

Topic #1: Innovative Solutions to Reduce the Use of Pesticides

I. Background Information:

Pesticides are chemicals used for agricultural purposes in order to maintain food production and ensure that the crops are protected from pests, diseases, and other factors that could cause harm. Some examples of pesticides include insecticides, herbicides, fungicides, and more that all work to enhance crop yield and protect from pests that annually cause a 45% loss in food production. In this way, pesticides are beneficial to the lives of people across the globe, also ensuring that crop-rich diets are increasingly possible. The use of pesticides also helps to increase the amount of land that is available for agricultural uses, therefore also allowing for increased food production. This availability of land is a large contributor to ensuring food security, especially in developing nations. However, due to the chemical and toxic nature of pesticides, they can often cause human and animal health risks and poor environmental impacts. This is why the international community calls for alternatives to pesticides to ensure that both health and food production are simultaneously protected.

Pesticides can cause a wide range of health issues, both short-term and chronic. They can cause effects such as nausea, blindness, birth defects, cancers, reproductive harm, and even death. Children are also more vulnerable to pesticide use than adults due to the permanent damage that can be caused during their early development periods. Pesticides can be separated into certain classes that each have their own unique effects on human health. For example, soil fumigants are pesticides for soil that deter fungi, insects, bacteria, other plants, and more. They are a gaseous pesticide, so they cause extreme lung and eye irritation as well as cancer and reproductive harm. Another example of a specific class of pesticide are Pyrethroids which are toxic to our nervous system and can cause tremors, vomiting, headaches, as well as other long-term issues etc. It is important to think about the different classes of pesticides and their effects on global health when creating solutions.

In regard to the environment, pesticides have harmful consequences as well. They cause water pollution because they can drift from their intended area, leach through soil, be carried as runoff, and can often be accidentally spilled. Additionally, pesticides harm the soil itself because they lower the soil's ability for water retention. Pesticides in soil can also limit nitrogen fixation, a necessary process for large plant growth. Animals and aquatic life are also heavily affected by these chemicals. Pesticides can poison wildlife, ultimately traveling through their food chains as well.



As you can see above, pesticides are not always able to be truly concentrated in one area. This makes it easier for them to spread and harm people, animals, and other plants.

II. United Nations Involvement

In 2017, the United Nations made the use of pesticides a human rights concern. Two UN human rights experts and Special Rapporteurs on multiple food and agricultural issues stressed the detrimental effects of using pesticides. They noted that pesticides account for a global number of around 200,000 deaths per year due to poisoning. Additionally, the Special Rapporteurs pointed out that developing nations are the location for around 99% of these deaths, highlighting the weaker health and safety measures in these nations that must be alleviated. The Special Rapporteurs called for states to implement policies in order to protect the rights of their citizens, particularly children. They emphasized the need for stricter and more united regulations on pesticide use to ensure that those nations without the ability to fully enforce sustainable agricultural practices on their own can be reinforced by global initiatives and mechanisms.

In early 2024, the United Nations Environment Assembly called for an end to the global use of highly hazardous pesticides (HHPs), which are the chemicals known to cause the most health and environmental threat. This plan is set by the UNEA to be implemented by 2035. From reports published around the time of the UNEA call for action, it is clear that lower-income nations have more difficulty in successfully working to ban HHPs, seeing as in some of these nations almost 70% of their pesticide use is HHPs. This action is a direct reinforcement of the Global Forum on Chemicals to form a Global Alliance on HHPs held in 2023 by organizations such as the FAO, the United Nations Environment Programme, the World Health Organization, and the International Labor Organization. This forum called for safer and more cost-effective alternatives to pesticides to be implemented by 2035 as well.

III. Questions to Consider

When creating your solutions and resolutions, concentrate on the following questions:

1. What policies are already in place within your nation regarding the use of pesticides?
2. How can your solutions target developing nations in need of increased assistance in regulating pesticide use?

3. What innovative solutions are already in place, and how can you expand them?
4. What Non-governmental Organizations can be used to aid in solution implementation?
5. How can your solutions target specific types of pesticides and their respective effects?
6. How will new alternatives for pesticide use affect the countries and practices that rely on pesticide benefits?
7. How can legislation and international regulation be implemented as a solution to pesticide use?

Ultimately, it is important to be creative. These questions can help organize a multi-faceted approach, but you are not limited to just these aspects. Think about how you can truly make your solutions innovative and effective, while also using the resources that your own nation, the UN, and the international community may provide to you.

IV. Sources and Helpful Links

Detailed Overview and Specific Environmental Research:

<https://link.springer.com/article/10.1007/s42452-019-1485-1>

Benefits and Costs:

<https://www.iaea.org/sites/default/files/publications/magazines/bulletin/bull24-3/24305183841.pdf>

Health Effects and Different Types of Pesticides:

<https://www.pesticidereform.org/pesticides-human-health/#:~:text=Pesticides%20can%20cause%20short%2Dterm,%2C%20dizziness%2C%20diarrhea%20and%20death.>

Environmental Concerns:

<https://www.pan-uk.org/our-environment/>

UNEA 2035:

[https://ipen.org/news/un-environment-assembly-calls-action-end-use-world%E2%80%99s-most-toxic-pesticides-2035#:~:text=Environment%20Assembly%20\(UNEA\)%20today%20called,pose%20serious%20threats%20to%20health.](https://ipen.org/news/un-environment-assembly-calls-action-end-use-world%E2%80%99s-most-toxic-pesticides-2035#:~:text=Environment%20Assembly%20(UNEA)%20today%20called,pose%20serious%20threats%20to%20health.)

Human Rights Experts 2017 Report:

<https://news.un.org/en/story/2017/03/552872>

Tips for Reducing Pesticide Impact:

<https://www.epa.gov/safepestcontrol/tips-reducing-pesticide-impacts-wildlife>