

protection products cover issues of storage at the user level and this is included in user training programmes – In India, for example, surveys showed that storage of crop protection products in the home dropped by almost 90% following training by CropLife India. All CropLife guidelines can be downloaded from the CropLife International website, www.croplife.org

- Safe on-farm storage was included in training in responsible use of pesticides in Guanghan City, Sicuan Province, PR China. During 2006, some 2600 farmers, retailers and extension officers received training in different aspects of responsible use, along with 100 doctors and nurses. An independent survey, carried out by a local university, showed the % of farmers storing crop protection products in lockable boxes rose to 58.83% after training compared to 29.79% before training
- Starting in 2001, a partnership between CropLife Egypt, the Egyptian Seed and Pesticide Traders Association, Development Alternatives International and GTZ began a training programme for pesticide retailers. A training manual was developed and, following meetings with government officials, the Minister of Agriculture issued a decree to establish a certification scheme for retailers. The Ministry requires all of the 4000 pesticide retailers in Egypt to pass a written test for a certificate of competence to obtain a license to sell crop protection products. A supervisory committee of private sector and association members has been formed to help guide implementation. CropLife Egypt is undertaking a significant part of the training, as well as publishing the training manual that has been developed
- The CropLife association in Thailand, the Thai Crop Protection Association, provides training to retailers in collaboration with the Thai Department of Agriculture (DOA). This training is a requirement for retailers to apply for a permit from the DOA to sell crop protection products.

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Storage, Transportation and Distribution Safety assurance from factory to farm



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Safety through best practice

Crop protection products need to be handled correctly in order to protect the environment and safety of workers and others. As part of the risk management regime, CropLife International, along with its member companies and associations, are committed to supporting initiatives that ensure that crop protection products are stored, transported and distributed safely and appropriately. This is achieved through proper design of facilities, the establishment and enforcement of a suitable regulatory environment and by training. This area of stewardship – the proper management of products throughout their lifecycle, from research and development, through distribution and use, to final disposal of any waste – includes marketing and sales. It is important that products are promoted and sold appropriately, and that accurate information is provided during the distribution and marketing of crop protection products to reduce risks that may be posed to the environment and human health through products being used inappropriately.

In all of these stewardship activities, regulatory requirements complement voluntary industry-led programmes, which are tailored to the local needs.



Storage Storage

CropLife International's member companies enforce standards and guidelines for the storage of crop protection products. These are complemented by association guidelines and initiatives that aim to assist companies meet legislative requirements or put in place 'beyond compliance' standards.

These guidelines and standards address for example:

- location of warehousing facilities away from houses, schools and shopping areas
- a building design that prevents and contains the spread of fire and product spillage through, for instance, the construction of firebreak walls and catchments basins – these allow product spillage and water used in combating any fires to be retained for safe disposal
- easy loading and un-loading
- access for emergency vehicles
- non-combustible and heat resistant construction material
- flooring that is impervious to liquids

In addition to the physical infrastructure, safe storage also requires appropriate warehouse management.

This must ensure that, for example:

- storage conditions are appropriate, e.g. indoor or outdoor, separated within the same room, or indifferent rooms, etc
- the security of the facilities are adequate and maintained
- the proper receipt and dispatch of products takes place, including record-keeping.

Crucially, successful warehouse management requires employees trained in safety techniques and practices, including emergency procedures; and to ensure that these standards are constantly met through the establishment of effective management control mechanisms.

Safe storage is also promoted at farm level through CropLife national associations' training programmes in responsible use of crop protection products.

Transport Transport

Transportation of crop protection products includes the preparation, loading and unloading of the goods for transport, and their subsequent carriage. Effective management of all of these functions is vital if the possibility of an accident taking place is to be minimised. Issues to consider include:

- preparation and loading
 - the quality of the packaging should be adequate for the distance and type of journey, taking into account the quality of roads
 - products should also be clearly labeled to ensure all who handle the goods are aware of any associated risks
 - appropriate equipment and handling methods should be employed during the loading and unloading phase. Large drums should not, for example, be pushed off the back of trucks and pallets must be free of protruding nails or splinters
 - environmental conditions during transport should be taken into account, for example direct sunlight which may increase the instability of certain products and increase the risk of a fire
- driver and vehicle suitability
 - the driver – the majority of crop protection transportation takes place by truck - must be healthy and adequately trained
 - vehicles should also be in good working order, contain all necessary safety equipment and be appropriate to the load being carried
 - the safest route for the journey should be identified
 - the loads should be checked to ensure they are stowed and secured in the safest way possible - drums should not, for example be loaded onto cardboard boxes and they should be secured to prevent movement during the journey
- accident preparedness
 - speed is essential in order to prevent escalation of any incident
 - if an accident occurs the vehicle battery should be disconnected to reduce risk of fire
 - fire should be tackled using powder, foam or water sprays

- the driver should be able to contain any spill by, for example, covering with sand or earth and even building a small dam for larger spills
- necessary safety precautions should be taken, including the wearing of protective clothing, and breathing apparatus (in case of a fire),
- containment and subsequent clean-up should be conducted in accordance with guidelines specific to each product, preferably with input from the emergency services and crop protection accident specialists.

Distribution Distribution

Distributors have a crucial role to play in ensuring that the highest safety and environmental standards are realised in relation to the storage, transportation and use of crop protection products. Distributors are the most immediate contact point for growers and are therefore ideally positioned to convey key messages on the way in which crop protection products should be handled by growers.

To encourage the highest standards, and to eliminate any instances of malpractice, distributors of crop protection products are expected to abide by a wide range of voluntary and mandatory measures, for example:

- distributors must not allow the repackaging or decanting of crop protection product into food or beverage containers
- distributors should not mislead customers as to the safety, composition or suitability for use of a particular product
- distributors should advise their customers on how best to manage the purchase and use of crop protection products so as to ensure that they do not build up unnecessary stocks.

In addition to advising their customers, distributors must also abide by strict guidelines as to how they themselves store and manage crop protection products. Distributors should also ensure that staff are adequately trained and are in a position to advise customers on the selection and use of crop protection products.

Examples of CropLife International's and its member associations' stewardship activities are:

- Agsafe is an independent subsidiary of CropLife Australia, whose activities include the Agsafe Guardian program. The Program ensures that premises where CropLife Australia member company products are manufactured, formulated, stored or sold meet appropriate standards for safety and environmental protection. Also, that those involved in the distribution, storage and advising on product use are trained and meet accreditation standards. Premises that do not meet the standards are subjects to Australian Competition and Consumer Commission approved trading sanctions (see www.agsafe.com.au)
- CropLife Canada supported that establishment of the Agrichemical Warehousing Standards Association (AWSA) a self-regulatory industry initiative that has certified over 1,500 warehouses nationally, representing all agrochemical warehouses in Canada. The scheme ensures that warehouses are designed and managed in accordance with safety standards and principles and each warehouse is audited every two years. CropLife Canada's member companies will ship only to AWSA-certified facilities. As a result of this programme the number of warehouse-related incidents have been dramatically reduced (see www.awsacanada.com/warehouse/AWSAframeset.html)
- The American Agronomic Stewardship Alliance, supported by CropLife America, has inspected more than 6,000 retail facilities for storage standards, and is moving now towards an accreditation scheme (see www.aginspect.org)
- Globally, CropLife International, has published and widely distributed transport and warehousing guidelines that cover safe and effective transport of crop protection products and general principles of design, safety and management of warehouses; guidelines on the safe and effective use of crop