



Pesticide Cocktail: Not a Booze You Need

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The Agriculture industry being the backbone of Indian economy contributes to around 16.5% of India's GDP and is expected to reach USD 580.82 billion by 2028. But with the increasing market value of agriculture the risk of pesticide is also increasing at an alarming rate as farming system of India rely mostly on the use of pesticides to secure the yields. Due to this rigorous use of pesticides, pesticide residues are found in soil, water body, plants, animals and humans. India ranks 12th in the world for pesticide use and is the major producer of pesticides in Asia. Despite having a far lower average pesticide usage than many other industrialised nations, India has a serious pesticide residue problem. In India, 51% of food products are polluted with pesticide residues, and 20% of these products have pesticide residues that are higher than the global maximum residue levels.

We have been reading about pesticide's detrimental consequences since elementary school, but there's a new concern circulating known as PESTICIDE COCKTAIL EFFECT which means that pesticides can become more dangerous when combined together, even if each chemical is at or below their "no-observed-effect-concentration". There is emerging evidence that pesticides may mix to become more harmful, even if safety limits are still set for just one pesticide at a time. The Pesticide Regulatory Board devised to protect life forms and environment from pesticide focuses only on individual pesticide and safety assessment is done on one pesticide at a time and overlooks the cocktail effect. This negligence of the system can lead to many health hazards like formation of cancer cells, malfunctioning of the endocrine system, which can result in the disruption of hormone synthesis, which controls, among other things like metabolism, growth and development, organ function, sexual wellness, and reproductive health. Pesticide combinations have been linked to obesity and poor liver function, even when individual chemical exposures are below regulatory safety thresholds.

To address this issue the Regulatory body must form an action plan to decrease exposure to the most prevalent chemical combinations found in individuals and the environment also chemicals should be evaluated and managed as groups of related compounds by calculating Mixture Assessment Factor (MAF) rather than as single substances. As an alternative to chemical plant protectants, those involved in agriculture should strive to employ natural and safe compounds to eradicate the problem from the root level.