REPACAGING OF OP PESTICIDES

WATER CONTAMINATION?

SOIL CONTAMINATION
PESTICIDES ALTERNATIVES TO PREVENT PRESENT SITUATION

WHAT IS IPM?
- IPM IS:
  Pest management system that, in the context of the associated environment and the population dynamics of the pest species, utilizes all suitable techniques and methods in as compatible a manner as possible and maintains the pest population levees below those causing economic injury.

THREE ESSENTIAL COMPONENTS OF IPM
- MULTIPLE TACTICS (e.g. natural enemies, resistant varieties, pesticides)
- PEST POPULATION MAINTAINED BELOW LEVEL THAT CAUSE ECONOMICALLY SIGNIFICANT DAMAGE
- CONSERVATION OF ENVIRONMENTAL QUALITY WITH IN AND BEYOND THE CROP

ELEMENTS OF IPM
- Use of natural enemies and other biological agents
- Ecological management of the Crop Environment
- Conventional insecticides
- Host-plant resistance
- Modifying insect development and behavior
- Sterile insect release and genetic techniques

PESTS PROBLEM IN UKRAINE
There are approximately 400 pests in Ukraine
- Among them one hundred and fifty key pests species cause a significant 28% yield loss.
PEST CONTROL

• Chemical control was used widely as pest control for last 40 years
• Ukraine used to produce and consume high quantities of pesticides
• Ukraine, Moldova, Russia and Uzbekistan together accounted for 72% of the use of pesticides products in the Commonwealth of 15 republics of Former Soviet Union

PESTICIDES REGISTRATION

• Ukraine operated a pesticides registration system, which include 300-400 pesticides

For the last twenty years from insecticides, synthetic pyrethoids and organophosphates are the most common

On applied amount diazinon is the most applied, followed by alpha cypermethrin and deltamethrin

Carbamates are prohibited in Ukraine

PESTICIDE USE DECRASING

• The peak of pesticide use (5.5 kg/ha) was 1986
• Since that time pesticide production and use have both dropped significantly during the last ten years
• The decrease results not from ecological concern, but from:
  - An increase in the appearance of new pesticides on the market that are active in considerably lower concentration
  - Economical realities which mean that agricultural enterprises and farmers cannot afford to buy pesticides
  - Currently pesticides use consist of 0.7-1 kg/ha

PESTICIDES MARKET

• PESTICIDE MARKET IS TOTALLY IMPORT DEPENDENT
• There are 30 companies supplying Crop protection products to the Ukrainian market
• Only seven plant protections are produced locally in Ukraine

IPM AND BIOLOGICAL CONTROL

• IPM was used on winter wheat, sugar beet, sunflower, legumes, cabbage, apples and green house
• Ukraine has successful story of IPM and biocontrol use in the past as well as qualified experts in this area

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<thead>
<tr>
<th>Crop protection measures</th>
<th>Yield increase, %</th>
<th>Cost of the yield addition, UCU</th>
<th>Production cost, UCU/Kg</th>
<th>Market share, %</th>
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<tbody>
<tr>
<td>Conventional system</td>
<td>Fungicides: Spreadsides 2-6</td>
<td>15.0</td>
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DEFINING BIOCONTROL

Biocontrol is the use of living organisms to suppress the population of a specific pest organism, making it less abundant or less damaging than it would otherwise be (Eilenberg et al. 2001).

BIOLOGICAL CONTROL IN UKRAINE

- Natural entomopathogens and microbiological pesticides were used widely in the late 1970s to the early 1990s. During that time 268 laboratories to mass rear useful insects and microbiological pesticides existed.
- In 1988 Biocontrol was used on 1.7 million hectares and shared 14% of total Crop protection products use.
- In 1999, only biocontrol used on 0.9 million.

TOTAL AREAS OF BIOCONTROL USE

BIOCONTROL PRODUCTS FARMS

IPM NOWADAYS

Currently in time of transition of agriculture toward market, farmers are not so confident that using IPM and biocontrol can bring them some profit. Some farmers are not aware of IPM and biocontrol at all.

ROLE OF EDUCATION IN IPM

- Education and training is a vital part of IPM implementation.
- There are many links in the chain from science developing IPM to farmers and pest control operators practising.
- Education and training needs to enable farmers and others trying to manage pests properly, that is IPM is relevant to their local circumstances and that will bring them benefits.