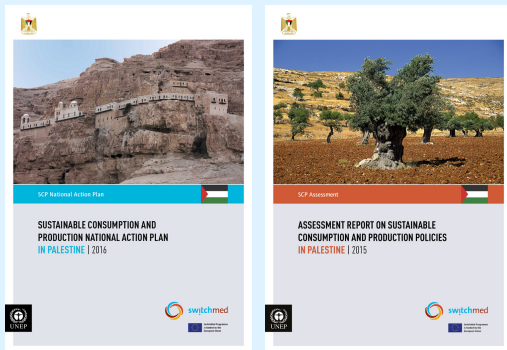


Guidelines to Biological Control of Agricultural Pests

The Guidelines sheds light on the use of biological control as a safe alternative to the various agricultural chemicals. The preparation and publication of the Guidelines is a first step towards a promising strategic goal in the future to preserve agricultural crops from contacting diseases and pests by minimizing the negative effects on the environment and humans caused by the excessive use of agricultural chemical pesticides.

The guidelines have been prepared with the participation of a wide range of actors working in agriculture and environmental fields including the official sectors represented by the Ministry of Agriculture, representatives from civil society, the experts, researchers and academics from universities as well as the private sectors represented by a number of farmers pioneers in the field of the use of biological control.



A Sustainable Consumption and Production National Action Plan (SDG12.1) was developed in Palestine through nationally owned multi-stakeholder processes. The implementation of the plan's priorities - tourism, housing and construction, agriculture, and food - is on-going through selected projects and initiatives.

Methods of biological control

There are several ways to apply biological control of pests:

- Traditional (classical): Import of natural enemies from outside the local environment to control local or exotic pests.
- Conservation: Any biological control practices aiming at protecting and preserving local natural enemies already present in the local environment.
- Augmentation: The practices of biological control aiming at increasing the number or effectiveness of local natural enemies already present in the local environment.

Advantages of applying the biological control

- Biological control methods are used as part of a comprehensive Integrated Pest Management (IPM) program to reduce chemical hazards to human health and the environment.
- A more economical alternative to the use of some expensive pesticides.
- Some bio-control measures can effectively prevent economic damage to agricultural crops.
- Unlike most insecticides, biological control is often highly specialized and specific to a particular pest. It has no negative effects on other beneficial insects, animals, or humans.
- Biological control does not pose a threat to the environment and groundwater.



SwitchMed Programme is funded by the European Union

Results from questionnaire



96%
Support
Bio-control



32%
Knowledge
-able



92%
Willing to use
alternatives



50%
Chemical
Pesticides
use

Tips for farmers

- Reduce or eliminate the use of chemical pesticides. It is recommended that farmers use biocides as a first step in a strategy to switch to a natural control system. Currently many biocides in the Palestinian markets are available.
- Apply reinforcement measures for augmentation of natural enemies. The most important procedures can be used is to avoid the use of harmful chemical pesticides (if it is necessary to use chemical pesticides). Farmers should also pick the pesticides that are least harmful to natural enemies.
- Encourage and regulate the import of some natural enemies. This calls for the introduction of legislation to regulate the importation of natural enemies and their release to fight pest (s), as well as to encourage the use of biological control, starting from propagation within closed ecosystems (greenhouses) to ensure their effectiveness in biological control.
- Document and monitor the results of biological control used. Farmers who use the biological control need to communicate with the agricultural extension workers to monitor the results of their use of biological control. These experiences could be disseminated on a large scale through training workshops, observations and documentation.



PALESTINE: MAKES THE SWITCH



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