INTEGRATED PEST MANAGEMENT
iPM
Working with nature

With the exhibition

INTEGRATED PEST MANAGEMENT: WORKING WITH NATURE

International Organisation for Biological Control (IOBC-wprs), International Biocontrol Manufacturers Association (IBMA) and Pesticide Action Network Europe (PAN Europe) wish to illustrate what Integrated Pest Management (IPM) means, and how the Sustainable Use Directive can be implemented.

These 11 plates form a touring exhibition of large-scale panels that have been shown in various locations: European Commission DG AGRI, DG SANTE etc.

The examples provided on the posters are used in practice on a large acreage in a variety of countries. They illustrate a small number of methods and applications of biocontrol agents available to European growers and farmers. Biological solutions have been developed for various sectors, from greenhouse crops to orchards, vineyards, vegetables, ornamentals, and arable crops. The use of biocontrol agents is rapidly growing worldwide and innovative research in institutes as well as in companies is delivering new tools and methods continuously. The future of IPM with these new tools, especially if applied in combination with good agronomic practice, therefore looks very promising enabling a more sustainable agriculture with less impact on the environment and biodiversity whilst yielding safe food for the growing human population.

Should you wish to host this exhibition please contact Henriette Christensen at henriette@pan-europe.info

Reducing the dependence of agricultural production on synthetic pesticides and promoting the principles of IPM have long been central goals for the **International Organisation for Biological and Integrated Control (IOBC-wprs)**

Although challenges remain, combined research efforts of scientists and innovative approaches of farmers and farm advisors have already produced inspiring success stories. New biocontrol solutions are becoming increasingly available and being strategically combined with other tools of plant health management. To help solve persistent constraints, the IOBC community is committed to address issues pertaining to research as well as providing expertise to farmers, the agricultural supply and value chains and policy makers.

International Biocontrol Manufacturers Association (IBMA) and its members passionately believe in delivering innovative efficacious biocontrol solutions having low impact on human health and the environment. These tools fit perfectly into the system-based approach proposed for modern agriculture under the SUD to be used as a first resource when intervention to manage pest populations is required. Examples of these tools used in practice in an IPM system are shown in the exhibited posters.

Pesticide Action Network Europe (PAN Europe) and its members have for decades been calling for the importance of developing an EU legislation on the use of pesticides, and we were closely involved in the birth of the Sustainable Use Directive (Directive 2009/128/EC).

However, since this directive was adopted in 2009 little has been done to ensure proper implementation. We hope this exhibition can help to ensure a better uptake of the many alternatives already on the market, particularly where there are huge differences in uptake between sectors, countries and farmers.

8 CÉRÉALIERS ET 3 POLYCULTEURS ELEVEURS

Photo prise à Bézu la foret, proche de Etrepagny Bordure du plateau du Vexin Normand

25 NOVEMBRE 2014

50% DE RÉDUCTION DE L'USAGE DE PRODUITS PHYTOSANITAIRES EST POSSIBLE POUR CES CÉRÉALIERS ET POLYCULTEURS ÉLEVEURS

50% REDUCTION OF PLANT PROTECTION PRODUCTS USE IS POSSIBLE FOR THESE CEREAL PRODUCERS AND MIXED CROP AND LIVESTOCK FARMERS

The group of farmers on the opposite page is, since 2010, one of the 1,800 farmer groups in the Réseau DEPHY ECOPHTYTO that the French government has used as a pilot group to ensure a successful implementation of the French Ecophyto objective to reduce pesticide use by 50%, if possible, between 2008 and 2018. This objective has just been delayed by 7 years (2025).

This group of farmers, advised and inspired by Bertrand Omon in the middle, cover a wide range of crops: cereal, polycultures including industrial crops like beets, linseed and alfalfa. The project also includes dairy farmers cultivating more than one animal feed. Not only type of production but also their farm size varies, each of the farmers are full time farmers either on their own farm or in collaborations.

This group, which has been working together since the early 2000s, with new arrivals joining over time, was one of the original 18 groups that the French government established in 2010 as part of the French ecophyto plan. This group has already reached the political objective of reducing their pesticide use by 50% in 2010.

Key in the move towards reducing pesticide dependency is obtaining more autonomous systems, and the farmers discovered that by doing so they were not only able to reduce dependency on pesticides, but also their dependency on other inputs (like fertilisers).

By working together, each member of this group has developed a more accurate understanding of sustainability, with each one of them being able to keep their personal preferences in the sustainability criteria, and having individual reduction targets.

This group of farmers is a very heterogeneous group of farmers: as they are neither producing the same nor farming in geographical proximity, coming from different parts of the region of Eure in France. However, by working as a group they have found the inspiration to work together towards the goal of reducing pesticide dependency. This is now a solid reference for other farmers, as each of their farms are demonstration farms, and both citizens and other farmers can come to see them and learn about their Crop System on Ecophyto PIC.

