

CONTENTS & MODULES

IPM PRINCIPLE

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Sustainable non-chemical control methods

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WHAT IS...	Sustainable non-chemical methods are those cultural, biological, ethological, physical etc. methods, which provide satisfactory pest control without devastating costs for the farmer.
WHY	In IPM, sustainable biological, physical and other non-chemical control methods must be preferred to chemical methods if they provide satisfactory pest control. These methods are less harmful to human beings and to the environment than the conventional use of pesticides, resulting in less environmental load. They are an important contribution to the sustainable use of pesticides over the long term.
HOW	<p>Possible methods:</p> <ul style="list-style-type: none"> ► Use of ecological infrastructures to enhance functional biodiversity ► Creation of an appropriate rotation system ► Physical/mechanical control ► Plant resistance/tolerance ► Biological and microbial control ► Pheromone and other attractant-based controls (ethological control methods) <p>Alternative methods:</p> <ul style="list-style-type: none"> ► May be more time consuming ► May have lower and/or slower pest control power ► May be more expensive ► May have less negative impact on environment ► May be more sustainable ► Are more beneficial for society as a whole <p>Considering the characteristics of alternative methods, in order to achieve satisfactory management or regulation of pest populations, these methods should be combined as much as possible.</p> <p>Training:</p> <p>Farmers should be aware that total eradication of the pest is often not needed. In line with this principle, end users should be trained to be able to differentiate the different threshold levels (see Decision making). Training of end users could be conducted on demonstration fields and/or demonstration farms, where they can see how non-chemical methods function in practice. Moreover, with participatory training end users can observe continuously the application, effect and result as well</p>

	as the economic, health and environmental impact of non-chemical methods.
EXAMPLE	Application of parasitoids (for example, <i>Trichogramma</i> species, which are microscopic wasps and parasitise the eggs of European corn borer, ECB) is widely used in many areas in Europe. Development of entomopathogenic nematodes against pests is also an example for this. Use of biological control tools (predators and parasitoids) in greenhouses is also common in Europe
SOURCES	<p>► Draft Guidance Document for establishing IPM principles (http://www.endure-network.eu/about_crop_protection/european_documents : BIPRO 2009 reports)</p> <p>► on the ENDURE Information Centre : ENDURE GUIDE- Non-chemical Control of Corn Borers Using Trichogramma or Bt Maize</p> <p>Key words : measures → preventive measures <i>or</i> non-chemical control</p> <p>► On the ENDURE website: ENDURE NETWORK - Easing the way for biological controls</p> <p>► IPM Training Guide - Leaflet- The participatory approach</p>
CONTACT	Jozsef.Kiss@mkk.szie.hu