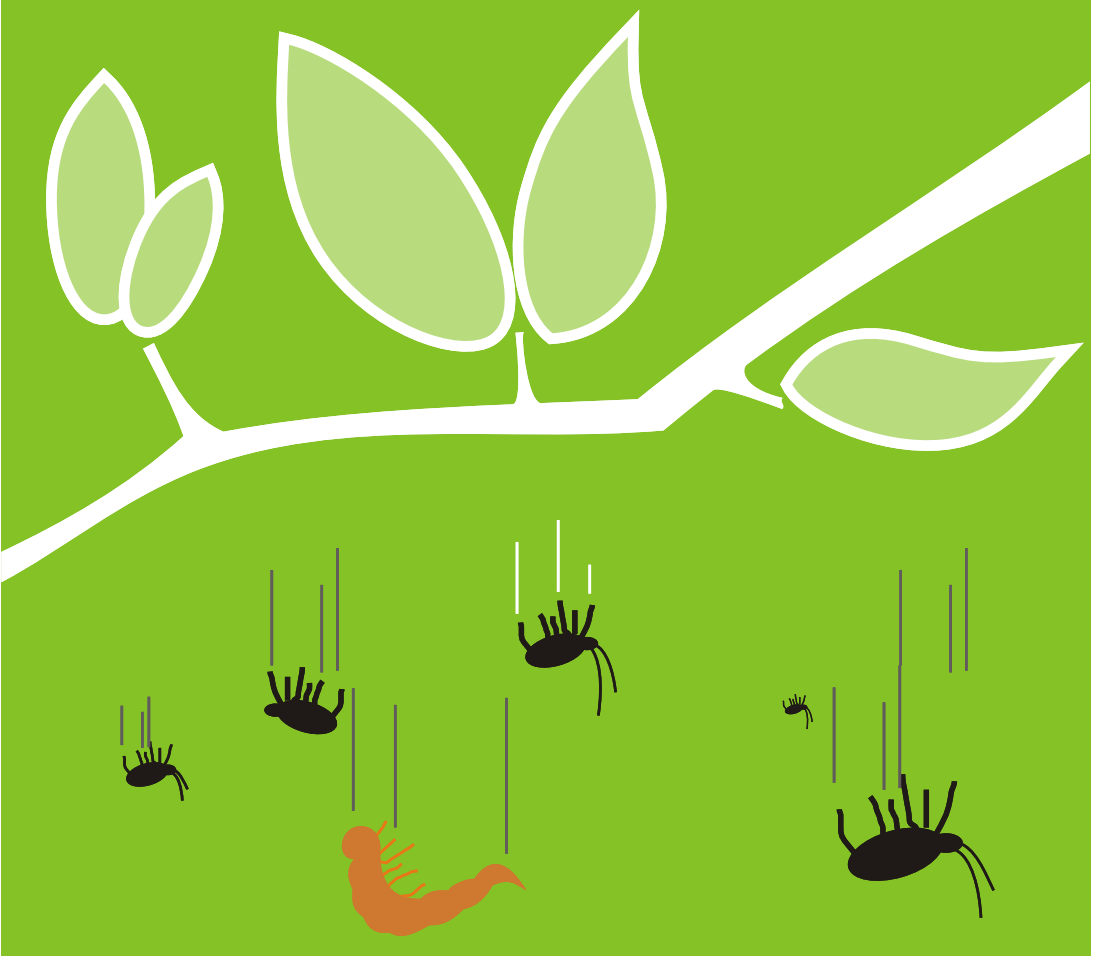
Alternative to Pesticides



Pesticide Action Network Europe

AWHHE

For information

- Every gardener can fight against the pests and diseases also without using pesticides.
- Pests are a man's inventions, and it was only during the struggle for existence that some animals were declared “enemies”.
- All living organisms including pests play an important role in the ecosystem.
- Every bio-gardener can get a good harvest using “peaceful means” without disturbing the natural balance.

Foreword

In this brochure are introduced the conception of Integrated Pest Management (IPM), the substances that are good for plants' protection, the vegetative preparations possessing insecticide and tickicide properties, as well natural means of local production intended to reduce the use of pesticides.

