minTIM), HPM Chemicals & Fertilizers Ltd., N. Delhi

Restricted pesticides, in the current notification:

1. **Carbofuran (WHO class 1 b insecticide)** - Carbofuran 3 % CG formulation was the only formulation registered even before the issue of the draft of Insecticides (Prohibition) Order, 2023. Henceforth, there is no Observed change or restriction in its use in 25 crops. Carbofuran is a Highly Hazardous Pesticide (HHP) according to PAN international classification. Carbofuran, a DRP is also listed in the PIC list of the Rotterdam Convention and is banned in 87 countries is also highly toxic to bees. The latest consumption data shows that 237.75 MT of carbofuran is consumed in India in 2021.

Source of import: FMC Corporation, USA, Brayton Chemical, USA, Agrichem Inc., USA, Mobay Chemical Corporation, USA, Lobel Chemical Corporation, USA, Mitsubishi Chemical Industry Co. Ltd., Japan, Medinpex, Hungary. , M/s. Jiangsu Lanfeng Biochemical Co Ltd., PR China., Human Research Institute of Chemical Industry, China.

Local manufacturers: Atul Ltd. Valsad, Rallis India Ltd.

2. **Malathion (WHO class 3 Insecticide)** – Five formulations of Malathion (Malathion 02% Household Spray, Malathion 05 % DP, Malathion 25 % WP, Malathion 50 % EC and

² (S.O.1482 (E) dated 10th Oct, 2005)

Malathion 96 % ULV) are still approved for use in India. According to the latest draft of Insecticides (Prohibition) Order, 2023, malathion will be limited to use in only Two crops (Paddy and Cabbage) and also in the vector control of adult mosquitoes. Its use will be stopped for 14 crops according to this latest restriction statement. Malathion, an HHP is a probable carcinogen to humans according to IARC and is a choline esterase inhibitor showing concern for neurotoxicity in humans, is banned in 32 countries. It is a Deemed to be registered pesticide, DRP. The latest consumption data shows that 305 MT of malathion is consumed in India in 2021, 3286 MT production, 2772 MT Import and export.

Source of import: Cheminova Denmark A/s, POBox9, DK - 7620, Lemvig, Denmark.

Local manufacturers: Cyanamid India Ltd., Mumbai, Hindustan Insecticides Ltd., Delhi, Rallis Industrial Chemicals Ltd., Ankleshwar, Coromandel International Ltd., Excel Crop Care Ltd., Mumbai, Shivalik Rasayan Ltd.

3. Quinalphos (WHO class 2 Insecticide) – Five formulations of quinalphos (Quinalphos 01.50 % DP, Quinalphos 05 % Granules, Quinalphos 20 % AF, Quinalphos 25 % EC and Quinalphos 25 % Gel) is still approved use in India. Quinalphos restriction will be applied to 3 crops and it will remain to be used for 24 crops including vegetables and fruits. Quinalphos is an HHP with cholinesterase inhibition properties and is a suspected endocrine disruptor. It is a DRP, which is banned in 32 countries. Quinalphos has 2454 MT production in 2022, 811 MT export & import and 412.6 MT volume consumption in 2021

Source of import: Novartis Crop Protection Inc., USA

Local manufacturers: Cheminova India Ltd., Mumbai, Shaw Wallace & Co. Ltd., Chennai, Sudarshan Chemical Industries Ltd., Pune, India Pesticide Ltd, Lucknow, Arlex Chemi (P)Limited, Mumbai, Megmani Organics Ltd., Ahmedabad, Coromandel International Ltd, Hyderabad Chemical Products Pvt. Ltd, Gharda chemicals Ltd, Hikal Chemical Products Ltd, Gujarat Insecticide Ltd, Sun Pesticides (P) Ltd, 70% min. 9(4), M/s Bhagiradha Chemicals and Industries Ltd., 70% min. 9 (4) in 395th RC.

4. Mancozeb (WHO class U Fungicide) – 3 Formulations of Mancozeb (Mancozeb 35% SC, Mancozeb 75% WP, Mancozeb 75% WG) are still approved for use in the country. The latest prohibition order has restricted its use in Tapioca, Guava and Jowar, however, its use in tapioca was never approved beforehand. It is approved for 14 crops including vegetables and fruits. It is a probable carcinogen according to US EPA. It is a DRP in India and is banned in 32 other countries and is a suspected endocrine disruptor. Mancozeb has 117,831 MT production in 2022, 811 MT export & import and 1187.43 MT volume consumption in 2021.

Source of import: Dow AgroScience, USA, Dow AgroScience, Italy, Agrimont SPA, Italy, E.L.F. Autochem Agri., B.V. Rotterdam, Holland, Montadison SPA, Italy, E.I. DuPont de Nemours & Co. Inc., USA, Sona Chem (PTI) Ltd., South.Africa, Sinoway International (Jiangru) Company Ltd. China, Rohn & Haas Co., USA

Local manufacturers: Indofil Industries Ltd, Andheri (E), Merchem Ltd., Cochin, United Phosphorus Ltd., Mumbai, Sabero Organics Gujarat Ltd, Hindustan Insecticides Ltd, Rallis India Ltd, Punjab Chemicals & Crop Protection Ltd, Indogulf Crop Sciences Ltd., Delhi.

