



Case Report

The neglected aspects of pesticides management bill 2020: A review

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Background

Agriculture is an integral part of Indian life and culture since times immemorial. It is not just only a means of livelihood but a way of life influencing the socioeconomic structure of our country. The green revolution period of the 1960s necessitated the increased use of pesticides and fertilizers which became a new normal in practice.[1] The Government of India passed the Insecticides Act in 1968 to govern the import, manufacture, sale, transport, distribution, and use of insecticides to ensure their safety and effectiveness, as well as prevent risks to human and animal health. The act also provides for the registration and licensing of insecticides and establishes penalties for any violation of its provisions.[2] The government is planning to introduce new legislation, Pesticides Management Bill 2020 to replace the outdated one. The new bill aims to address the issues of outdated and unscientific registration criteria, lack of stricter penalties for spurious pesticides and deceptive advertisements, inadequate regulation of pesticide pricing, and proper disposal of pesticides in an environmentally-friendly manner. This legislation is expected to cater to the multidimensional needs of today's agriculture sector and provide better protection to farmers from fraudulent practices in the pesticide market.[3]

Abstract:

The Pesticides Management Bill 2020 aims to address the issues of outdated and unscientific registration criteria, lack of stricter penalties for spurious pesticides and deceptive advertisements, inadequate regulation of pesticide pricing, and proper disposal of agrochemical substances in an environmentally-friendly manner. The proposed legislation is expected to cater to the multidimensional needs of today's agriculture sector and provide better protection to farmers from fraudulent practices in the pesticide market. The bill also proposes to incorporate measures to regulate and standardize treatment protocols for acute toxicity, particularly in cases of suicidal poisoning in the Indian rural population. It is also essential to ensure that pesticide manufacturers take up their corporate social responsibility by establishing poison control centres and antidote depots. These measures are crucial to ensure the safety and well-being of farmers, pesticide applicators, the environment, and the general public.

Discussion

The Pesticide Management Bill, 2020, which was introduced in the Rajya Sabha, provides for regulating the manufacturing, importing, sale, storage, distribution, use, and disposal of pesticides to guarantee the supply of safe pesticides and minimize the risks to humans, animals, and the environment. The Bill defines pests as “animals, plants, or pathogenic agents that are injurious to plants, plant products, human beings, other living creatures, and environment” and pesticides as “substances with chemical or biological origin intended for preventing or destroying any pests in agriculture, industry, pest control operations, public health, storage or for ordinary use or a substance used as a plant growth regulator or a substance applied to plants before or after harvest to protect them from deterioration.”. The Central Pesticides Board will be established under the Act to provide the government with scientific and technical advice, establish standards and best practices, and formulate procedures for the management of pesticides. The Registration Committee will be in charge of providing pesticide certificates of registration based on criteria such as safety, efficacy, necessity, end-use, risks, and accessibility to safer alternatives. For manufacturing, distributing, selling, or participating in pest control activities, a license will be necessary for any company or manufacturing unit. If the licensee violates the Act's provisions or provides false or misleading information, their license may be cancelled.

The government, if necessary, may establish an authority under the Act to control pesticide pricing. If a pesticide affects human health or the environment or interferes with international trade, the Central and State governments may prohibit its use, distribution, or sale. Pesticide inspectors may be appointed to enter and search properties, seize documents or pesticide stock, and send samples for testing and analysis. Manufacturing, importing, distributing, selling, exhibiting for sale, transporting, storing, or conducting pest control operations without a proper license or certificate under the Act can impose imprisonment of up to three years or a fine of Rs 10 lakh to Rs 40 lakh, or both.

Regarding the new Pesticides Bill, 2020 the Standing Committee on Agriculture, Animal Husbandry and Food Processing has made certain recommendations. They propose narrowing the definition of the term 'pesticides' to exclusively refer to substances with pesticidal effects as specified in the Registration Committee's Schedule. According to them, a broad definition of a 'pesticide' as mentioned in the Bill will regulate the traditional pest control measures like they regulate chemical pesticides. They also suggest giving the Central Pesticides Board the authority to supervise the operation of the Registration Committee, imposing a two-year deadline on the disposal of pesticide registration applications, and mandating that a Review Committee made up of biosafety and agroecology experts conduct periodic reviews every ten years. The Committee also suggests establishing a grievance redressal mechanism to deal with the menace of unscrupulous pesticide inspectors and analysts, appointing a licensing committee with 3-4 persons instead of just one licence officer to give licenses promptly, and defining minimum qualification requirements for pesticide merchants, dealers, and stockists which are not specified in the Bill were some of the other suggestions by the Committee.[4]

The pesticide industry raised several concerns about the vague definition of 'risk' as probability and severity of adverse health or environmental effect due to a particular pesticide which can become extremely detrimental to their business. The industry has also voiced opposition to the proposed unscientific pesticide blanket ban mechanisms in the bill. Furthermore, the industries questioned the lack of effective data protection, the complicated registration process causing delays and increased expenses, and the absence of stakeholder input during the drafting process. Industries believe that the bill needs to be revised to balance their interests with the protection of the environment & public health.[5]

The proposed legislation includes a provision to evaluate the impact of pesticides on the environment, which in turn encompasses various domains such as biodiversity, ecotoxicology, environmental toxicology, and

nutritional toxicology. The term 'environment' is a new addition to the concept of pesticide management in contrast to the insecticides act. This bill also openly brought forward some other aspects related to toxicology. The Central Pesticides Board which will be established under the Act inter alia is also entrusted with the function of formulating workflows/protocols to handle poisoning cases and mitigate agrochemical poisoning incidents in India. Moreover, the bill also proposes to include a medical toxicology expert to advise the government on certain matters regarding the control, management, and regulation of pesticides. The Registration committee proposed to be established under the Bill shall also consist of a member who is a designated representative of any institute of national importance conducting research in toxicology. He/ She shall be an ex-officio member.