The brochure is designed for agronomists, farmers and wide sections of rural working people.

Each farmer knows well how harmful the pests and diseases are for the crops. They are well aware of different pesticides that are used for the pest control. It must be taken into account that the use of pesticides is dangerous for the human health, as well for the environment.

The medicines and green fertilizers mainly grow under our feet. Simply it would be better if we knew their properties and were able to prepare curative tinctures correctly.

We wish you success. Remember, the pledge of the rich harvest is the health of soil and plants.

IPM Integrated Pest Management

Integrated Pest Management is the careful consideration of all possible pest control methods and consistent integration of appropriate measures that impedes the development of pest populations and keeps the pesticides and other interventions to levels that are economically motivated and reduce or minimize the risks to human health and the environment.

IPM gives importance to the growing of crops with minimal effects on agro-ecosystems and encourages the mechanisms of pest natural management.

For farmers, specialists on plant protection the IPM is the best integration of vegetative, biological, agro-technical and chemical techniques which ensures economically the most efficient control of diseases, insects, weeds and other pests with environmentally safe and socially acceptable methods.

IPM considers all important pest control tactics and methods that are locally available by evaluating their potential cost effectiveness.

For the implementation of IPM the responsibility lies on farmers who should apply the elements of IPM in practice to improve their activities.

Peculiarities and benefits

IPM should include also the diversity of appropriate crops and agents that execute biological control, including those that have been improved through biotechnology. The user of IPM should estimate the cost effectiveness of potential value of the whole strategy.

The main components of IPM strategy are: prevention, observation, intervention.

Prevention includes a series of practical strategies that can be improved to suit local conditions. Observation executes monitoring with decision making which is very often combined with “expert systems”.

Intervention includes a range of physical, biological and chemical methods optimally applied to preserve the economic value of crops with minimal effects on the environment.

Many aspects of farming and plants management are aimed at limiting or preventing initial outbreaks of pests, weeds and diseases. Many of practical strategies that are common in agriculture can be combined and optimized to make IPM programs.

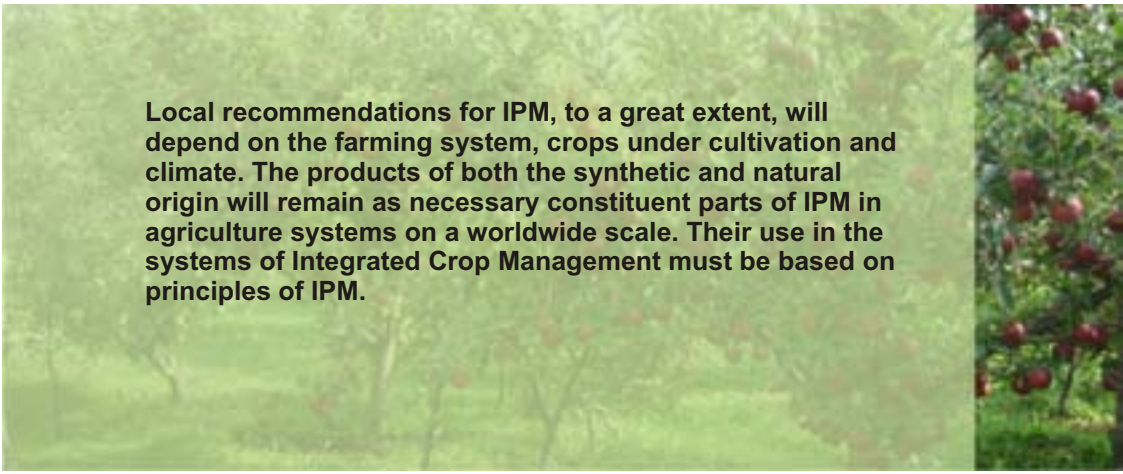
Monitoring and observation of crops is an important step to determine when and how to intervene. Many indirect prevention measures have a cumulative effect, for example, resistance of host plant, crop rotation and conservancy of natural enemies. All this helps to decrease pest pressure, but very often is not sufficient to eliminate the necessity of some forms of interventions independently.

