Wake up to Children's Exposure to Pesticides

(The editorial is based on the article "Wake up to Children's Exposure to Pesticides" which appeared in The Hindu for 25th February 2019. In this article, we will discuss the issues related to the early exposure of children to pesticides.)

Children need striving environment for growth. **Now- a -days younger generation is falling sick frequently than the previous generation.** The problem may become worse in the upcoming days. Doctors are of the opinion that since our children are growing up in heavily polluted cities, they are more prone to asthma and other infections.

Apart from above-mentioned reasons, there is another factor that young parents need to worry about — **early exposure of children to pesticides.**

- A recent study published in the PLOS Journal of Medicine establishes that **prenatal exposure to organophosphates puts children at risk of reduced IQs, memory, attention deficits, and autism.**
- **There is no evidence of a safe level of organophosphate pesticide exposure for children.** Well before birth, organophosphate pesticides are disrupting the brain in its earliest stages, putting them on track for difficulties in learning, memory, and attention, effects which may not appear until they reach school-age.

What are Organophosphates (OP)?

- T**hese are a group of chemicals that were initially developed as human nerve agents during the 1930s and 1940s, to be used by the Nazis during the war**. These were later adapted as insecticides.
- **OPs are ubiquitous — a group of pesticides which is rampantly used in agriculture, gardens, pest control in homes and offices.** Once OPs are sprayed on food crops, they find their way into the food chain. OPs have been detected in ghee, butter, honey, and soft drinks.
- OPs have also been **known to leach into water bodies close to agricultural fields**. This varied exposure from different sources leads to bioaccumulation in our bodies.

Concerns

- In 2018, Scientists at the National Institute of Nutrition Hyderabad studied urine samples of children for the presence of OPs. They found that urine samples of Hyderabad children contained 10 to 40 times more OPs as compared to children in the US and Europe.
- **Indian children are more prone to the risks of organophosphates exposure.**
- Children are also more vulnerable because their bodies' natural detoxification systems are immature and hence they are slower in eliminating pesticides from their bodies, compared to adults. **The government has done very little here.**
- **Close to 40 kinds of OPs are allowed in India.** The Verma committee had suggested restricting/withdrawing some of these OPs.
- However, not much progress has taken place since the committee submitted its report in 2015. Several thousand tonnes of pesticides, including OPs, are sprayed annually.
- **Quite a few of these OPs like monocrotophos, malathion, and chlorpyrifos have been classified as highly to moderately hazardous by the WHO.** Many of these are banned or their use severely restricted in several countries, including the US and those in the EU.
- **Several studies have found that OPs are indiscriminately being used in India even on fruits and vegetables for which they have not been approved.** The government has not just allowed these chemicals in the country but has not taken any steps to inform the public.
- **Pest control in India is highly disorganized and least regulated; most times, the agencies are not even aware of the constituents in the concoction.** This is beside millions of people including pregnant women working on farms and being continually exposed to these pesticides.
- **In India, there is a scarcity of information on the magnitude of both intentional and unintentional poisoning, as well as on the relative importance of different pesticides.**

Way Forward

- **The licenses to manufacture and sell pesticides were granted 40 years ago**. Now we have plenty of new scientific data on the impact of these on children and adults — enough to revoke many of these licenses.
- **The government needs to examine all licensed pesticides and their health impacts.**
- There is a need to review and recommend improved pesticide regulatory policies. Implementing sustainable epidemiological surveillance and monitoring of pesticide poisoning in clinical settings and communities is the next step ahead.
- **Improving the medical management and mental health care of people with pesticide poisoning in health** care facilities at different levels is needed. Capacity

building should be done at different sectors and levels along with the sensitization on the issue.
- Community programmes that minimize the risks of intentional and unintentional pesticide poisoning should be developed or strengthened.
- **Government officials, in their decision-making, need to promote the sustainable use of chemicals.**

List of International Chemical Conventions

There are many international chemical conventions restricting or even banning the production, use, and trade of certain hazardous chemicals for the purpose of protecting human health and the environment.

- **Stockholm Convention on Persistent Organic Pollutants (POPs):** is an international treaty to protect human health and the environment from the harmful effects of POPs. The Convention was adopted on 22 May 2001 in Stockholm, Sweden and entered into force on 17 May 2004.
    - India's Union Cabinet gave its approval to ratify and accede to the Stockholm Convention on Persistent Organic Pollutants on 20 October 2005.
- **Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade:** is an international treaty promoting shared responsibility between exporting and importing countries in protecting human health and the environment from certain banned or restricted hazardous chemicals and pesticides, and providing a mechanism for the exchange of information about potentially hazardous chemicals.
    - The Convention was adopted on 10 September 1998 in Rotterdam, the Netherlands and entered into force on 24 February 2004.
    - India has ratified the Convention in 2005.
- **Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal:** is an international treaty aiming to protect human health and the environment against the adverse effects of hazardous wastes. The convention was adopted on 22 March 1989 and entered into force on 5 May 1992. More than 180 states have become parties to the Convention.
    - India ratified the Convention on June 24, 1992.
- **The Chemical Weapons Convention (CWC)** is an arms control treaty prohibiting the development, production, acquisition, stockpiling, retention, transfer or use of chemical weapons by States Parties. It is administered by the Organisation for the Prohibition of Chemical Weapons (OPCW) and entered into force in 1997.
    - India is a signatory and party to the Chemical Weapons Convention (CWC).
- **The Minamata Convention on Mercury** is a global treaty to protect human health and the environment from the adverse effects of mercury and its compounds. It was agreed at the fifth session of the Intergovernmental Negotiating Committee in

Geneva, Switzerland 2013. More than 140 countries including India have ratified the Convention.

- **The United Nations Convention** against Illicit Traffic in Narcotic Drugs and Psychotropic Substances of 1988 entered into force on November 11, 1990. This Convention provides comprehensive measures against drug trafficking, including provisions against money laundering and the diversion of precursors chemicals.

  India is one among the signatories.
- **The Chemicals Convention** concerning Safety in the use of Chemicals at Work was promulgated by the International Labor Organization (ILO) in 1990 and entered into force on 04 Nov 1993. The Convention protects workers from the harmful effects of chemicals in the workplace.
- **The Strategic Approach to International Chemicals Management (SAICM)** is a policy framework to promote chemical safety around the world. SAICM has as its overall objective the achievement of the sound management of chemicals throughout their life cycle so that, by 2020, chemicals are produced and used in ways that minimize significant adverse impacts on human health and the environment.
