RECOMMENDATIONS
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On the basis of our observation, the following points are recommended:

- The OCP residue analysis showed that almost all the bovine and human milk were contaminated with residues of highly persistent OCPs like aldrin, HCH, DDT and endosulfan. The reasons may be improper handling of pesticides and feeding the animals on contaminated feeds. The responsible bodies (Government and the NGO’s) should take into account that the above mentioned reasons are addressed to allow quality milk (residue free) to the processors and the consumers. This would enhance the dairy sector economically and would also serve the purpose of providing nutritious food to its people for their health.

- Government and the NGO’s should carry out aggressive campaign for educating farmers and promoting bio-pesticides and organic farming. The farmers have to be well informed and educated about the recommendations of Joint Parliamentary Committee (JPC), Central Insecticides Board and Registration Committee (CIBRC) and the Food Safety and Standards Authority of India (FSSAI).

- Government should keep a strict vigilance on the pesticide dealers who are aware of the CIBRC recommendations but in most cases ignore it.

- The seasonal variation analysis showed that there was a significant difference in the level of pesticide residues in both bovine and human milk. The Government and the NGO’s are to address the issue of change in pesticide residue level in milk in different seasons. Seasonal variation of pesticide
residues in milk is a common environmental phenomenon and so the state can keep the standard in accordance with the seasonal change instead of having one set standard throughout the year. This would benefit all the members of the dairy chain – the producers, processors and the consumers.

- By comparing the detected OCP residue levels with the WHO/FAO/FSSAI recommended MRL, it was revealed that in most of the bovine and human milk samples the HCH and DDT levels exceeded their respective MRL. Government and the NGO’s should ensure that the recommendation made by the JPC is completely followed. The CIBRC should register only those pesticides whose MRL (crop wise, food product wise) has already been set by WHO/FAO/FSSAI.

- The State Agricultural Universities should consider the recommendations of CIBRC while recommending pesticides so that there is no difference between recommendations enabling the easy monitoring of the pesticide residues in crop.

- The Government should also ensure that pesticide MRLs for some commodities like fruits, vegetables, milk and milk products, meat etc be revised from time to time.

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- Because of the potential for long-term damage to critical structures such as the nervous system, immune system and endocrine system, prevention of all acute poisoning events as well as of exposure to low doses during development is a high priority for ensuring children’s environmental health. There are many steps that can be taken at the local/practice and national/government level to decrease exposure to pesticides and related illnesses.

- Prevention of Exposure:

  1. Local Level

     Pesticides should be used only when the benefits outweigh the risks, and non-chemical pest control procedures have failed. Cosmetic use of pesticides, that
is their use to control aesthetically unpleasant plants or non dangerous insects such as crickets or house millipedes, should be completely avoided. Integrated pest management (IPM) procedures which include hygiene, sealing of cracks and crevices, screening of doors and windows, and other measures should be the first line of defence for pest management. If pesticides must be used, they should be stored only in their original containers with manufacturer's labels intact, preferably with child-proof seals, out of the reach of children and in locked cabinets or cupboards. Users should always follow the safety precautions specified by the manufacturer and observe all safety recommendations including use of gloves, masks, protective clothing and observation of re entry times (the time when it is safe to return to a treated area). Pregnant women should not apply pesticides and particular care should be taken to determine appropriate re-entry times for pregnant women, infants and small children (UNEP 2004 and US EPA 2004).

2. Community Level

Many organizations (especially FAO and WHO) promote alternative non-chemical forms of pest-control and there is increasing engagement in non-pesticide dependent agriculture and integrated pest management (IPM). A variety of local initiatives involving the community can help to create an environment that promotes decreased dependence on pesticides in homes, schools, public areas, health facilities and parks. Examples of community activities include: community campaigns and school activities, local awards or contests, pesticide-free ‘zones’, support for organic farming FAO (Food and Agriculture Organization).
3. National Level

Education is a key component of safe pesticide use and prevention of toxic exposures. Farmers, pesticide applicators and their families need to be informed and educated on how to recognize and prevent pesticide poisonings. Trained or licensed pesticide applicators can maximize preventive measures. Bans and restrictions on use of pesticides found to be highly toxic or persistent in the environment have been successful; severe poisonings are seen less frequently than in the past. For example, organochlorine poisoning no longer occurs in countries that restrict their uses to a specific agricultural application and have banned domestic use. A major change in regulatory approaches to pesticides occurred when the US Congress passed the Food Quality Protection Act in 1996. This law requires the US Environmental Protection Agency to set residue levels for foods to protect the most vulnerable populations, specifically infants, children and fetuses (pregnant mothers) from harm due to cumulative exposure taking into account all routes of exposure. This law has led to the restrictions on use and voluntary withdrawal from the market by manufacturers of several previously widely used pesticides (e.g. chlorpyrifos and diazinon). Pesticide manufacturers and governments should follow the voluntary FAO International Code of Conduct on the Distribution and Use of Pesticides (UNEP 2004 and US EPA 1996)

- Health and environment professionals have a critical role to play in maintaining and stimulating changes that will restore and protect children’s environmental health, and protect them from pesticide exposure. Health care providers can do something. At the one-to-one level with the patient, they can
include pesticide poisoning in the differential diagnoses and in preventive advice. They can be dissatisfied with the diagnosis of “idiopathic” in cases of paediatric disease and look harder for evidence pointing to pesticides as a potential cause of disease and disability. They can ask specific questions about the use of pesticides within the home, in the garden or farming areas, or about potential pesticide residues in fruit and vegetables. Which pesticides are being used? When? Where? How? What safety and hygiene measures are being taken? Are the instructions being read and followed? They can publish sentinel cases and develop and write about community-based interventions in relation to pesticides. They can educate patients, families, colleagues and students didactically to diagnose, treat and prevent pesticide poisonings and exposures. They can discourage chemical pesticide use and encourage integrated pest management. They can also provide information about the local Poisons Centre or other sources of information on pesticides. As professionals with an understanding of both health and the environment, health care providers are powerful role models who can practice integrated pest management, be advocates for strict pesticide laws and regulations, proper labelling of pesticide products and child-proof containers for all pesticide products.