Observation
The aim of observation is to determine when and what action should be taken to maximize the crop production and optimize the quality at harvesting. This includes monitoring and systems supporting the decision –making to give an explanation for data.

Intervention
The reduction of the effects of economically harmful pests, weeds and diseases to acceptable levels may include mechanical, biological, chemical and biotechnological control measures that can be applied separately or in a combined form. Costs, benefits, available labor force, machines/tools and control agents, as well as economic, environmental and social effects should be taken into consideration.

IPM

Biological control includes the introduction of beneficial insects or predators, the use of biological produce, such as viruses, fungi and bacteria and the use of pheromones to trap, lure and kill the insects.



Local recommendations for IPM, to a great extent, will depend on the farming system, crops under cultivation and climate. The products of both the synthetic and natural origin will remain as necessary constituent parts of IPM in agriculture systems on a worldwide scale. Their use in the systems of Integrated Crop Management must be based on principles of IPM.

For information

Besides the organic waste it's better to collect also the raw material for composting from your croft, for ex. withered flowers, remains of vegetables and tea, as well às coffee grounds.

You'd better buy trees and bushes from those nurseries that are situated nearby your locality. In this case they will easily adapt to the conditions of your garden.

Vegetative preparations possessing insecticide and tickicide properties

For the protection from the harmful insects and ticks one can use tinctures and decoctions made from wild plants and crops that have insecticide and tickicide properties. The advantage of vegetative preparations over the chemical pest control means is in their safety for the people, animals and the environment. The insecticide and tickicide properties of vegetative preparations in open-air surroundings, especially under the influence of sun-rays are preserved comparatively not for a long time. Besides that, the vegetative preparations in forms of tinctures and decoctions, compared with chemical pest control means, can be applied right up to the harvest.

At the same time it's worth noting, that the use of vegetative preparations is mainly based on the experiments and observations of amateur gardeners. So, to make sure of the efficiency, it's advisable to test the preparations on separate branches or trees.

The storing up of the plants possessing insecticide and tickicide properties offers no special difficulty, as far as they can be found in the croft or in nearby area. The stuff for the vegetative preparations should be stored in dry weather and during the stages of vegetation as recommended for those plants. It's necessary to clean the roots, tubers and bulbs off the soil and remove the blackened parts. The stored plants must be dried in the shade.

The stems, anthodium, leaves before drying must be reduced into small pieces, and the roots and bulbs must be cut. To avoid the humidity it's better to keep the stored and dried plants in paper bags or boxes, to label them and write the names of the plants and the storage date on them. Tinctures and decoctions can be made from fresh or dried plants.
To prepare decoctions it's necessary to keep the vegetative mass in boiled water, then the liquid must be filtered through gauze, poured into the tightly closed glass bottles and kept in a cold place. Under such conditions decoctions can be kept for 1-2 months. Tinctures are made by keeping the vegetative mass in warm water (35 - 45^{o}C).

During spraying in order to improve the viscidity of some vegetative preparations on plants before using them it's necessary to add some household soap previously dissolved in warm water.

For a purpose of spraying the vegetative preparations must be used on the very day of their preparation. The best time is the evening hours, because under the influence of sun-rays the prevailing part of these preparations looses its insecticide and tickicide properties. Despite the fact, that the vegetative preparations are less toxic in comparison with the chemical means, nevertheless, the precautionary measures of their storage, preparation and use must comply with the established rules of handling with chemical and biological control means.

Below are given the names of the available plants that are widely spread in Armenia and considered to have insecticide and tickicide properties. Also are described the technologies of preparing tinctures and decoctions.

Marigold (Tagetes L.)

Store up the plants during the blossom period. Fill the half of an enameled pail with dried and cut plants, then add some warm water up to the brims of the pail and leave in that way for 2 days. After that filter the liquid and add 40 grams of household soap. Use the ready solution against the aphides of fruit-trees.

