A REVIEW :

Pesticide contamination in food items: Threatening for human health and environment

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SUMMARY

In agriculture, the conditions and rules have changed in an unprecedented way over recent years. Crop protection is questioned as never before. Not only have the rules changed, but also alternative techniques are increasingly challenging the chemical approach. According to need of the food security, we have to make the point again and again that without chemically protecting our agricultural commodities, there would not be enough to eat. Farmers would also be unable to make a living producing food. To feed ever-increasing population and ensure sustainable agriculture production, the coupling of chemical technology with biotechnology seems to be the only solution if we wish so avoid mass starvation. Whatever may be the production and protection technology, quality of food we eat must be excellent, free from man made or natural toxins. It is therefore duty of producers, scientists and policy makers to make quality food available to consumer so that his confidence is not shaken. Education of farmers/users of pesticides is absolutely essential to cause awareness about hazards of pesticide residues and to bring down contamination of food commodities and environmental components.

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India became self -sufficient in food production by ushering green revolution in mid sixties. It became possible because full yield potential of varieties and hybrids of different crops was fully exploited by ensuring effective plant protection umbrella coupled with efficient soil, water and nutrient management. Among all different plant protection tools, pesticides played most significant role in enhancing crop production by ensuring security against vagaries of insect-pests and diseases. The last decade has seen change in pesticide usage pattern both in class and type of pesticides used in agriculture and public health programme. In general, percentage consumption of fungicides and herbicides has increased with simultaneous decrease in consumption of insecticides. Among insecticides, consumption of organochlorine pesticides has declined from 14 to 14.5 per cent while consumption of organophosphorus insecticides has increased from 30 to 74 per cent, carbonates from 15 to 4.5 per cent and synthetic pyrothriods from 10 to 5 per cent. A modest consumption of natural pesticides (neem and Bt. formulations) was registered during this period. The average consumption of pesticides in Indian agriculture was 1.2 g ha $^{-1}$ in 1953-54, which increased to 431g. Thereafter consumption of pesticides showed declining trends up to 2000- 01, however, in the recent years, average consumption of pesticides further increased due to intensive cultivation and changed scenario of environment, which generate new races of insect and pest. The average consumption of pesticides in India is much lower than consumption of the consumption of pesticides on different crops like gram, jute, rapeseed-mustard, soybean, sunflower and tobacco are less than 1 per cent. According to Harr (2002) we have to make the point again and again that without chemically protecting our agricultural commodities, there would not be enough to eat. Therefore, to feed ever-increasing population and ensure sustainable agriculture production, the coupling of chemical technology with biotechnology seems to be the only solution if we wish so avoid mass starvation. An average consumer