

Effective Management of Highly Hazardous Pesticides

Around one third of the world's potential crop production is lost annually because of weeds, pests and diseases, according to [a report](#) written jointly by Food and Agriculture Organization of the United Nations (FAO) and the Organisation for Economic Co-operation and Development (OECD). The report goes on to say these losses could double without the use of pest management tools, such as pesticides. Some of these pesticides are considered highly hazardous because they have a high acute toxicity or are very persistent in the environment or in organisms.

But highly hazardous pesticides (HHPs) should not be automatically removed from the market, as some would argue. More important than the hazard of these products is the real, on-the-ground risk they pose to users, consumers and the environment, weighed up against their benefit to society. HHPs exist, and are used, because they are an important tool to fight against crop losses and support farmer livelihoods. They should be used when there is no viable alternative and when, without them, farmers would be less able to produce enough food for a growing population and less likely to derive an adequate income to support their family. Certain HHPs are also used to control vectors, such as mosquitoes and rodents, that spread deadly diseases.

After recognizing the potential benefits of HHPs, the distinction between hazard and risk is important. CropLife International supports the FAO/World Health Organization [International Code of Conduct on Pesticide Management](#) (the Code) which calls for regulating crop protection products based on the real, on-the-ground risk they pose, not their theoretical hazard. This approach prevents the restriction or banning of effective, useful products that benefit society by controlling pests that spread diseases such as malaria, or threaten food supplies.

It is imperative that the risk of using pesticides, at whatever level of hazard, needs to be appropriately addressed and minimized. Risk reduction – such as the use of personal protective equipment or maintenance and calibration of pesticide application equipment – is vital to ensure their safe use. And there must be a zero-tolerance approach to accepting danger. If a risk assessment finds that risk mitigation measures are insufficient to ensure a pesticide can be handled without unacceptable risk to humans and the environment, they should be withdrawn from the market, in line with the Code's guidelines.

In support of this approach, CropLife International's member companies [recently completed their latest voluntary portfolio review](#), evaluating their entire range of more than 6,400 crop protection products. Any products meeting the Code's HHP hazard criteria underwent a risk assessment, risk mitigation measures were evaluated and, where the risk remained too high, the product has been withdrawn from the market.

How are HHPs identified?

Highly hazardous pesticides are acknowledged to present particularly high levels of acute or chronic hazards to health or environment, according to internationally accepted classification systems. Based on the International Code of Conduct on Pesticide Management, HHPs can be identified as a product that can:

- cause serious harm to humans if swallowed or spilled on the skin;
- contain substances at more than trace levels known to cause cancer in humans, cause damage to genes or adversely affect the development of an unborn child or reproductive system of humans;
- include active ingredients at more than trace levels that have potential for accumulation in the food chain and/or to be transported for long distances from their point of use (persistent organic pollutants);
- include active ingredients at more than trace levels that have the potential to damage the ozone layer; and/or
- show credible evidence that their recommended uses cause widespread harm to people or the environment.

If an HHP is identified, CropLife International supports a use assessment process under local conditions of use. Where the risk mitigation measures are insufficient, the product should be withdrawn from the market.

Industry's Voluntary Commitment to Managing HHPs

Like all crop protection products, HHPs are highly regulated to ensure there are no unacceptable risks to human or environmental health for their specified uses. In addition, CropLife International members have voluntarily committed to managing potential risks posed by HHPs by:

- reviewing their product portfolios regularly to identify products that meet HHP criteria;
- conducting use assessments on products/formulations under various conditions of use in specific geographies;
- taking measures to manage any HHP risks, which may include several mitigation measures or individual companies choosing to withdraw a product or use(s);
- encouraging global stakeholders to adhere to similar risk management measures; and
- building capacity for risk assessment for regulators in developing countries through workshops and capacity building.

Properly identifying and managing HHPs is essential to protecting human and environmental health while ensuring that farmers get access to products essential to crop productivity.

Risk Management and Mitigation

The crop protection industry protects people and the environment by following very stringent product development criteria. On average, every crop protection product that reaches the market costs **\$286 million and takes 11 years** of research and development to ensure the highest safety and efficacy standards. Further, for every single new active ingredient, the industry will screen 160,000 options and remove all those with potential and unacceptable adverse effects.

When products are deemed safe for their intended uses they are delivered to the market responsibly and according to local regulatory requirements and international standards. The crop protection industry then offers product support, training and promotes responsible handling practices. These necessary business operations protect society and ensure product sustainability and longevity.

The FAO's guidance on the role of pesticides within an integrated pest management (IPM) approach is also important. To grow a healthy crop, the FAO recommends the careful consideration of "all available pest control techniques" and tells farmers to "integrate appropriate measures that discourage the development of pest populations and that keep pesticides and other interventions to levels that are economically justified and reduce or minimize risks to human health and the environment". The crop protection industry agrees.

Training farmers on the most environmentally sound and responsible methods for protecting their crops from pests is central for the crop protection industry. In 2016, CropLife International began a partnership with the German international development organization GIZ and the Vietnamese government to **train 15,000 Vietnamese rice farmers on IPM**. Meanwhile, a six-year project to **train over 125,000 farmers in India** came to an end in 2015 with impressive results. These are just two in a long line of industry partnerships, which have, since 2005, successfully trained more than 3.7 million agricultural workers worldwide in IPM and the responsible use of crop protection products.

The industry also continuously improves product formulations and packaging with human and environmental protection in mind. For example, it has put in place safety measures to prevent accidental or intentional misuse of products, such as safety seals and vomit-inducing ingredients. Liquid formulas may be switched to gels or microcapsules that don't dissolve in water to prevent spillage and make them difficult to drink. Prominent warnings on labels along with suitably-sized and easy-to-handle containers discourage decanting products into unlabeled, inappropriate containers. Coloring or adding a strong smell to products to avoid mistaken identity, child- or spill-resistant caps and built-in measuring devices also help protect farmers and their families. Finally, products may be restricted in use per application or geography and/or only be sold to professional applicators.

The health and safety of both consumers and pesticide users remains the plant science industry's highest priority. The industry collaborates closely with the FAO, UN Environment and World Health Organization to promote pesticide safety around the world and actively supports the UN Strategic Approach to International Chemicals Management, including HHPs. It is through this open, collaborative approach that pesticides can remain in a farmer's toolbox to feed the world sustainably.



Examples of Risk Mitigation

PACKAGING



Child-resistant caps



Built-in measuring devices

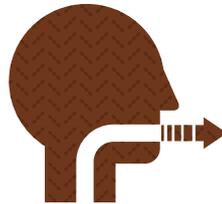


Suitable, easy-to-handle container size

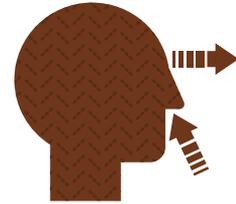
PRODUCT



Changes in formulation to prevent spillage



Vomit-inducing ingredient in case of ingestion



Strong odor or color for identification

RESTRICTED USE



Approved crops



Specific geographic locations



By licensed professional applicators

TRAINING AND EDUCATION



Responsible use of crop protection products



Integrated Pest Management



Proper disposal of empty product containers