Mustard (Brassica juncea (L.) Czern)

Take 5-6 grams of man-made mustard powder, add 10 L of water and leave for 10-12 hours. Use this solution for spraying against the red ticks of fruit-trees.

Potato (Solanum tuberosum L.)

Take 1-2 kg green or 0.6-0.8 kg previously dried potato leaves and stems, keep for 3-4 hours in 10 L warm water, then filter the liquid and add 40 grams of household soap. Use the ready solution for spraying against the aphides and ticks of orchard trees.

Larkspur (Delphinium L.)

Store up the plants at the beginning of the blossom period. Dry and cut the plants very small, put 1 kg of vegetative mass into 10 L water and leave for 2 days. After that filter the liquid and apply it for spraying. To prepare decoction of the same plant it's necessary to keep 1 kg of dried plant in 10 L water for 10-12 hours. Then the liquid must be boiled and filtered. The ready solution can be kept for a month.
It's applied against the pests of fruit-trees, particularly against the saw-flies of pear-, apple- and plum-trees, also against the slimy saw-fly of cherry-trees, larvae of beetles, the aphides of apple- and pear- trees, the ringed cocoon-knitters, the larvae of hawthorn butterfly and bombyx/silkworm.

Burdock (Arctium L.)

Cut the fresh leaves very small. Fill one third of a pail with it, add water up to the brims of a pail, and leave for 3 days. Then have it filtered and use the ready solution against the larvae of the bloody nosed beetles of fruit-trees.

Onion (Allium cepa L.)

Take 200 grams of onion shells and add 10 L of warm water, leave for 4-5 days, then filter the liquid and use the ready solution for spraying against the aphides and midges of fruit-trees.

For information

The precautionary care of plants makes them resistant to diseases and pests. This care includes also the care after soil, application of compost, mulching cover and organic fertilizers.

- The combined sowings and proper neighborhood favor the healthy growth.
- The choice of sorts that are already adapted to climatic conditions of your garden favors the integrated development. Pests generally avoid strong plants.
- By creating vital conditions for beneficial animals and pests in your garden you gain gratis assistants.
- Plants also are able to protect each other from pests.

Medicinal Dandelion (Taraxacum officinale Wigg.)

Take 200-300 grams of small cut stub roots and 400 grams of green leaves, add 10 L water and keep for 2-3 hours. Then filter the liquid and spray with that ready solution the fruit-trees during the opening of the buds and immediately after the fall of the flowers against the aphides and ticks.

Pepper (Piper L.)

Take 1 kg of green or 0.5 kg of dried and small cut pods of pepper, add 10 L water and leave for 2 days. Boil for an hour, filter the liquid and keep the ready decoction in a dark place.
For the control of the young larvae of aphides and moths before the blossom of the trees, it's necessary to add 0.5 L broth to 10 L water.
After the fall of the petals for the same quantity of water take 0.1 L decoction. Before spraying add 40 grams of household soap to the decoction previously diluted with water.

Wormwood (Artemisia absinthium L.)

During the blossom period it's necessary to pick the over-ground parts of the plants, cut very small and fill the half of a pail with it, add 10 L water. Leave in this way for a day, then boil it for 30 minutes, filter and again add 10 L of water and use the ready solution for spraying against the seed-worm of apple-trees. The first spraying must be done in 18-20 days after the fall of the petals of apple-trees. The following 3-4 sprayings should be repeated with intervals of 7-8 days. The sprayings decrease the quantity of larvae of the bloody nosed beetles of fruit-trees.

For information

The natural substances are not always ecologically safe. In case you have doubts you'd better avoid the use of aggressive means, that are destructive and in favor of nature base only on the following principle: "In the end the peace-lovers become the strongest ones".

Tomato (Lycopersicon esculentum Mill.)

