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Organización
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Alimentación

FAO DESERT LOCUST CONTROL COMMITTEE

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Establishment of an improved pesticide management system and triangulation of pesticides in emergencies (Agenda Item 16)

Introduction

The widely agreed strategy adopted by countries to manage Desert Locusts in Africa, the Near East and Southwest Asia is that of prevention – to take action before the problem becomes too big. The 2003-05 upsurge that developed in West Africa from four unchecked outbreaks was an example of unsuccessful preventive control. It took more than US\$ 300 million and the treatment of 13 million hectares to stop the upsurge. An estimated US\$ 137 million was spent for the procurement of pesticides. Nevertheless, crop losses in some areas were up to 100%, and US\$ 90 million was required for food aid. After the upsurge ended, more than 8 million litres of pesticides and a large quantity of empty pesticide containers remained, which represents a real and potential threat to the environment.

This paper presents recent achievements on better pesticide management since the 2003-05 upsurge in West Africa. It includes an outline of a proposed Global Programme for more effective and safer management of pesticides used against the Desert Locust and related transboundary pests.

Recent Achievements

Immediately after the 2003-05 Desert Locust upsurge, FAO launched a pilot programme in West Africa to ensure better management of the remaining stocks of pesticides. The programme achieved several significant results as outlined in the following.

Development and introduction of a Pesticide Stock Management System (PSMS)

The system to manage pesticide stocks was developed, consisting of:

- a database of registered pesticides for locust control
- detailed inventory, appropriate storage and arrangement of remaining pesticides stocks
- quality control of the formulations of remaining pesticides
- detailed information regarding the pesticides storage conditions
- and an inventory, clean up, destruction and recycling of empty pesticide containers

The system uses specific forms to collect information on the storage sites, warehouses and pesticide details, as well as a barcode system to register and trace pesticides from their arrival in the country to their final use. This system is a suitable tool to keep track of information related to pesticide stocks in all affected countries, their locations, the recommended shelf-life and registration status and to facilitate rapid access to certified chemical and bio-pesticides reserves in emergencies. It is a pesticide management tool for the national and regional coordination to prevent new obsolete stocks and to support safe control of locusts and other transboundary pests.

The system is administered by FAO and can be accessed with a password on the website <http://psms.fao.org/psms>.

Training of national teams on data collection and recording was organized in most countries in North and West Africa. The system is fully operational in Mauritania, Mali, Senegal and Niger. Only authorized personnel from each country have access to the system.

Development of local remediation technology of contaminated sites

A second pilot project was conducted in Mali and Mauritania with the objective to develop an approach to prevent further damage to the environment due to pesticide contamination. Under this project national teams were trained to:

- Identify sources of contamination in polluted areas and the potential risks
- Develop adapted solutions to reduce the impact on human health and natural resources
- Implement proposed solutions whenever financially and technically feasible

This project was successfully implemented in Mali and it is in an advanced stage in Mauritania. Based on the lessons learnt, this approach should be improved and extended to other countries.

Triangulation of pesticides in emergencies

Based on PSMS, FAO in close collaboration with the countries and WFP has successfully implemented the following:

- In July 2007, transfer of 70,000 litres certified pesticides from existing stock in Mauritania to Yemen for Desert Locust control
- In October 2008, transfer of 21,000 litres certified pesticides from Mali to Malawi Mozambique and Tanzania for Red Locust control

In the case of Yemen, the requested quantity of pesticide was ready for transport from Mauritania within one week. This allowed timely control operations in Yemen at a reduced cost – less than 50% as compared to the standard costs for procurement and shipment.

These actions are an example of a new strategic approach for regional pesticide management as conveyed by FAO and affected countries to facilitate rapid response to Desert Locust outbreaks and upsurges, which prevent the accumulation of new obsolete stocks and reduces potential environmental damage and economic loss.

