



Pesticides & Consumers

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[OFM](#) & [reStore](#)
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Who is affected?



- Consumers, who do not even know or try to connect the dots between environmental toxins, unsafe food and their health!
- Don't forget- Farm workers and farmers are also consumers – more in number than distant urban consumers!
- They have to put up with contamination of air, water, soil as well as their own contaminated food – except those wise ones who poison-free food for themselves
- What of production units? For eg: Bhopal gas tragedy & subsequent contamination affects so many till date!
- Pesticide dealers/vendors/workers in retail outlets at risk too.....



Health Implications of these 27 pesticides & others too...

- Acute Impacts – poisonings – occupational, intentional and accidental
 - Chronic impacts & correlations:
 - Skin problems
 - Reproductive health
 - Neurotoxicity
 - Genotoxicity
 - Carcinogenicity
 - Diabetes, Obesity etc.
 - Fetal deaths, Birth defects, Altered growth etc.
- WOMEN, CHILDREN & MALNOURISHED MOST VULNERABLE**



Immune System Impacts....

- We may not be correlating many health impacts with pesticides which are known to cause immune system impacts
- Malnourishment also a compounding risk factor in countries like India
- ***What about situations like the Covid-19 pandemic and our immunity to fight which could get compromised by pesticides and other toxins?***

WHO Classification of Pesticides

- 1a – Extremely Hazardous
- 1b – Highly Hazardous
- II – Moderately Hazardous
- III – Slightly Hazardous
- U – Unlikely to present acute hazard

(ref: WHO recommended classification of pesticides by hazard and guidelines to classification, 2019 edition. Geneva:World Health Organization; 2020)

For an urban consumer what does this mean?

How do these piece-meal toxicity classifications matter? Why don't we have comprehensive indices?

Hazard & Risk :

Independent studies & analyses are a must

Comprehensive assessment a must

Long term tests a must

Transparency a must

Our use conditions as a reality in regulatory decision-making

“MRLs”

- Webinar Part 1 showed [how MRLs are an inadequate tool](#) and don't indicate food safety
- Govt's MPRNL (Monitoring of Pesticides Residues at National Level scheme): *“During 2014-19, a total of 1,18,035 samples have been collected and analyzed, out of which 2,950 (2.5 %) samples were found exceeding Maximum Residue Level fixed by the Food Safety and Standards Authority of India (FSSAI). Further, no residues of banned pesticide have been detected under the MPRNL Scheme” (LS Qn No.2630)*

Independent studies show something else....

- Ramesh, H. L., and VN Yogananda Murthy. "Evaluation of pesticide residual toxicity in vegetables and fruits grown in Bangalore rural district." *Int. J. Pharm. Sci. Rev. Res* 21.2 (2013): 52-57.
- Mittal, Sunil, Gurpreet Kaur, and Gajendra Singh Vishwakarma. "Effects of environmental pesticides on the health of rural communities in the Malwa Region of Punjab, India: a review." *Human and Ecological Risk Assessment: An International Journal* 20.2 (2014): 366-387
- Agarwal, Akriti, et al. "Pesticide residue in water—a challenging task in India." *Environmental monitoring and assessment* 187.2 (2015): 54
- Pujeri, U. S., et al. "Analysis of pesticide residues in vegetables in Vijayapur, Karnataka India." *World J Pharm Pharm Sci* 4.7 (2015): 1743-1750.
- PK Maurya and DS Malik. "Accumulation and distribution of organochlorine and organophosphorus pesticide residues in water, sediments and fishes, *Heteropneustis fossilis* and *Punctius ticto* from Kali River, India. *J.Toxicol.Environ.Health.Sci.* (2016) Vol. 8(5), pp30-40
- Nishant N and Upadhyay R. "Presence of pesticide residue in vegetable crops: a review" (2016). *Agricultural Reviews*. Vol. 37(3). Pp 173-185
- Geetanjali Kaushik et al. "Pesticide residue dissipation upon storage and processing in chickpea legume for food safety" (2016). *Advances in Food Technology and Nutritional Sciences*. Vol.2(2) pp 64-72
- RS Khilare et al. "Occurrence of Organophosphorus pesticide residues in poultry feed and meat" (2017). *Haryana Vet.* 56 (1), pp 17-20
- Atul Kumar et al. "Pesticide residues in Indian raw honeys, an indicator of environmental pollution" (2018). *Environmental Science and Pollution Research*, 25, 34005-34016
- D Kumari and S John. "Health risk assessment of pesticide residues in fruits and vegetables from farms and markets of Western Indian Himalayan region". (2019). *Chemosphere*, Vol. 224, pp 162-67
- Arpana Singh, SK Nag and Sultan Singh. "Occurrence of Organophosphate and Synthetic Pyrethroid pesticide residues in animal feed – an assessment" (2020). *Animal Nutrition and Feed Technology*. Vol. 20 (1). Pp 13-24

Source: Quick, sample compilation by Amrutha Varshini & Alzany Osman, two ASHA volunteers

MRLs also not fully determined for all pesticides & registered uses...