To prepare decoction use the over-ground green parts and the roots of the plants. Take 4 kg of green plants, add 10 L water, leave for 3-4 hours and then boil the liquid for 30 minutes on a slow fire. Cool the decoction and filter it. Then pour it into the tightly closed glass bottles and keep in a cold place. Under such conditions the decoction doesn't loose its insecticide and tickicide properties for a year. Before the use dilute the decoction with water and add 40 grams of household soap to 1L of the solution.
To prepare decoction from the dried plants of tomato pour 10 L water on 1kg of stuff and leave for 4-5 hours. Then have the liquid boiled for 2-3 hours on a slow fire. Cool the decoction, filter it and add water of double quantity. Before spraying add 40 grams of household soap to each 10 L of decoction. This is applied against the seed-worm of an apple tree, larvae of ticks and moths.

Milfoil (Achillea millefolium L.)

During the blossom period it's necessary to store up the over-ground parts of the plants. To prepare tincture take 800 grams of dried, small cut vegetative mass and add water so that it makes up 10 L. Before spraying add 40 grams of household soap to each 10 L of tincture. The ready solution is applied against the aphides, midges, bugs, young larvae, including moths of an apple-tree.

Garlic (Allim Sativum L.)

To prepare tincture it's necessary to take 0.5 kg of garlic bulbs, cut very small, add 10 L water, and then squeeze the garlic mass in water. Filter it and use for spraying against the aphides and ticks. This tincture, made from the dry leaves and peels of garlic bulbs, also can be used against the pests of the same group. For that purpose it's necessary to take 100-150 grams of cut mass, add 10 L water and leave for 24 hours. After that the tincture must be used immediately for spraying.

Sorrel (Rumex acetosella L.)

Take 300 grams of small cut roots of the plants, add 10 L water, and leave for 2-3 hours. Then filter it and use against the aphides and midges.

Hellebore (Helleborus L.)

Store up these plants wholly together with root systems still in autumn. The plants can be stored also in spring, when the leaves begin to appear. To prepare tincture it's necessary to take 500 grams of fresh or 100-250 grams of dried vegetative mass, add 10 L water and leave for 1-2 days. Then filter the liquid and use it for spraying against the larvae of moths, ringed cocoon-knitters and slimy saw-fly of a cherry-tree.

For information

Many medicinal plants are considered "green" also for a garden. For the pest and diseases control the gardener can prepare effective means from nettle, garlic, wormwood and other plants. Everybody can prepare liquid fertilizers, tinctures and decoctions himself.
The nature itself provides with the components of these preparations free of charge.
The protective belts made from dust, traps, gluey rings, nets to protect from birds and snails will help the gardener to keep the pests away from his plants.

Camomile (Matricaria L.)

Take 200 grams of stems, leaves, anthodium and roots of the plants, add 1 L water and leave 10-12 hours, after that transfer the liquid into the glass bottles. Pour 5 L water on the rest of the vegetable mass and leave for 12 hours. Then fill these two kinds of tinctures in one common container and use for spraying. It's applied against the young larvae of aphides, midges, moths and cocoon-knitters.

Stagger-bush (Picris L.)

At the beginning of a blossom period it's necessary to store up the plants wholly. To make tincture pour 10 L water on 1-2 kg of small cut vegetative mass and leave for a day. Then have it filtered and use the ready solution against the aphides, midges and cicadas of fruit-trees. For making decoction take 1-2 kg of small cut stuff, add 10 L water and leave for 6-8 hours then boil the liquid for 30 minutes, cool it and filter. Before spraying, again add 10 L water to the broth, and then add 20-30 grams of household soap to each 10 L broth. The ready solution can be used against the above-mentioned pests.

Stramony (Datura stramonium L.)

Store up the over-ground parts of the plants during the blossom period and dry them. To make tincture take 1 kg of small cut dried stuff, add 10 L water and leave for 12 hours. Then have the liquid filtered and cooled. Before spraying add 20-40 grams of household soap to the tincture and apply it against the aphides, midges and ticks.

Prepare strong tea from green leaves of watercress which should be decocted for 10-15 minutes. After straining keep that concentrate in tightly closed bottle, in a cool place. The tincture of watercress is applied with a brush to the blood-sucker aphids.

For information

Nightshade (Solanum dulcamara L.)