5. Oxyfluorfen (WHO class U herbicide) – Two formulations of oxyfluorfen (Oxyfluorfen 20% DF, Oxyfluorfen 23.5% EC) are continued for approved use in the country according to the latest prohibition Order. The crop labels or approved use in Potato and ground nut will be also prohibited based on this order giving a total number of 4 approved crops for oxyfluorfen

use. It is a probable carcinogen as per the US EPA classification. It is banned in one country. The latest consumption data shows that, 34.16 MT of Oxyfluorfen is consumed in India in 2021

Source of import: Yifen Biotechnology Group Co. Ltd, Shangyu Nutrichem Co. Ltd, M/s Jiangsu Zhongyi Chemical Co. Ltd, Dow AgroScience, USA, ADAMA Agan Ltd.

Local manufacturers: M/s Best Crop Science LLP

6. Dimethoate (WHO Class 2 Insecticide) – One formulation (Dimethoate 30 % EC) of Dimethoate will remain to be used in India according to the draft of Insecticides (Prohibition) Order, 2023. It will be prohibited for use in fruits and vegetables that are consumed as raw food items which limits its use to 13 crops and restrict use to 10 crops. Dimethoate, a DRP, is a choline esterase inhibitor and exhibits suspected endocrine disruption. It is banned in 33 countries. Dimethoate has 1391 MT production in 2022, 96 MT export & import and 209.593 MT volume consumption in 2021.

Source of import: Agrimot SPA, Italy, I.P.I.C.I.SPA, Italy, Cheminova A/S, P.O. Box 9, DK 7620, Lemvig, Denmark, M/s. Chongqing Pesticides & Chemical Industry Group Company Ltd., Hunan Fourth Road, Chongqing Chemical Industrial Park, Chongqing, China (95% Min)

Local manufacturers: Rallis India Ltd, ShawWallace & Co.Ltd., Chennai, Cheminova India Ltd, Bangalore, Hyderabad Chemical Products Pvt. Ltd, Shivalik Rasayan Ltd, Sudarshan Chemical Industries Ltd., Pune, Coromandel International Ltd.

7. Chlorpyrifos (WHO Class 2 Insecticide) – Chlorpyrifos will remain to be used in 6 different formulations (Chlorpyrifos 01.50 % DP, Chlorpyrifos 10 % Granules, Chlorpyrifos 20 % EC, Chlorpyrifos 50 % EC, Chlorpyrifos 02 % w/w EC, Chlorpyrifos 75 % w/w WG) in the country. It will be limited to use in 12 crops and will be prohibited for use in 3 crops based on this prohibition order. It is currently evaluated for its possibility as a POP (Persistent organic pollutant). It is banned in 39 countries and is a choline esterase inhibitor and a suspected endocrine disruptor. It is also a reproductive toxicant according to the EU GHS classification system. Chlorpyrifos has 7494 MT production in 2022 and 1036.69 MT volume consumption in 2021.

Source of import: Dow Agro Sciences LLC, USA, Dow AgroSciences LLC, UK, M/s ADAMA Mekhteshim Ltd. Israel, FMC Corporation, USA, Cheminova Denmark A/s, PO Box 9, DK- 7620, Lemvig, Denmark.

Local manufacturers: De -NOCIL Crop Protection Ltd., Mumbai, Excel Crop Care Ltd., Mumbai, Gharda Chemicals Ltd., Mumbai, Montari Industries Ltd., Delhi, Siris India Ltd., Hyderabad, Vantech Industries Ltd., Hyderabad, GSP Crop Science Ltd., Ahmedabad (RC305), Sabero Organics Gujrat Limited, India Pesticide Ltd, Lucknow, Punjab Chemicals and Crop Protection Ltd, Chandigarh Rotam India Limited, Mumbai, Heranba Industries Limited, Insecticides India Ltd, Shivalik Rasayan Ltd., New Delhi, Bonagri Life Science Ltd, Hubli, Coromandel International Ltd, Hyderabad Chemical Products Pvt. Ltd, Cheminova India Ltd., Gujarat, Netmatrix Ltd. Hyderabad, Megmani Organics Ltd., Ahmedabad, Bharat Rasayan Ltd., Delhi, Gujarat Insecticides Ltd. Ankleshwar, Sudarshan Chemical Industries Ltd., Pune, Bhagiratha Chemicals & Industries Ltd, HPM Chemicals & Fertilizers Ltd, Jubilant Life Sciences Ltd., Gajraula, Jyotiba PhuleNagar, UP, Best Crop Science LLP, Gajraula, UP, HemaniIndustriesLtd, Integrated Pesticides(P) Ltd, Sujanil ChemoIndustries, Pune, Coromandel Agrico Pvt. Ltd., NewDelhi, M/s Oriya Organics Pvt. Ltd, M/s Krishi Rasayan Exports Pvt.