For more information about the French demonstration farm and also about this group see:
http://agriculture.gouv.fr/ministere/ferme-dephy-2010

DIRECTIVE 2009/128/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL
ESTABLISHING A FRAMEWORK FOR COMMUNITY ACTION TO ACHIEVE THE SUSTAINABLE USE OF PESTICIDES

GENERAL PRINCIPLES OF INTEGRATED PEST MANAGEMENT

1. The prevention and/or suppression of harmful organisms should be achieved or supported among other options especially by:

— crop rotation,

— use of adequate cultivation techniques (e.g. stale seedbed technique, sowing dates and densities, under-sowing, conservation tillage, pruning and direct sowing),

— use, where appropriate, of resistant/tolerant cultivars and standard/certified seed and planting material,

— use of balanced fertilisation, liming and irrigation/drainage practices,

— preventing the spreading of harmful organisms by hygiene measures (e.g. by regular cleansing of machinery and equipment),

— protection and enhancement of important beneficial organisms, e.g. by adequate plant protection measures or the utilisation of ecological infrastructures inside and outside production sites.

2. Harmful organisms must be monitored by adequate methods and tools, where available. Such adequate tools should include observations in the field as well as scientifically sound warning, forecasting and early diagnosis systems, where feasible, as well as the use of advice from professionally qualified advisors.

3. Based on the results of the monitoring the professional user has to decide whether and when to apply plant protection measures. Robust and scientifically sound threshold values are essential components for decision making. For harmful organisms threshold levels defined for the region, specific areas, crops and particular climatic conditions must be taken into account before treatments, where feasible.

4. Sustainable biological, physical and other non-chemical methods must be preferred to chemical methods if they provide satisfactory pest control.

5. The pesticides applied shall be as specific as possible for the target and shall have the least side effects on human health, non-target organisms and the environment.

6. The professional user should keep the use of pesticides and other forms of intervention to levels that are necessary, e.g. by reduced doses, reduced application frequency or partial applications, considering that the level of risk in vegetation is acceptable and they do not increase the risk for development of resistance in populations of harmful organisms.

7. Where the risk of resistance against a plant protection measure is known and where the level of harmful organisms requires repeated application of pesticides to the crops, available anti-resistance strategies should be applied to maintain the effectiveness of the products. This may include the use of multiple pesticides with different modes of action.

8. Based on the records on the use of pesticides and on the monitoring of harmful organisms the professional user should check the success of the applied plant protection measures.

21 OCTOBER 2009

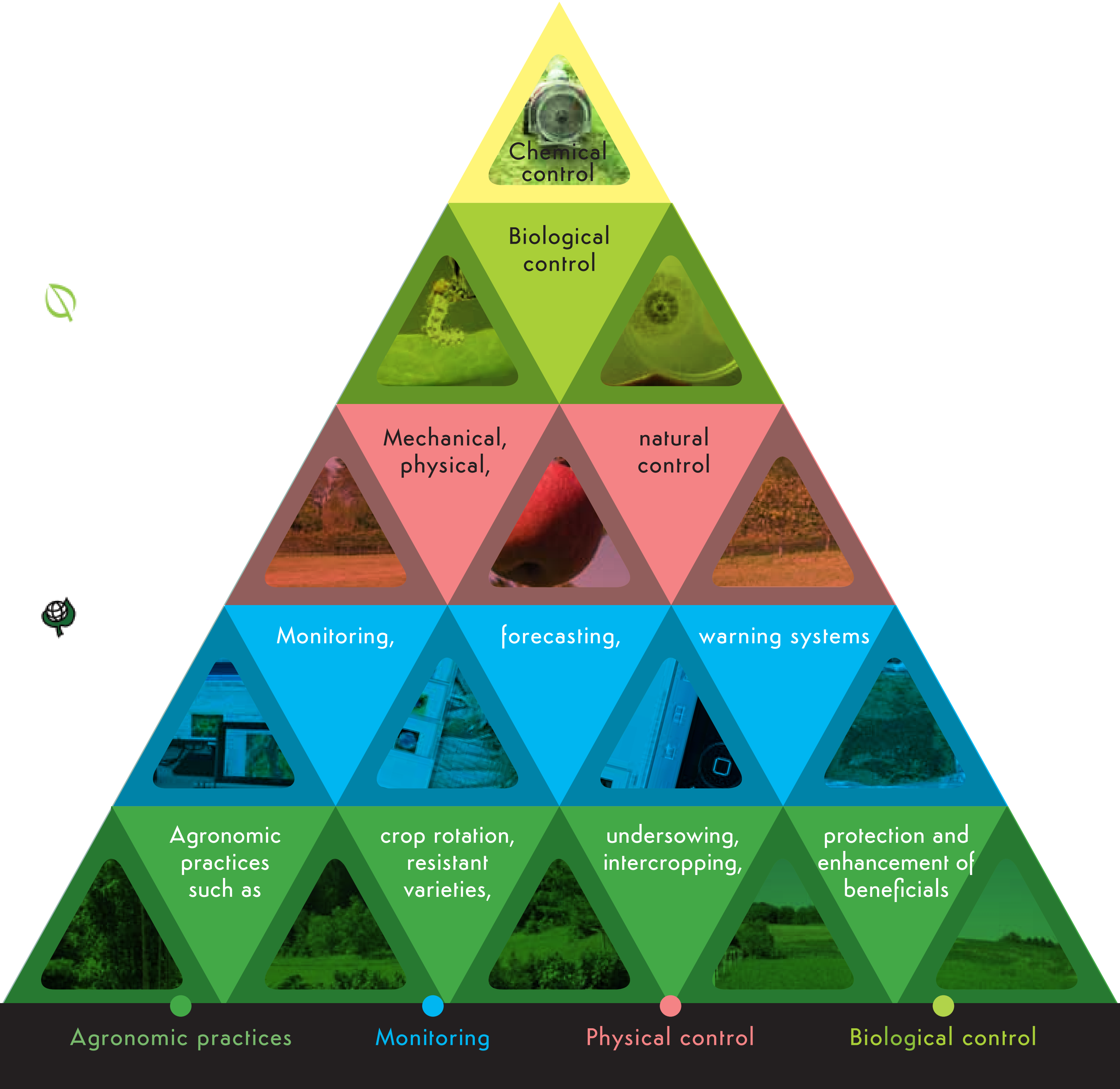
ANNEX III

Clearly the EU Directive on
sustainable use of pesticides (Directive 2009/128/EC) states:

Member States shall take all necessary measures to promote low pesticide-input pest management, giving wherever possible priority to non-chemical methods, so that professional users of pesticides switch to **practices and products** with the lowest risk to human health and the environment among those available for the same pest problem.