Store up still not hardened tops of stems together with leaves and flowers. To make decoction, take 5-6 kg of fresh mass, add 10 L water and leave for 3-4 hours. After that boil the liquid for 3 hours on a small fire, cool it, filter and pour into the tightly closed glass bottles. Decoction can be kept for a long time in a dark and cool place. Before spraying add 30-40 grams of household soap to 10 L decoction. This solution is used against the aphides, midges and young larvae of bloody nosed beetles.

Liquorice foxtail (Goebelia Bunge)

Store up and dry the fresh parts of the plants during the blossom period. For making tincture take 1-2 kg of small cut and dried stuff, add 10 L water and leave for a day. Before spraying add 30-40 grams of household soap. This solution is used against the young larvae of aphides, midges of fruit-trees, as well against the larvae of saw-flies and moths of apple-trees.

Natural means of local production for spraying

Plant	Components to 10 L water	Preparation/possible mixtures	Application	Effect
Field horse tail (F. arvense L.)	1kg fresh mass or 150g dried mass	Decoction, liquid fertilizer, mixed with nettle	Precautionary spraying starting from spring till the end of summer during sunny weather, if possible, in the first half of the day, to be diluted (1:5)	This decoction makes the plants more resistant to such fungi diseases as mildew, scab and powdery mildew. The liquid fertilizer raises the resistance of plants to aphids and arachnoids.
Comfray (blue and consound) (Symphytum L).	1kg fresh leaves or 150g dried plant	Liquid fertilizer, mixed with nettle	To use this liquid fertilizer during vegetation, dilution - 1:10	It strengthens the plants, is rich in potassium, and is especially good for tomatoes.
Nettle (Urtica L.)	1kg fresh or 150g dried green mass	Liquid fertilizer mixed with comfrey, horse-tail/scouring rush and chive, with other herbs in small quantities, extract made in cold water	Use the liquid fertilizer during vegetation, dilution - 1:10 Spray the leaves of the plants with liquid fertilizer (1:20) Spray with the extract, that was made with cold water, without dilution	The liquid fertilizer makes the plants firmer, protects from insects. The extract is used against aphids/plant - lice.
Bracken (Pteridium aquilinium L.)	1kg fresh leaves or 150g dried green mass	Liquid fertilizer or decoction	Spray especially the fruit trees in early spring, dilution - 1:10 In spring and summer months spray the plant and soil with undiluted solution to protect he plants against fungi diseases	Against different kinds of aphids, first of all against mildew.

Chamomile (M. chamomilla L.)	50g dried flowers	Tincture	Spray the plants and compost piles in summer without diluting	Makes the plants firmer, promotes the composting process, disinfects the seeds
Garlic (Allium sativum L.)	500g garlic	Liquid fertilizer mixed with garlic (1:1), some leaves of black currant also can be added	Spray the soil of beds and the circles round the trunks, dilution - 1:10	Raises the resistance of plants (first of all to the fungi diseases of potatoes and wild strawberry)
Garlic (Allium sativum L.)	10g garlic for 1L water	To make like tea and extract for 24 hours	Spray the beds once 5 days, during a few weeks, against the cucumber powdery mildew, by diluting 1:3	This is successfully applied first of all against the cucumber powdery mildew. This is confirmed by scientific experiment.
Cabbage (Brassica L.)	3kg fresh leaves or remains of it if needed	Liquid fertilizer mixed with liquid fertilizer of nettle	Nourishing liquid fertilizer , can be used also to spray the young plants by diluting 1:3	Strengthens the plants, favors the healthy growth.
Rhubarb (Rheum L.)	500g fresh leaves for 3 L water	Decoction, tincture	Spray the plants without diluting	Against the black aphids and moth of onion
Tansy (Tanacetum L.)	300g fresh parts of the plant or 30g dried grass	Tincture mixed with nettle tincture	In winter spray the plants without diluting, in summer spray the leaves of the plants and the soil by diluting 1:3	Against different ticks, small bugs, garden white butterflies and other insects, also against the powdery mildew
Tomato (Lycopersicon esculentum Mill)	2 handfuls of leaves and offshoots for 2-3L water	Extract made in cold water, to decoct the squeezed parts of the plants for 3 hours	Spray the cabbage plant once two days without diluting during the flight of the garden white/sulfur butterfly	Against pupae of cabbage white butterfly

