



Agricultural pollution

calls for our Attention

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Introduction

Most newspapers and magazines reveal that currently, terrorism is a human threat, but we are unaware of a growing monster called global pollution. One may ask, how long this human developmental activity be allowed to inflict damage to our environment? India is the second largest agriculture-based country in the world. Huge portions of the Indian population are making their livelihood through agriculture and allied sectors. Agriculture represents 18.8% of India's gross domestic product (GDP) and almost 70% of the 1.2 billion Indian population depend on agriculture primarily, which provides employment and sustenance of life. Agricultural production contributes nearly 40% of India's national income and about 31% of total export earnings. To cope with an ever-growing population agricultural production has to increase and as a consequence fertilizers and pesticides are dumped on soil indiscriminately that creating pollution problems, particularly, soil pollution is of greater concern in India. Pesticide spray can drift and pollute the air, whereas fertilizers secrete into soils and groundwater which can end up in drinking water.

Among the total pesticides used in India more than 70% are used in the agriculture sector. Cotton, rice, and vegetables use a maximum quantity of pesticides in the country. Of the total annual pesticide usage, 45% is used in cotton alone which occupies only 5% of the cropped area in India. The green revolution made it possible to create high-yielding crops such as *Bt* cotton, however, rice and vegetables use a maximum quantity of pesticides in the country. Of the total annual pesticide usage, 45% is used in cotton alone which occupies only 5% of the cropped area in India. The green revolution made it possible to create high-yielding crops such as *Bt* cotton. However, it encouraged farmers to use large quantities of fertilizers and pesticides. In an attempt to limit the damage caused by

pest infestations, Indian farmers now apply an estimated 43963 metric tons (MT) of pesticides used annually on food commodities. This represents 55% of the country's entire expenditure on agricultural pesticides a truly disproportionate figure given that cotton accounts for just 5% of India's total cropland.

There are more than 1000 pesticides used around the world to ensure food is not damaged or destroyed by pests. A major problem of pesticides is their effect on "non-target organisms". Most pesticides are very toxic to predators, parasites, fish, and people who came into contact with these chemicals. The different pesticide has different properties and toxicological effects.

Among the chemical pesticide usage in India, 60% are insecticides followed by fungicides and bactericides (20%), herbicides (17%), and other chemicals (3%) while in western countries, herbicides usage is the highest. The world average for herbicide use is about (45%) followed by insecticides (36%), fungicides (17%), and other chemicals (2%). Although it is estimated that less than 0.1% of pesticide applied to crops actually reaches the target, the rest of it enters the environment. Pollution due to the uncontrolled use of pesticides has become one of the most alarming challenges. Most farmers and field workers are illiterate or are less educated and they hence applied pesticides without screening and proper specific information, due to which various hazardous effects posed on the environment. Undoubtedly chemical pesticides have played an important role in increasing food production in India but their indiscriminate use has led to several environmental problems including the development of resistance in insects to insecticides, the resurgence of non-target pests, pesticide residue in food, fodder, and feed, destruction of beneficial insects like

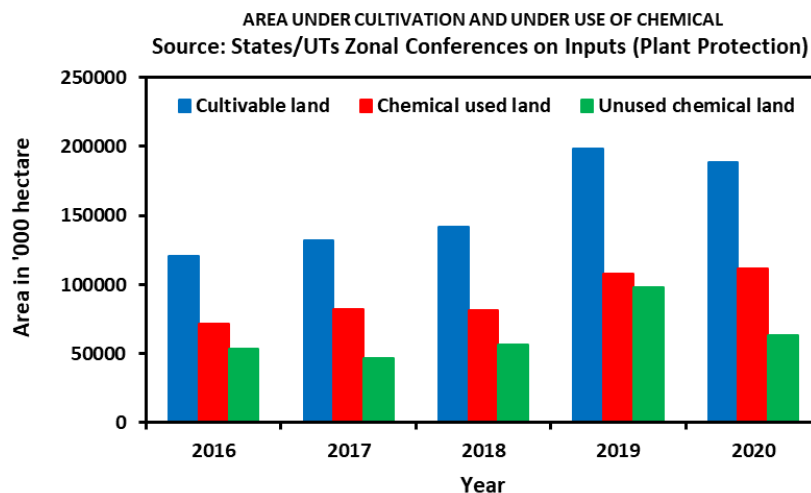
honey bees, pollinators, parasitosis, and predators. In fact, the use of chemical pesticides in agriculture has created a negative impact on human health, wildlife, and the environment as well for example; the blood samples of local residents of a

polluted area reveal traces of toxic chemicals and an observed 65% DNA mutations among the tested. Shall I dare to say that this is tantamount to violating basic human rights?

Conclusion

There is an endless list of potent pollutants that we are in contact with such as insecticides, herbicides, fungicides, nematicides, rodenticides, etc. we need to be wise in their usage and focus on sustainable development. Since consumption of chemical pesticides has increased to a larger extent and poses a huge threat to the environment and human health, it needs to be reduced by adopting other innovative eco-friendly approaches like biopesticides for the control of various pests. In spite of our current awareness of such issues regulation on their usage is slow or none. It is no more a local problem instead a global one and hence our responsible participation is imminent.

"Only when the last tree has died and the last river been poisoned will we realize we can't eat money" (Cree Indian Proverb)



COMMODITY-WISE CONSUMPTION OF CHEMICAL PESTICIDES during 2020-21
 Source: States/UTs Zonal Conferences on inputs of Plant Protection for Kharif & Rabi Seasons