This Directive commits Member States to encourage the development and introduction of integrated pest management (IPM), specifying in Annex III what this means, illustrated on the opposite page.

Member States are obliged to decide which of these instruments they will ask farmers to apply as mandatory rules (so-called general principles of IPM), and which instruments they will ask farmers to apply on a voluntary basis (so-called crop specific principles of IPM).


Chemical control
Biological control
Mechanical, physical,
natural control
Monitoring,
forecasting,
warning systems
Agronomic practices such as
crop rotation, resistant varieties,
undersowing, intercropping,
protection and enhancement of beneficials
Agronomic practices
Monitoring
Physical control
Biological control

The general principle of IPM is that the prevention and/or suppression of harmful organisms should be achieved or supported especially by alternatives to synthetic chemical pesticides. Similarly to the 'food pyramid', which represents the optimal number of servings to be eaten each day from each of the basic food groups to stay healthy, the IPM tools can be displayed in a pyramid.

The agronomic practices — crop rotation, use of adequate cultivation techniques, use of resistant/tolerant cultivars and standard/certified seed and planting material, use of balanced fertilisation, liming and irrigation/drainage practices, preventing the spread of harmful organisms by hygiene measures, protection and enhancement of important beneficial organisms, utilisation of ecological infrastructures inside and outside production sites — represent the fundamentals of a healthy crop.

Warning, monitoring and forecasting systems and early diagnosis represent the second step to estimate the risk of crop damages or losses in order to optimise the use of the control measures.

When an intervention is justified sustainable biological, physical and other non-chemical methods must be preferred to chemical methods.

The synthetic chemical pesticides represent the last choice to be used by farmers. The choice of the best active ingredient to be used should be made trying to minimise the risk for the environment.


Diabrotica virgifera virgifera
Crop rotation
Heterorhabditis bacteriophora

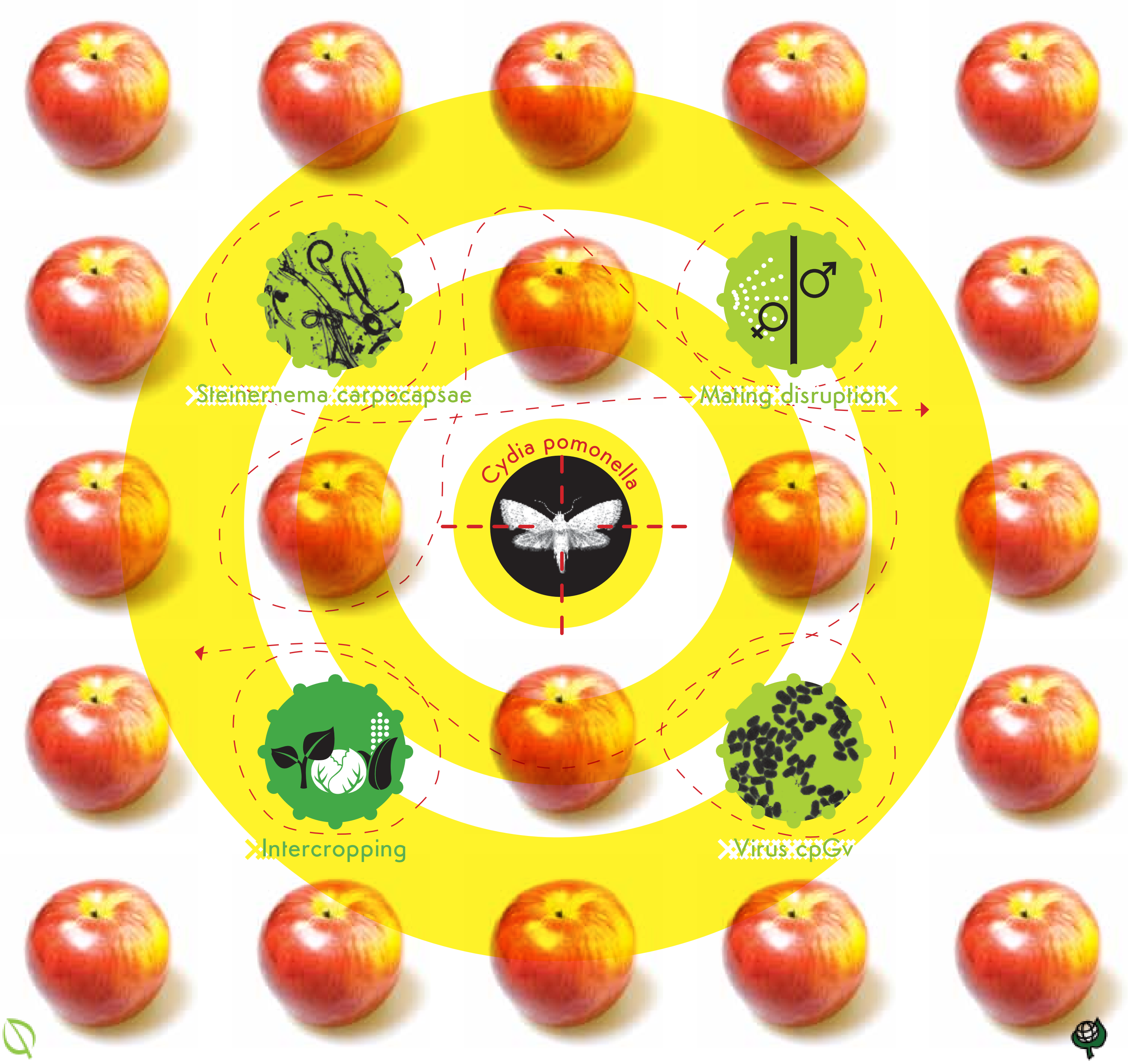
The corn rootworm (WCR) is an important pest of maize, occurring in North America, whose soil-inhabiting larvae can seriously damage roots of maize and lead to yield losses. It was accidently introduced in the 1990s into Serbia. As an invasive quarantine pest in Europe it is slowly spreading to other parts of Europe. It poses a serious threat to maize farmers and control of this species is difficult and expensive, resistance to chemicals being one of the problems.