Wormwood (Artemisia L.)	300g fresh mass or 30g dried grass	Tincture, liquid fertilizer	Spray the plants with liquid fertilizer in spring and summer without diluting Spray in June and July by diluting 1:3, in autumn, the dilution is 1:2	Protects from ants, aphids, pupa of garden white butterfly, especially against the anthracnose of currant, the summer spraying is against the plant-lice and seed worm of apple tree, the autumn spraying is against the ticks of wild strawberry and blackberry.
Onion (Allium L.)	500g fresh onion	Liquid fertilizer mixed with garlic, crow garlic	Spray with liquid fertilizer the beds and circles round the trunks, dilution -1:10	The liquid fertilizer increases the resistance to fungi diseases.
Onion (Allium L.)	75g cut onion	Tincture, to extract for 5 hours	Spray the plants and soil without diluting	Against flies, ticks of cucumber and fungi diseases
Natural substances: non-fat milk, lacto-serum	If needed	Mixed with water (1:1)	Spray the tomato in June-August, once a week	Prevention of fungi diseases, precaution
Bitter-wood (Quassia amara L.)	150g for 2L water	Decoction mixed with 250g liquid soap	Use only in case of emergency, if the plants are severely infected with pests, dilute in 10-20L water	Kills the plant-lice and other insects, but is harmful to the beneficial insects
Liquid soap	150-300g clean, potassium soap, dissolve in warm water	On average 2% solution mixed with100-300 cm3 denaturated alcohol	Spray the infected plants without diluting	Against the plant-lice, when mixed with alcohol is also used against coccid. It is harmful to the beneficial insects
Liquid glass	-----	2% solution	Winter spraying of fruit trees	Prevents the fungi diseases. Do not spray vegetables or anthodium

Plants used against the pests and diseases

Plant-lice/aphids (different kinds)	Aconite, henbane, cow-parsnip, herb-Paris, stagger-bush, mustard, larkspur, stramony, potato, onion, dandelion, pepper, pyrethrum, pine, tobacco, milfoil, citric plants, hellebore, celandine, garlic
Coccids, European fruit scale	Cow-parsnip, mustard, pyrethrum, celandine
Weevils/snout beetles	Elder, water-hemlock, hellebore, garlic
Seedworm	Elder, mustard, tomato, hellebore
Bloody nosed beetle	Aconite, henbane, poison-hemlock, nightshade, wormwood, chamomile, pine
Moth	Meadow-saffron, henbane, poison-hemlock, water-hemlock, herb-Paris, pyrethrum, chamomile, tobacco, hellebore
Geometrid moth	Water-hemlock, larkspur, poison-hemlock, herb-Paris, mustard, tobacco
Saw-fly	Aconite, meadow-saffron, henbane, poison-hemlock, water-hemlock, larkspur, stramony, nightshade, pyrethrum, chamomile, pine, tobacco, tomato, hellebore
Wood/meadow bug	Henbane, mustard, stramony, burdock, onion, spurge, dandelion, pepper, tomato, milfoil, garlic
Tick (arachnoid, ordinary)	Aconite, henbane, cow-parsnip, stagger-bush, mustard, larkspur, potato, virgin's-bower, burdock, onion, pepper, pyrethrum, tobacco, milfoil, garlic
Nematode worms	Larkspur, citric plants, garlic
Murine rodents	Aconite, meadow-saffron, elder, herb-Paris, hellebore
Powdery mildew, mildew, spottiness, vine wilt	Onion, sow-thistle

Bait against murine rodents and rats can be made under home conditions in the following ways.
For mice take burnt lime (500g), flour (300g), sugar (200g), mix well, then put in piles in the areas to be protected (storehouse, basement, apartment) and put water in front of the bait.
For the rats' control prepare the following mixture: gypsum (500g), flour (200g) and sugar (200g). Put water next to the mixture. The mice or rats eating this mixture, feel thirsty and when they drink water, there takes place a reaction in their stomach which causes their death.