The proposed Pesticides Management Bill 2020 in India has not taken into account the concerns related to the occupational and environmental toxicology of pesticide manufacturing units. Although the Factories Act 1948, Water Act 1974, Air Act 1981, Environmental Protection Act 1986, and Biodiversity Act 2002, and their respective rules cover the general hazards related to these units, the absence of specific attention to this critical aspect of pesticide production is a cause for concern. In occupational settings, the parameters like Permissible Exposure Limits (PEL) and Time Weighted Average (TWA) for eight hours prescribed under Government of India (GOI) notifications are not exhaustive and may not include all the agrochemical substances manufactured in India from time to time. The compliance mechanism under the Factories Act under which all this is regulated is not up to the standard and is more generalist and rarely can look into aspects specific to the pesticide industry. For instance, exposure to multiple agrochemical substances simultaneously, synergistic effects of certain compounds, chronic subacute exposures, etc may be easily overlooked by current regulations under the factories act, which further necessitate a detailed regulatory framework under the pesticides bill.[6,7]

The release of pesticide residues, intermediaries, and breakdown products into the ambient environment from agrochemical industries poses significant ecological threats. Such contamination can lead to survivor stress among certain species, ultimately impacting biological communities' evolution and successional patterns. This can ultimately result in the biomagnification of these contaminants through the food chain, leading to chronic and acute toxicity to higher trophic levels. Sadly, these concerns were not reflected in the Pesticides bill.[8]

The bill failed to address several key issues relating to farmers and other pesticide applicators' safety. The long-term morbidity brought on by pesticide use has not been considered. The impacts of persistent organic pollutants on both on- and off-target organisms, as well as their long-term effects like pest resistance on the agriculture industry, have not been discussed. The bill failed to consider how some pesticide residues can harm natural toxin remediation methods in the environment. Additionally, the effect of pesticide residues on the health of the general populace has also been disregarded. To ensure that the bill adequately tackles these issues, policymakers should take more input from experts in different sectors with ecological sustainability and public health as two final goals.[9]

The Pesticides Management Bill 2020 falls short in several key areas regarding the safety and regulation of pesticides in India. One such area is the standardization of treatment protocols for acute toxicity, particularly in cases of suicidal poisoning in the Indian rural population. The bill also fails to address the issue of regulating the unintended use of pesticides for committing suicide, despite the high incidence of such cases. One of the undisputed reasons for suicide by using pesticides is easy accessibility to the large population. This Bill should bring forward certain measures to restrict the excess availability of pesticides, when unnecessary. For example, pesticides that are commonly used to control domestic pests such as rodents, cockroaches, bed bugs, etc., are not sold over the counter in the United Kingdom (UK). The occupier of the

residence with the pest is required to file a pest control application with the Council and the Council will allocate a recognized pest control agency to resolve the issue. The pest control agency will have a complete record of the pests found, and pesticides used as per the standard pest control protocols.

We advisemandating manufacturers to provide detailed information on the availability of antidotes for their substances. The Material Safety Data Sheet of pesticides should also contain the details of ways to procure antidotes in times of emergency. Furthermore, pesticide companies must take up the responsibility of establishing poison control centres , regional agrochemical substance antidote depots and supply chains, and organizing awareness campaigns among medical professionals to deal with poisoning cases. This should be explicitly described as their corporate social responsibility in the bill.

The bill must also incorporate the requirement for a thorough review of any pesticide banned in any part of the world before its registration in India. This measure will ensure the safety of farmers, pesticide applicators, and the environment. Additionally, the registration board should substitute all agrochemical substances without available antidotes with safer alternatives. The food processing industry and the safety levels of pesticide residues are other areas that require attention in the bill. Overall, the bill must encompass a more comprehensive approach to address the occupational, environmental, and public health concerns associated with agrochemical substances in India.

Conclusion

The Pesticides Management Bill 2020 needs to incorporate measures to regulate and standardize treatment protocols for acute toxicity and address the issue of unintended use of pesticides for committing suicide. The legislation should ensure maintaining a central database to allow the prescribed use of pesticides through agriculture extension services and toxico-vigilant mechanisms. Such enforcement methods can make it difficult for people to use pesticides for

unintentional purposes such as self-harming. It is also essential to ensure that pesticide manufacturers take up their corporate social responsibility by establishing poison control centres and antidote depots. The Act should create a corpus fund for research and development of novel antidotes in pesticide (for all the scheduled pesticides) poisons. The registration board must review all banned pesticides worldwide and substitute agrochemical substances without available antidotes with safer alternatives. Additionally, the bill should cover the safety levels of pesticide residues in the food processing industry. These measures are crucial to ensure the safety and well-being of farmers, pesticide applicators, the environment, and the general public. Last but not the least, occupational and ecotoxicological concerns also need further attention in the bill.

Limitations

In this review, scientific concerns related to the proposed pesticide bill have been presented, without going into the legal details or a point-by-point analysis.

Competing Interests

None to declare

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Nil

Ethics Committee Approval

Not applicable

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