HETERORHABDITIS BACTERIOPHORA

Heterorhabditis bacteriophora is a parasitic nematode of various insects. It usually lives off soil-dwelling stages of insects like larvae and pupae. It can actively search its host insects and invade them through natural openings. Once inside the insect larvae it releases a symbiotic bacteria that causes the insect to become diseased and ultimately kills it. New nematodes are produced inside the insect larvae and once developed they leave the insect body in search for new hosts. They can be applied by drenching or spraying to soil and other areas where the pest lives. They are safe to other non-target animals and humans.

CROP ROTATION

WCR damage to maize in Europe is only a risk where continuous maize cropping is practiced, especially when maize cropping is prolonged for several years. However, economic damage only occurs in areas with high WCR populations. Where maize is rotated, WCR populations are usually held below the economically-important threshold and there is little risk of significant crop damage. Therefore, IPM for WCR should be based on systematic rotation of crops and supported by information on pest development and population levels as stated by the Directive 2009/128/EC and confirmed by the Recommendation 2014/63/EU (on measures to control Diabrotica virgifera virgifera Le Conte in Union where its presence is confirmed). Any crop apart from maize is suitable for breaking the WCR cycle. One year with a crop apart from maize means two years of WCR prevention in a field. In year 1 after continuous maize, the non-maize crop does not allow larvae development (larvae can significantly develop on maize roots only) so that no beetles emerge from the field; in year 2, again, very few beetles can emerge from the considered field since in year 1 female beetles (possibly coming from other fields) should not have laid eggs in a non-maize crop.



Agronomic practices Monitoring Physical control Biological control

STEINERNEMA CARPOCAPSAE

Steinernema carpocapsae is a parasitic nematode of various insects. It usually lives off soil-dwelling larval and pupal stages of insects. It actively searches host insects and invades them through natural openings. Inside the insect larvae it releases a symbiotic bacteria causing the insect necrosis and death. New nematodes produced inside the insect larvae develop and leave the insect body in search of new hosts. They can be applied by drenching or spraying the tree trunks and bases where codling larvae pupate and overwinter. The overwintering codling moth populations are reduced for the following year. They are safe to other non-target animals and humans.

INTERCROPPING

Manipulating farm habitats make them less favourable for pests and increase the occurrence of beneficial insects. Techniques can be used in apple orchards to manage codling moth Cydia pomonella. Intercropping consists of growing two or more crops in the same location. Alongside establishment of herbaceous strips in orchards this practice can affect insect behaviour and favour biological control by promoting natural enemies. This has been demonstrated by growing selected flower species in the inter-row, resulting in reduced damage by codling moth. Flowers attract natural enemies of codling moth providing them with nectar and pollen. Several years may be needed to build up an efficient population of natural enemies. During this period insecticide use should be significantly reduced or limited to the most selective products with minimal effect on natural enemies. Herbaceous strips with flowering plants can also favour biological control agents of other pests occurring in apple orchards, which use pollen as alternative food to their primary prey.

MATING DISRUPTION

Pheromones are communication tools of different types. Insects sex pheromones are of interest to IPM where a female communicates to the male that she is present for the male to find her for copulation. Male confusion occurs as the male is unable to orient to a single pheromone source and follow the upwind trail to a mate.

Commercial formulations mimic natural chemical blends of female pheromones. Most insect sex pheromones are multicomponent with precise ratios of each component often expensive to manufacture and/or prepare for regulatory studies needed in inappropriate regulations. Thus, products containing pheromones are commercially available primarily for insects of economic importance.

Cydia pomonella Mating Disruption was first applied in the nineties and is the basis for the control of this pest in apple orchards. Today it is applied in over 200.000 ha worldwide.

VIRUS CPGV

Granulosis viruses are Baculoviruses enclosed in a protein body for longer persistence. First isolated in Mexico in the sixties they were developed in the eighties in Europe. They are extremely specific and infect only larval stages, with no impact on vertebrates.