- A comparison of Registered Uses of 27 proposed-to-be-banned on the pesticide regulators' website as on 31st January 2020 <http://ppqs.gov.in/divisions/cib-rc/major-uses-of-pesticides> and MRLs fixed on FSSAI website ([https://archive.fssai.gov.in/dam/jcr:592ff0e4-6897-44a4-b28e-5d69f9955c77/Compendium Contaminants Regulations 20 05 2019.pdf](https://archive.fssai.gov.in/dam/jcr:592ff0e4-6897-44a4-b28e-5d69f9955c77/Compendium%20Contaminants%20Regulations%200%2005%202019.pdf)) as on May 20th 2019 shows gaps between regulated uses and MRL fixation.
- Food related uses without defined MRL: 47 (percent of food-related permitted uses without defined MRL 19%)
- MRLs not fixed completely for 9 pesticides (carbofuran, chlorpyrifos, dimethoate, malathion, monocrotophos, quinalphos, thiophanate-methyl, thiram & ziram)

(data compiled by Divya Veluguri)

Some further studies...

Suicides & Pesticides

- "[Bans of WHO Class I Pesticides in Bangladesh—suicide prevention without hampering agricultural output](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5837375/pdf/dyx157.pdf)" available at <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5837375/pdf/dyx157.pdf> concludes that : Strengthening pesticide regulation and banning WHO Class I toxicity HHPs in Bangladesh were associated with major reductions in deaths and hospital mortality, without any apparent effect on agricultural output. Our data indicate that removing HHPs from agriculture can rapidly reduce suicides without imposing substantial agricultural costs.
- <http://centrepsp.org/current-projects/sri-lanka>
Sri Lanka's pesticide regulations have contributed to one of the greatest falls in suicide rates ever seen in the world. Sri Lanka has reduced its suicide rate by 70% (or 93,000 lives) through a series of regulation of pesticides since 1995 (Knipe et al. The Lancet Global Health). Having peaked at 57 per 100 000 population in the early 1990s, its incidence is now 17 per 100 000 each year and continuing to fall. However, removal of problematic pesticides from agriculture by regulation then results in other pesticides becoming popular in agriculture and for self-harm. Therefore, there is a need to continue to monitor pesticide suicides to identify problematic replacements in a timely manner.
- <https://www.thelancet.com/action/showPdf?pii=S2214-109X%2817%2930299-1> (a reputed global study including 16 Countries)

National bans on highly hazardous pesticides, which are commonly ingested in acts of self-poisoning, seem to be effective in reducing pesticide-specific and overall suicide rates.

While there is no data to show yield declines with pesticide bans, there is evidence of this positive kind from such bans!

Let us have holistic science guiding our regulatory decisions

- MRLs not a food safety indicator – Even Delhi High Court studies show that even limited government MRL data is not reflected in other studies
- Science has never been democratic or poor friendly or fair: let us insist for independent research/ testing and putting up data on public domain: BUT ENSURE ITS NOT ONE REDUCTIONIST PARAMETER. COME OUT WITH DEPENDABLE COMPOSITE INDEX.
- Let regulators include complete dietary intake for creating tools of food safety.
- Let acute toxicity, chronic toxicity, reproductive disorders, immune compromising effect etc. etc. be taken into account


(Eco)Logical

- Science and scientists as propagated by the industry need to be questioned
- Isn't it logical that ecology, farm livelihoods, Human & environment's health matter more
- We run a consumer cooperative in Chennai where we sell farm produce that are grown & processed without pesticides/synthetic chemicals
- We have many customers esp old members vouching for improvement in their health/ immunity.
- Our Consumers are not just interested in safe food on their platter but who come out in open for farmers issues, supporting traditional seeds, opposing GMOs, stopping pesticide deaths etc. They also care about Mother Earth
- We on behalf of the huge number of consumers in our coop, **assure the farmers that if they produce safe food without such harsh chemicals, many of us out here will support/consume/spread**
- In fact, high quality safe food fetches premium price for many organic farmers now
- It is beyond making our plates being poison-free- farm livelihoods, ecology, water & air, future generations ...

Open & shut case

- Recognise it is poison. We don't need them on our plates or farms. Period.
- Make it mandatory to perform a needs and alternatives assessment before registering any pesticide
- Bio safety should be the primary concern not 'somehow registering'
- Accept it's "Sunset Boulevard!"
- Go organic. Atma Nirbharata or Self reliance is the key.
- Note that Self Introspection- **AathmaNirikshan** is as important as AtmaNirbhar. You cant be dishing out poison for profit sake, for ever!

WE ARE FOR FARMERS & THEIR INTERESTS – WE URGE THEM TO JOIN THE POISON-FREE FOOD MOVEMENT



It is estimated that less than **0.1%** of pesticides used for pest control fall on targeted pest!