Proposed global programme for effective and safe management of pesticides used for the control of the Desert Locust and other related transboundary pests

The proposed strategy of the programme is based on the results and expertise gained after the 2003-05 upsurge with regard to pesticide management capacity building, including the use of a database on pesticides reserves in the region to permit a timely supply of certified products to all affected countries for early and effective response to future locust outbreaks. This strategy aims at (1) reducing the quantity of conventional chemicals used in locust control and (2) preventing future obsolete pesticides, contaminated sites and pesticide residues in agricultural products. The strategy begins with an assessment of the current situation, followed by strengthening national capacities, developing a legal framework and sensitisation of the local population.

Review of current pesticide management for locust control

In most locust-affected countries, remaining pesticide stocks and empty containers are scattered in remote desert areas. An account of pesticides, their location and condition, including empty containers and contaminated sites should be carried out by using inventory forms developed by FAO to collect all relevant information.

Efforts should be made to assess the pesticide storage facilities currently available in each country and decide whether pesticide stores should be rehabilitated or newly constructed.

Pesticides should be centralized in strategic warehouses and kept according to the pesticide stock management standards. Every second year, new obsolete pesticides should be repackaged and disposed in accordance with national and international regulations of best practices.

Pesticide management capacity building

Under suitable storage conditions all products are guaranteed a two-year shelf life. Quality control of the pesticide formulations is an important step to identify and separate stocks that should be eliminated from those which shelf-life could be extended. An assessment of the analytical capacities in the affected countries is planned to develop a Reference Laboratory for pesticide quality control in each of the three Regions. This infrastructure will facilitate quality control, registration of new products and environmental monitoring.

The bio-pesticide Green Muscle® (or Green Guard®) is based on a living organism, *Metarhizium anisopliae* var. *acridum*, and therefore requires specific storage facilities and training. To this end, cool storage, viability testing, handling and application of bio-pesticides should be addressed.

Equipment for cleaning, crushing and recycling of empty containers should be available in each country. So far, drum crushers have been installed in Algeria, Ethiopia, Mali, Mauritania, Morocco, Niger, Senegal, Tunisia and Yemen.

This system is a transparent tool to update information related to pesticide stocks, their locations, the recommended shelf-life and registration status in all affected countries to allow easy and early access to chemical and bio-pesticides in the region. Training of national teams on data collection and recording into the system will be organized in each country.

Development of a harmonized legal framework and policies

The harmonization process should consist of the following steps:

- Review the list of pesticides recommended by the Pesticide Referee Group (PRG).
- Adoption of recommended pesticides by the governments of locust-affected countries.
- Update the list of registered pesticides and bio-pesticides in each country.
- Harmonize the list of the registered chemical and bio-pesticides among affected countries in Africa, the Near East, and Southwest and Central Asia.
- Promote regional and interregional cooperation with governments of locust-affected countries. The beneficiary of the programme should sign an agreement with FAO to donate and accept donations of pesticides via FAO during Desert Locust emergencies.

This strategy includes the following elements:

- Development of a communication strategy to inform rural and urban populations of the risks pesticides and empty containers can have on human health and the environment.
- Information sharing through meetings, workshops and study tours to facilitate inter- and intra-regional learning and cooperation.
- Promotion of the use of bio-pesticides in the national programmes.

Issues

The Committee should address the following issues and advise FAO as necessary:

- In order to better coordinate and ensure triangulation of pesticides during emergencies, are the DLCC member countries willing to share their certified pesticides with locust-affected countries?
- Quality control to certify the existing stocks of pesticides for safe use in locust-affected countries is considered as an important step to allow pesticide triangulation in emergencies. Are the DLCC member countries willing to develop reference laboratories for quality control? And if so, how this should be addressed?
- Pesticide storage and management need to be improved in locust-affected countries to ensure safe storage of pesticides and prevent any unwanted effect on human health and the environment. Are the DLCC member countries willing to develop their storage facilities in compliance with international standards? If so, how this should be addressed?