Activity starts only after ingestion when the protein body dissolves in the larvae mesenteron and the virus penetrates the cells, causing death within 24-48 hours. The virus is most efficient on small larvae, leaving no residues in the fruits, allowing use in orchards until harvest. In Europe, the application on Cydia pomonella is in the range of 100.000-150.000 ha every year.

Agronomic practices
Monitoring
Physical control
Biological control

BACILLUS THURIGIENSIS

The ability of Bt (Bacillus thurigiensis) to control insect larvae was discovered more than 100 years ago, however it was first commercially introduced in the 40s. Bt is naturally occurring, soil-dwelling, Gram-positive bacterium. During sporulation it produces a translucent crystal protein, the active ingredient of the formulated products. The crystal protein is a protoxin with insecticidal activity, which is activated in the alkaline midgut of certain insects thus Bt works as an insect gut toxin. Once the target pest larvae has ingested the crystal protein it stops feeding immediately and dies within two days.

There are several formulations available in the market either powder, granular or liquid and Bt is nowadays the largest used biological insecticide on a wide variety of crops worldwide.

MATING DISRUPTION

Pheromones (communication tools) are released by one member of a species to cause a specific interaction with another member of a species. Insects sex pheromones are of particular interest to agricultural IPM and are the communication from a female of a species to the male that she is present allow the male to find her for the purpose of copulation.

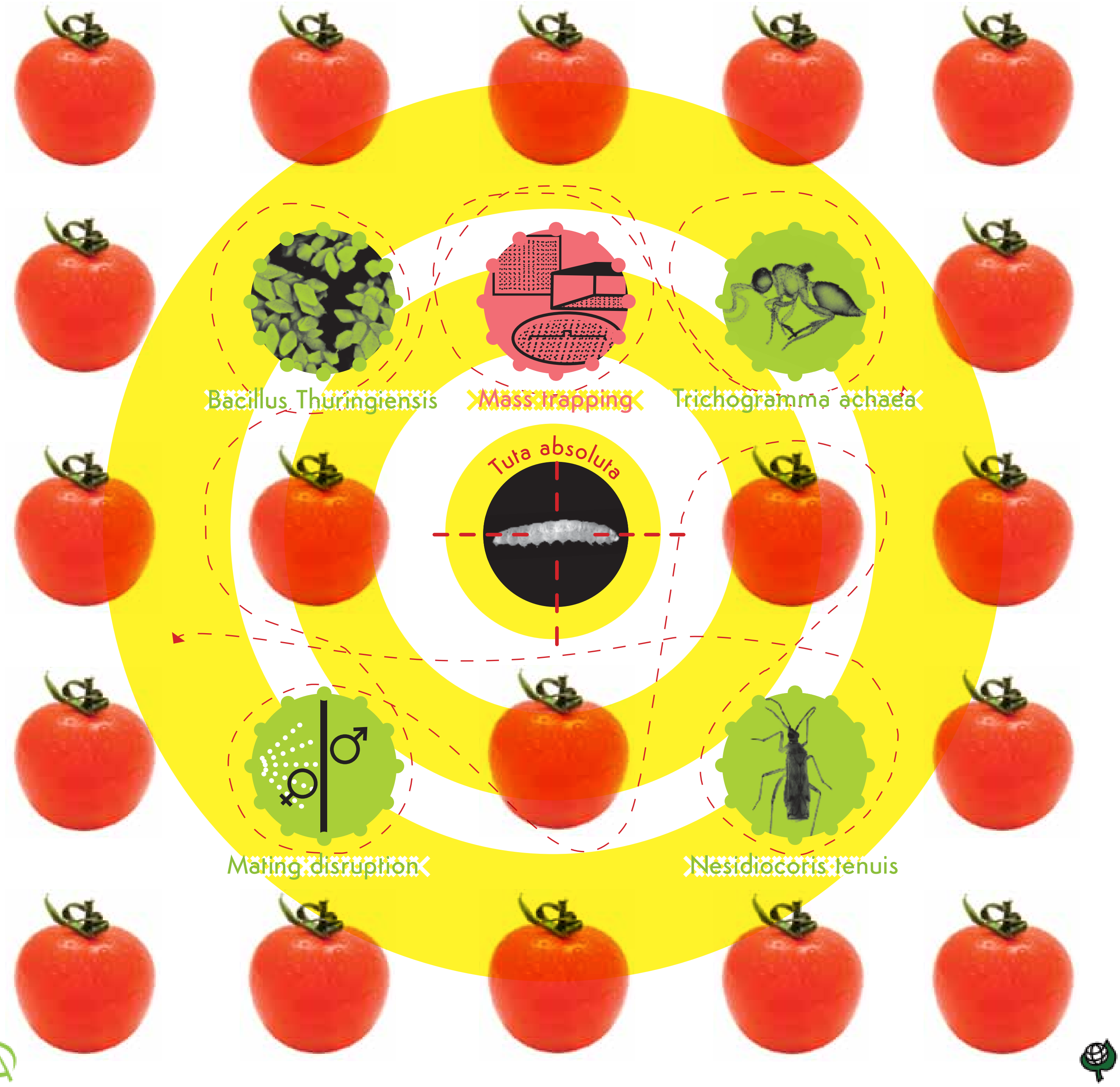
The commercial availability of insect sex pheromones for several agricultural pests allows the application of Mating Disruption in IPM programs. Male confusion is the result of ambient pheromone concentrations sufficient to hide the trails of calling females (relatively large doses, yet still in range of nanograms as they relate to the insect size, released from diffuse sources such as point source dispensers). The effect, is the adaptation of antennal receptor sites and/or habituation of the insect's central nervous system. Specific receptor sites on the antennae respond only to the pheromone molecule. When a receptor site is continually activated by diffused ambient concentrations of pheromones, the resulting nervous signal diminishes. The receptor site becomes unresponsive and the insect becomes blind in his navigating capacity. When the insect's central nervous system is inundated with signals from the receptor sites it becomes habituated: no longer able to provide the directed behavior. The net result of confusion is that the male is unable to orient to any pheromone source and follow the upwind trail to a mate.

