Persisted Organic Pollutants and Pesticides

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In May 2004, the Stockholm Convention on Persistent Organic Pollutants (POPs) entered into force following ratification by the 50th signatory national government (i.e. becoming party to the Convention). This Convention established for the first time a global management process for chemicals that meet defined criteria of persistence in the environment, toxicity to a range of environmental species and bioaccumulation in living organisms, and are or can be expected to be transported long distances. The Convention identified the first twelve substances that have been adjudged as POPs, including several discontinued pesticides such as aldrin, chlordane, dieldrin, endrin, heptachlor, toxaphene, and DDT.

The Convention sets out several objectives including:

- The elimination from commerce of identified POPs;
- Encouraging the transition in commerce to safer alternatives;
- Identifying, and listing in the Convention, additional POPs;
- The clean-up of old stockpiles and equipment containing POPs; and
- Encouraging all stakeholders to work towards a POP-free environment.

CropLife International recognises that those chemicals identified by the Convention have generally been shown to have persistent and bioaccumulating properties. All identified POPs have been superseded by other products in the marketplace, or their use has been severely restricted.

These POPs and other pesticides were developed in order to meet the growing demands for food and to ensure that yields were maintained or increased. Natural crop protection and hand labour gave way to the increasing use of chemicals that would either eliminate pests, combat diseases or control weeds, thus providing a significant increase in viable yields at harvest. In their day, they represented significant improvements, in terms of both safety and efficacy, over other crop protection and pest control methods available.

Pesticide Regulatory Development

Since the 1950s there have been major and significant advances in regulatory science and criteria for assessing crop protection products (CPPs) before authorisation to sell and use is granted. The USA and Europe, together with other OECD countries, have taken the lead over the past years to advance environmental, animal and human health protection through sound scientific and risk-based regulations.
Countries continuously review their regulations, and when new scientific information comes to light, they ensure that legislation and regulations are updated in a timely manner. National governments also establish risk management processes for pesticides to ensure the adequate protection of workers, the environment, and consumers of the harvested food. Enforcement systems impose penalties on those who do not comply with instructions on pesticide labels.

The Stockholm Convention POPs Criteria

Annex D of the Stockholm Convention specifies screening criteria to evaluate which substances will be considered as potential POPs. The screening criteria include identity, persistence, bioaccumulation, long-range transport and adverse effects. A country that is a party to the Convention submits proposals to the Secretariat for consideration. Once the Secretariat has verified that the proposal contains the required information, it forwards the proposal to the Persistent Organic Pollutants Review Committee (POPRC), which examines the proposal and applies the screening criteria in a flexible and transparent manner.

All criteria must be met by the proposal and, using the weight-of-evidence principle, must be scientifically justified by the POPRC before it can accept a proposal to list a new chemical as a POP. Following acceptance of a proposal, a risk-benefit profile is prepared in accordance with Annex E. Where possible, a comparison of toxicity or eco-toxicity data with detected or predicted levels of a chemical resulting or expected from its long-range environmental transport should be included, along with a short statement indicating the need for global concern. If there is evidence that long-range environmental transport may lead to significant adverse consequences for human and/or environmental health, then POPRC will seek information outlined in Annex F in order to prepare a risk management evaluation and possible control measures.

Depending on the risk profile and the risk management evaluation, the POPRC will recommend to the Conference of Parties (COP) whether the chemical should be included in Annexes A, B, and/or C. The COP makes the decision to list the chemical and to specify its related control measures.

In developing national regulatory practices for pesticides, countries have also considered the screening criteria laid down in Annex D. It is important to note that rather than just relying on cut-off criteria, current regulatory practice is to examine the data in a tiered approach and, where necessary, require further examination of the properties of the pesticide under field conditions, together with appropriate modelling and risk evaluation.

The regulation of pesticides and plant protection products is based on a sophisticated science-based risk assessment process that is conducted prior to any authorisation for use. Notwithstanding the fact that a new pesticide or one under review might exceed one or more of the criteria for listing under the Stockholm Convention, this would not preclude its use, as long as it was clearly demonstrated with additional studies and modeling that the risks would not be unacceptable.

CropLife International believes that consistency and coherence should always be the aim in environmental legislation in order to prevent uncertainty among stakeholders. CropLife encourages the POPRC to consider in its deliberations and recommendations the current use of regulatory risk assessment in major countries and regions for authorisation of CPPs.
In addition to making science-based judgments, the Stockholm Convention recognises the need to balance risks with benefits and socio-economic needs. This information should always be considered, as one national authority might take regulatory action against a product based on certain criteria in the Convention, while another country with totally different uses for that product and different climate may have an ongoing urgent need for the product.

**The Case for Exemptions and DDT**

Article 4 of the Stockholm Convention permits specific time-limited exemptions (Annex B) to allow use of a listed POP, when significant benefits to a sector of society are clearly demonstrated. The COP may reconsider an exemption at any time, and parties are encouraged to seek suitable and safer alternatives during the period that the exemption is in effect.

DDT use in malaria programmes is an excellent example of the exemptions process allowing a potentially important chemical to be used when national governments deem it necessary. DDT is currently listed in Annex B for treatment of the inside walls of dwellings to control mosquito vectors of malaria. CropLife believes that such exemptions should continue be allowed where they are suitably justified on a risk/benefit basis.

**Obsolete Stocks and the Africa Stockpiles Programme**

Obsolete stocks of chemicals and CPPs are present in many countries. Such chemicals may have been abandoned, forgotten or even deliberately buried by owners to avoid disposal costs. In certain cases the original packaging is in very poor condition and the contents have leaked out in the surrounding soil, contaminating the storage site and beyond.

The distribution and procurement of CPPs in the developing world has improved significantly over the past years. Excess production from local manufacturers has been reduced, centralized purchasing has given way to private markets, donation of CPPs as development aid has sharply decreased, and control of strategic pests is better managed.

Nevertheless, much remains to be done, in particular:

- Implementation of guidelines to help governments and other stakeholders to tender for the right product, amount, and quality;
- Provision of better warehousing;
- Training in the management of CPPs and their storage;
- Proper disposal of unused products and empty packs by farmers; and
- Regulation of the trade in counterfeit and sub-standard CPPs.
The Africa Stockpiles Programme (ASP) is a multi-stakeholder partnership designed to:

- Dispose of an estimated 50,000 tonnes of obsolete stockpiled pesticides and contaminated waste in Africa in an environmentally sound manner;
- Catalyse the development of prevention measures; and
- Build capacity and strengthen institutions on important chemicals-related issues.

The leading companies of CropLife International have committed funding of up to US$30 million toward the overall costs of disposal and expert mobilisation, in active collaboration with African governments, the World Bank, the United Nations Food and Agriculture Organization, the World Wildlife Fund, the Pesticide Action Network, and the Global Environmental Fund.

**Conclusions**

CPPs are very well researched during their development. The data pertaining to their intrinsic properties, effects on human health and the environment, exposure potential, and proposals for safe uses are submitted to governments. Governments review these data and make informed judgments on whether the applicant has adequately demonstrated the safe use of the proposed product. Where concerns arise, risk mitigation and risk management strategies are employed. If there are unacceptable risks, authorization for use will not be granted.

CropLife International welcomes the Stockholm Convention and its commitment to the principles of sound science-based decision-making. The plant science industry will continue to provide expertise and data to the authorities to assist in the development of regulations that will contribute to a better environment.

True to its principles of continuous new product research and development, the industry will ensure that its products are developed so that they meet or exceed national regulatory requirements, which will incorporate the criteria of the Stockholm Convention.