

# Chemical Pesticide Poisoning Risks and Usage In India

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**Abstract-** Recent deaths of farmers due to pesticide poisoning in Yavatmal and other districts of Maharashtra have opened up a debate over the rationale of using all such pesticides in India which are either banned or restricted elsewhere in the world due to their high toxicity.

Against the backdrop of the Maharashtra incidents, the Delhi-based Centre for Science and Environment on Wednesday came out with a list of seven extremely or highly hazardous pesticides which continue to be used in India despite these being banned in many countries. The think tank questioned the central committee, headed by IARI scientist Anupam Verma, which had in 2015 reviewed the use of these pesticides but preferred not to ban them immediately.

## I. INTRODUCTION

Seven hazardous pesticides are on the list of 18 Class-I (classified as extremely/highly hazardous), which accounted for nearly 30% of the total pesticide use in India in 2015-16. Though the central committee had reviewed use of 66 pesticides and recommended ban on 13 of them from 2018 and phasing out of six others by 2020, allowing the use of others in the list till the next review is something which bothers researchers and farm experts.

"Deaths and illnesses due to pesticides can be avoided if we urgently fix some of the crucial gaps in our regulations and improve its enforcement," said Chandra Bhushan, deputy director general of the CSE, while referring to the Maharashtra incidents and similar deaths elsewhere in the country. He told TOI, "We need an exclusive legislation on pesticide management to address the issues related to unsafe use of pesticides".

## II. TOP COMMENT

*India is 3rd world country, so any nonsense is possible steven holmes*

Meanwhile, the Maharashtra government on Wednesday named Monochrotophos as one of the five chemical solutions which could be banned from being sold. The agriculture department, which is considering a 60-day ban, has sought views from experts and various stakeholders. Referring to

international code of conduct on pesticide management, the CSE flagged a provision which says all pesticides whose handling and application require the use of personal protective equipment that is uncomfortable, expensive or not readily available should be avoided, especially in the case of small-scale users and farm workers in hot climates.

The think-tank said that the pesticides such as Monocrotophos, Oxydemetonmethyl, Acephate and Profenophos were believed to be responsible for the deaths and illness in Maharashtra. Pesticides like Monocrotophos and Oxydemeton-methyl are considered Class-I pesticides by the World Health Organisation (WHO). "Since Class-I pesticides can be fatal at a very low dose, many of these are banned in several countries", said the CSE, seeking a proper mechanism on pesticide use in India.

## III. PESTICIDE USE IN INDIA

There are 234 pesticides registered in India. Out of these, 4 are WHO Class Ia pesticides, 15 are WHO Class Ib pesticides and 76 are WHO Class II pesticides, together constituting 40% of the registered pesticides in India. In terms of consumption too, the greatest volumes consumed are of these poisons.

The following is a broad picture of the top pesticide-consuming states in India (total pesticides consumed, in metric tonnes of technical grade material, during 2005-06 to 2009-10, as per official data of the Directorate of Plant Protection, Quarantine and Storage, Govt of India).

Sl. No.	State	Total pesticides consumed
1	Uttar Pradesh	39948
2	Punjab	29235
3	Haryana	21908
4	Maharashtra	16480
5	Rajasthan	15239
6	Gujarat	13430
7	Tamil Nadu	12851
	All India	210,600

Most consumed pesticides in the country (during 2005-06 to 2009-10)

Sl. No.	Pesticide (Technical Grade)	Quantity consumed (metric tonnes)
1	Sulphur (fungicide)	16424
2	Endosulfan (insecticide)	15537
3	Mancozeb (fungicide)	11067
4	Phorate (insecticide)	10763
5	Methyl Parathion (insecticide)	08408
6	Monocrotophos (insecticide)	08209
7	Cypermethrin (insecticide)	07309
8	Isoproturon (herbicide)	07163
9	Chlorpyrifos (insecticide)	07163
10	Malathion (insecticide)	07103
11	Carbendazim (fungicide)	06767
12	Butachlor (herbicide)	06750
13	Quinalphos (insecticide)	06329
14	Copper oxychloride	06055
15	Dichlorvos (insecticide)	05833

#### IV. CARCINOGENIC PESTICIDES: INDIAN SITUATION

The following is a list of 24 pesticides registered and used in India, classified as Potential Carcinogens by the US EPA: Acephate (C), Alachlor (B2), Atrazine (C), Benomyl (C), Bifenthrin (C), Captan (B2), Chlorothalonil (B2), Cypermethrin (C), Dichlorvos (C), Diclofop-Methyl (C), Dicofof (C), Mancozeb (B2), Methomyl (C), Metolachlor (C), Oxadiazon (C), Oxyflourfen (C), Permethrin (C), Phosphamidon (C), Propiconazole (C), Propoxur (B2), Thiodicarb (C), Thiophanate Methyl (C), Triadimefon (C), Trifluralin (C).

As can be seen, some of these are also listed in the most-consumed pesticides list in the table above!

As per the EPA classification of carcinogenic pesticides, B indicates Probable Human Carcinogen (B2 indicating sufficient evidence of carcinogenicity from animal studies and C indicates Possible Human Carcinogen (limited evidence of carcinogenicity in animals, in the absence of human data).

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