Present commercial formulations of pheromones mimic the natural chemical blends of females. Most insect sex pheromones are multicomponent with precise ratios of each components which may be expensive to manufacture and/or prepare the relevant regulatory studies, often exacerbated by inappropriate regulations in place. Thus, insect sex pheromones and products containing pheromones, are commercially available primarily for insects of economic importance.

Mating Disruption for Lobesia botrana started in mid-eighties in Europe and took a long time to develop however now is applied on more than 200,000 ha of vineyards worldwide.

DECISION SUPPORT SYSTEMS

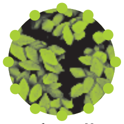
Forecasting models, based on the study of insect biology and the relevant correlation with environmental conditions, have reached a very high degree of accuracy and they are one of the most important decision tools to optimize the application of plant protection products to control pests in a sustainable way. For insects such as Lobesia botrana the combination of forecasting models with the use of sex pheromones baited traps can further insecticide application, particularly for the biological types which typically have low persistence and require better accuracy.



Agronomic practices
Monitoring
Physical control
Biological control

A leaf-mining small caterpillar that destroys the leaves of the tomato plant resulting in loss of leaves and tomato fruits and ultimately the death of the plant. This small moth, originated from South-America, has invaded Europe, North Africa and other parts of the world in recent years, and is causing huge damage in tomato crops in the field as well in the greenhouse.

BACILLUS THURIGIENSIS



This bacterium is a naturally occurring disease-causing bacteria for a small number of pest caterpillars. It can be produced artificially and formulated into a bio-insecticide. Sprayed on leaves caterpillars will digest it and become diseased, they stop eating, causing leaf damage, and ultimately die. This bacterium is safe to other animals and humans.

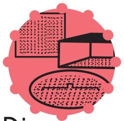
TRICHOGRAMMA ARCHAEA

This very tiny parasitic wasp is parasitizing the eggs of a small number of moths. In this case, eggs of the pest moth Tuta absoluta are deposited on tomato leaves, and before a small caterpillar emerges and starts eating leaves, the small wasp is able to find that egg and deposits its own egg in the moth egg. A small parasite will develop in the moth egg and a new wasp will emerge instead of a caterpillar.

NESIDIOCORUS TENUIS

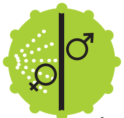
This predatory bug is indigenous in the Mediterranean area and naturally occurs on tomatoes. It preys on various small insects as well as on the plant itself without casing damage to the plant. It also preys on eggs of Tuta absoluta and young caterpillars that are inside the leaves. It is the base of biological control of this pest and may occur spontaneously in tomato crops or can be introduced. This biocontrol agent is also an important predator of other serious pests in tomato such as whitefly and spider mite.