For information

The field mice periodically attack the gardens and gnaw the poppies and small bulbous plants. It is better to plant narcissi, as their bulbs contain toxic alkaloid and the field mice do not touch them. The narcissi will ensure cloudless happiness for many years.

Potassic Soda may be used against the diseases of currant, gooseberry, raspberry and other berries. For that purpose dissolve soda ash in water (50g /10L) and add household soap to it (50g/10L). The solution is used for spraying before fruitage.

Sodium chloride (table salt). The water solution of this matter protects the tomato plant from famine fungus. The plants that are sprayed with 10% solution of this matter (1kg/10L) do not become infected with the given disease if the weather is not rainy.

Rotten grass, manure. This may be used as a disinfectant, fungicide and repulsive means for the plant protection.
The water solution of manure (1:6) is used for the disinfection of crop seeds before sowing by keeping seeds in it for 6 hours.
The decoction of rotten grass or manure may be used against the powdery mildew of currant and gooseberry. The bushes are sprayed with strained solution as soon as the first signs of disease appear.

To prepare solution fill the 1/3 of a pail of 10 L capacity with given substances, add 3 L water, keep for 3 days, then fill water to the brim of a pail and use after it was strained. Spraying should be repeated in 10-15 days.
The solution made from manure and lime is used to whitewash the tree trunks. The mixture of manure, clay or road dust also may be used. The whitewashing of trunks and skeleton branches protects from sunburn and kills the wintering pests and germs of diseases.

For information

Pay attention to carabuses (predatory beetles). They are natural enemies of larvae of Colorado beetle. Pick the eggs, larvae and bugs from the leaves on time. This is the most effective control measure. Besides it, mulch the beds with shield ferns and spray with decoction made from that plants.

Carbamide can be used as fungicide against the winter phase of scab of fruit bearing trees.
The water solution of carbamide (700g/10L) in early spring and autumn after the harvest before the fall of leaves (in latter case use 50g/10L) is used for watering the surrounding areas of trunks.

Ash is an effective measure against the pests of plants. The sifted ash may be used to protect the cabbage, radish, early radish from fleas of Cruciferae by pollination. The norm to be used is 5g/1m 2. The ash-water is used also against the sucking pests. For that purpose stir the ash in boiled water (1kg/8L), keep it for 2 hours and strain. After that add water till it makes 10L, dissolve household soap (40g/10L) and use it for spraying. Spray with this solution 2-3 times a month.

Glue-water is used against the carabuses, beetles, brazen beetle (100-200g glue/10L water). Spray when the pest colonies appear on the buds and young branches. The pests become coated with glue and die.

Green soap is used against the sucking pests. To prepare this solution dissolve 200-400g soap in 10L water. Spray the flowers, decorative bushes thrice before and after blossom..

For information

Mix fresh milk without pasteurization or the lacto-serum with water (1:1). Spray with this solution the tomato plants once a week. It is advisable to perform such prophylactics beforehand, when the plants are still young. It will prevent the diseases of leaves, particularly fungi diseases.

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In the mixed orchards in Fantan and Dzoraghbyur villages the NGO AWHHE in the frame of TMF project in 2006 implemented some elements of IPM:

- proper agrotechnics;
- mechanical control;
- tinctures made from wormwood and milfoil;
- biological control: pheromones to trap the seed worms of apple trees.

As a rule, vegetative tinctures made from wormwood and milfoil are used against pests, but the experience showed that they also prevented the further development of diseases. The performed measures had a good result and the farmers were convinced in possibility to have a healthy garden and get a rich harvest without using pesticides and preferring the synthesis of all other possible means of management. The neighbor gardeners followed the successful experience of the NGO AWHHE. You may also recruit their lines, as the tinctures are safe and free of charge compared with pesticides.

Monitoring of biological (pheromone) traps

Monitoring of fruit-trees

Seminar on benefits of tinctures' use

Monitoring of the orchard

Pesticide Action Network Europe

WECF

Women in Europe for Common Future

AWHHE

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