Food and Agriculture Organization of the United Nations

The Commission for Controlling the Desert Locust in the Central Region

Human health and environmental safety In desert locust control operations

Early intervention to reduce chemical pesticides usage

Countries affected by Desert Locust have adopted a preventive control strategy based on three core elements: (1) the collection and analysis of all data related to Desert Locust, (2) early warning and (3) early intervention to manage this dangerous pest. Historically as well as today, this strategy relies on conventional pesticides.

Successful early warning and early intervention minimizes the quantity of pesticides by controlling the Desert Locust in its early stages when populations are small and located in a few hectares within relative small and limited areas. If these outbreaks are not detected and controlled and, if good rains continue, there is a high probability that hopper bands and swarms will from that could will spread to other countries and cover much larger areas. In this case, the use of large quantities of pesticides cannot be avoided to bring the situation under control.

Key facts

Often Desert Locust emergency operations aim to eliminate the greatest number of infestations without adequately considering social and environmental aspects as well as security issues.

Applying EHS Standards reduces the adverse effects of the use of conventional pesticides.

The preventive control strategy aims to minimize the use of pesticides.

Environment-friendly pesticides are the most appropriate alternatives to conventional pesticides.

Controlling desert locust

The success of reducing the Desert Locust populations using conventional pesticides during outbreaks or upsurges is not considered as an end to the crisis, given the implications of the use of these insecticides and their consequences that may extend for a number of years. For example, some 13 million litres of chemical pesticides were sprayed during the 2003–2005 upsurge that affected nearly 20 countries across North Africa and the Near East.

In Desert Locust control operations, conventional pesticides are still the primary insecticide of choice despite commercially available biopesticides such as Green Muscle® *(Metarhizium acridum)* and insect growth regulators that are effective against Desert Locust. The higher costs of biopesticides, their limited production, lack of registration in many countries, and the perception that it works slower, e.g. locusts immediately stop eating but may take up to two weeks to die have contributed to their slow and limited integration into national locust control programmes.

Environmental health and safety standards (EHS)

The Environmental and Health Standards for Desert Locust control in the Central Region (EHS) define the requirements that a Desert Locust control campaign should meet with the aim to minimize negative environmental and human health effects of insecticide use. The EHS provide explicit benchmarks that Desert Locust control operations should comply with to ensure that environmental and human health effects are avoided or kept to an acceptable minimum.

Many of the standards defined in the EHS are already partly or fully met by most of the member countries, although some countries have not yet begun the implementation process. EHS provides a yardstick for countries to assess how well environmental and human health precautions are being put into practice and to identify what measures still need to be strengthened or initiated.

Mitigate the side effects of pesticides

The current use of and continued reliance on conventional pesticides in Desert Locust control may have adverse effects on human health and the environment. However, these effects can be minimized or completely avoided by proper handling and use of these pesticides before, during and after conducting the control operations.

There are many procedures that could reduce the negative impacts of insecticides currently being applied by the member countries in the Commission:

- Implementation of preventive control strategies
- Establishment of contingency plans
- Choosing the appropriate, low-risk insecticides and application methods
- Training and monitoring of control teams
- Improving insecticides storage and transport
- Sound management of empty containers
- Developing and promoting biological control agents

Progress made in the implementation of EHS

It was observed that a significant number of environmental health and safety standards were in place in some of the Commission's member countries even prior to the implementation of the Environmental Health and Safety Programme in 2012. However, intensive work, time, resources and support are still required to implement other standards.

In implementing the EHS programme, the Commission has so far:

- Conducted three regional workshops in 2012, 2014 and 2016 to introduce, apply and assess the programme;
- Provided technical and financial support to conduct six National EHS training courses;
- Provided frontline countries with Test-mate ChE (Cholinesterase Test Systems) for the quantitative determination of Cholinesterase in blood to monitor pesticide exposure.

Specialized teams

There is still a lack of awareness by decision makers about the importance of meeting environmental and health standards for locust control. As a result, only limited priority and funding were given to insecticide risk reduction during locust control campaigns. This is an even bigger problem in member countries that have decentralized agricultural authorities.

Lack of specialized staff and high staff turnover at the NLCUs hamper the building of capacity for health and environmental aspects of locust control. Furthermore, the high costs of pesticide residue analysis, the low quality of personal protective equipment (PPE), and the lack of monitoring equipment and DGPS on aircraft constrain the implementation of the EHS in the region.

National EHS Implementation plans

Full implementation of EHS will require time and resources. It is unlikely to be achieved in the very short term. Instead, the NCLUs should focus on a limited number of EHS requirements and identify concrete actions that will lead to their implementation. In addition, identify the measures that are still needed to be strengthened or introduced.

In order to implement the EHS, there is a need to establish specialized capacity-building teams with emphasis on:

- Health monitoring;
- Environmental monitoring;
- Accident monitoring;
- Encouraging the greater use of biopesticides;
- Establishing a national system for the management of empty pesticide containers.

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