MASS TRAPPING

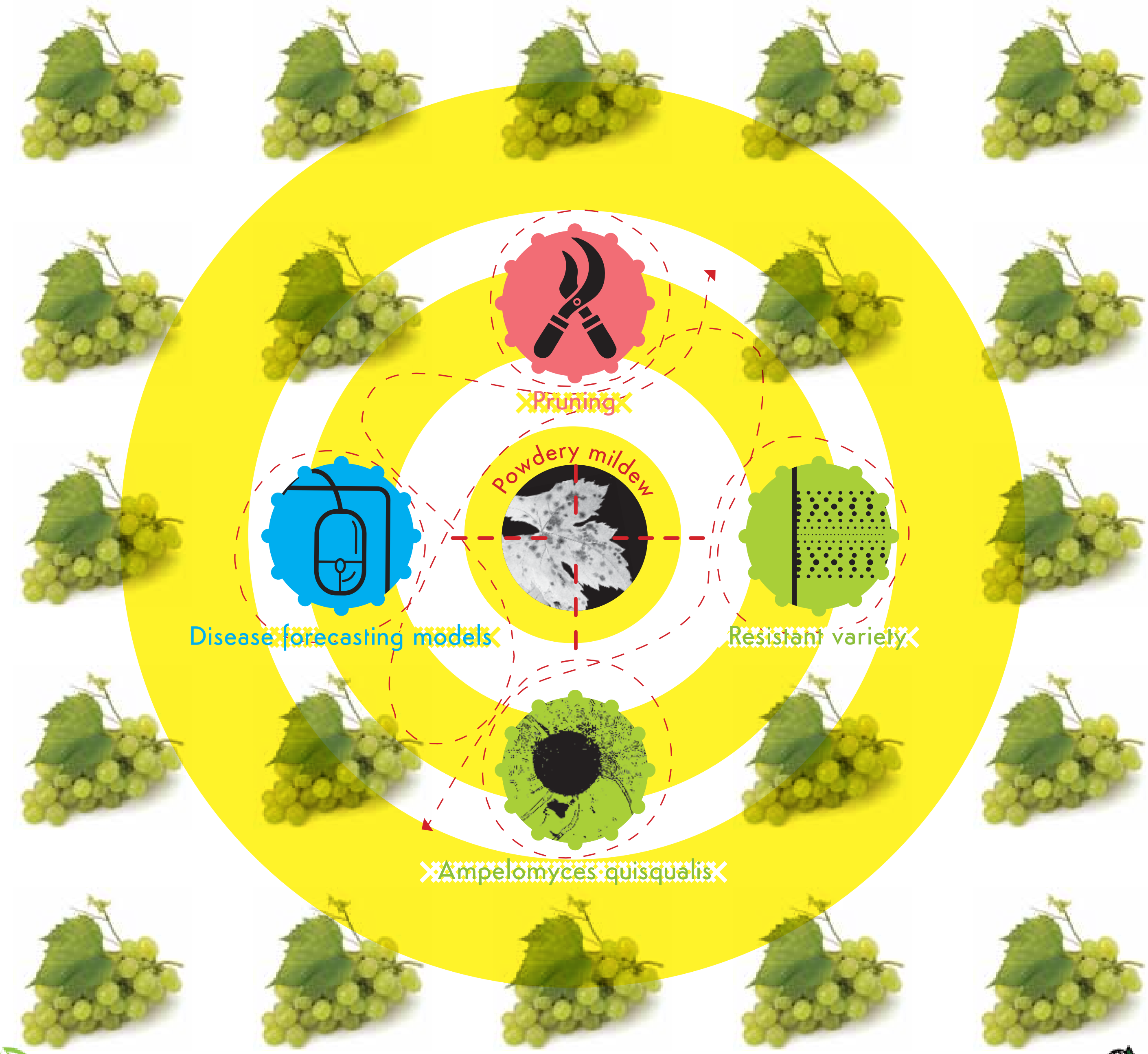


This method uses pheromones to lure the moths. Male moths are attracted to the sex pheromone and start looking for females. Dispensers releasing this pheromone are used with water traps where males landing on the water drown. Pheromone dispensers are also used on yellow or black sticky traps and male moths landing hereon are caught and die quickly. This physical technique of catching moths is used preventively to delay infestations or is used during peak infestation to reduce the moth population together with the other biocontrol methods.

MATING DISRUPTION



Mating disruption is also based on the use of sex pheromones. With this technique a high number of dispensers are suspended in the crop and release pheromones in the air. Usually male moths use a trail of this pheromone to find a female flying upwind following the attractive substance. With this technique the amount of released pheromone from many dispensers confuses the male moths in such away that they cannot find the females anymore. Therefore it is also called confusion technique. Without mating, females cannot deposit fertile eggs, and reproduction is prevented.



Agronomic practices
Monitoring
Physical control
Biological control

PRUNING

Removing leaves around the clusters is, in general, very beneficial. Exposing the clusters to sunlight early in the growing season by removing leaves causes the cuticle of the fruit to thicken, which helps to resist mildew infections. Exposed fruit also has a less humid microclimate, and sunlight is likely to hit the fruit for part of the day, reducing the possibility of mildew growth to contact the diseased tissue thus improving control. Experience has shown that specific and early leaf removal greatly influence the powdery mildew control. The amount of leaves to remove depends on local climate, trellis system and variety.

RESISTANT VARIETIES

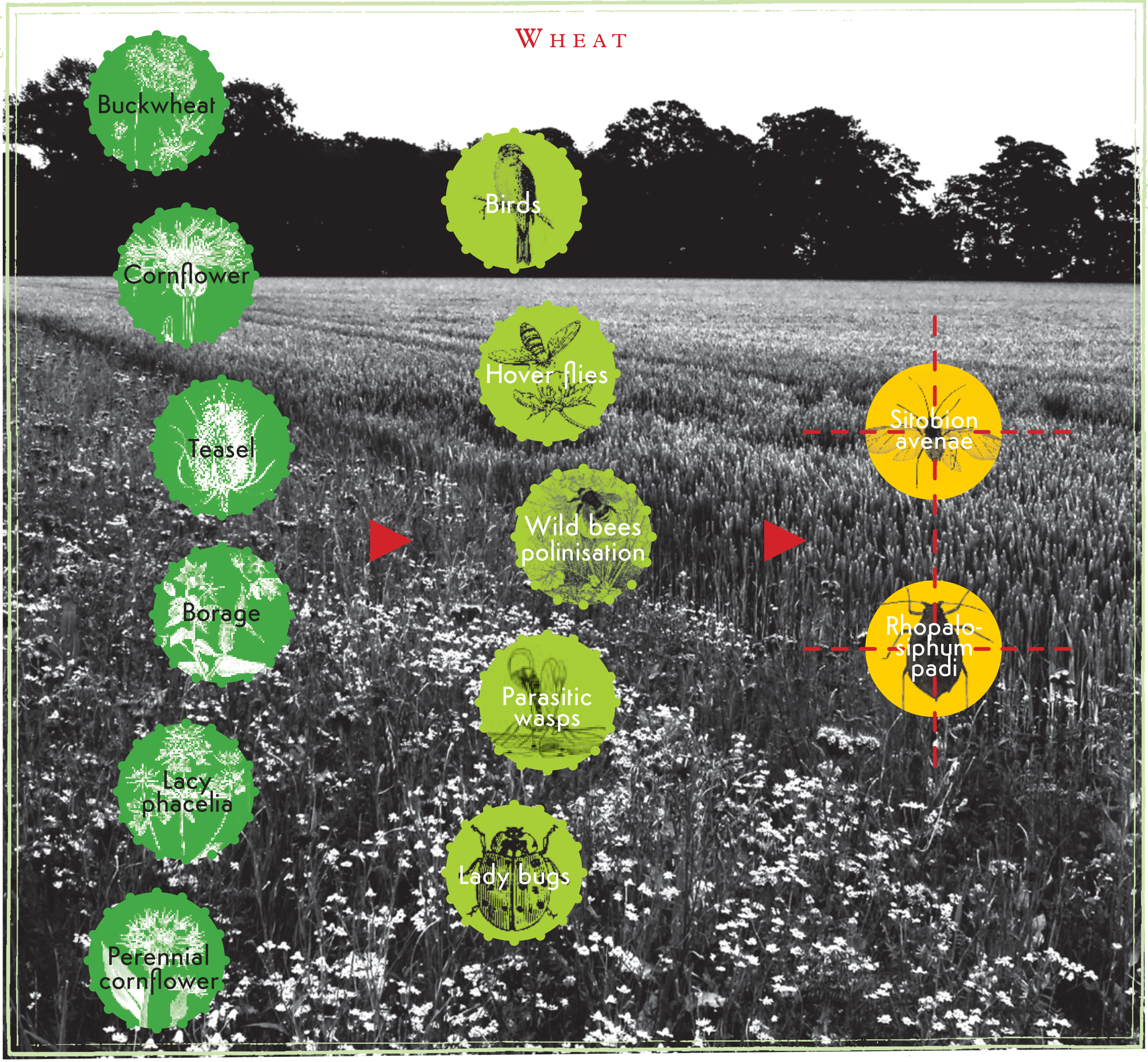
Breeding for grape varieties with higher tolerance or resistance to fungal disease attacks has long history in Europe, though not a wide acceptance yet. However in recent years more work has been done by some Institutes to develop more acceptable disease resistant varieties for the wine market and local regulations in each country of production is in a process to be adjusted for the legal acceptance of these varieties. Some successful implementation of resistant varieties both in table and wine grapes has already been demonstrated.

AMPELOMYCES QUISQUALIS

It is a Deuteromycete fungus that has been first described more than 140 years ago. It is a hyperparasitic fungus (mycoparasite) parasitising more than 500 species of fungi belonging to the Erysiphales (Powdery mildews) which attack more than 1500 species of plants. The parasite prevents the sporulation of powdery mildew mycelium and kills the host cells by causing a gradual degeneration of the cells without producing any toxin by necrothropic interaction. The best use of this biological in grape is in pre and post-harvest to parasitise the overwintering chasmothecia. In an IPM strategy this mycoparasite supports the reduction of Powdery mildew inoculum and consequently the primary infections.

DISEASE FORECASTING MODELS

Forecasting models, based on the study of disease biology and the relevant correlation with environmental conditions, have reached a very high degree of accuracy and they are one of the most important decision tools for the best application of plant protection products to control diseases in a sustainable way. For fungal disease such Powdery mildew the combination of forecasting models with local information correlated to the specific vineyards environmental conditions to further increase the accuracy of fungicides application can greatly contribute to disease control in an IPM system.



Agronomic practices
Monitoring
Physical control
Biological control

Insect predators and parasitoids are important in controlling agricultural pests. However, these beneficial insects often need additional resources to survive in the agricultural landscape. In intensive farm management the numbers of these beneficial arthropod species is often seriously constrained by a lack of floral resources, additional prey, or suitable overwintering sites. While beneficial insects can be effectively supported by pesticide-free targeted field margins, they benefit differently from the three key resources; aphid prey, floral resources, and grassy overwintering sites.

Recent studies on commercial wheat farms show that floral resources have the greatest individual effect in increasing natural enemy abundance, both prior to and during periods of pest aphid infestation. Some predators benefited from higher abundance of non-pest aphids, particularly in combination with the availability of floral resources. Grassy overwintering habitat was shown to provide little added benefit.

In Europe, most non-crop habitats in agro-ecosystems are grass dominated elements. Few Stewardship schemes are designed to provide suitable floral resources targeting natural enemies of crop pests, or to provide suitable additional prey. Given the importance of floral resources to the majority of natural enemies, providing targeted nectar and pollen sources represents the greatest opportunity for enhancing natural pest control services.

For further details see Ramsden et al. (2014)
Agriculture, Ecosystems and Environm. 199:94—104


Brassica
Buckwheat
Cornflower
Teasel
Borage
Lacy phacelia
Perennial cornflower
Birds
Hover flies
Wild bees polinisation
Parasitic wasps
Lady bugs
Delia radicum
Pieris spp

Pesticide free field margins as currently used in Agri-Environment Schemes often provide limited benefits to farmers. However, farmers have an alternative in using targeted flower mixes in their field margins that help deliver pollination and pest control services. Based on extensive research, these flower mixes have been composed of flower species that cater for the specific nutritional needs of pollinators and pest natural enemies. In commercial field trials in the Netherlands and the UK these targeted field margin mixes were shown to provide multiple benefits for growers:

Numbers of natural enemies in the flower margins were 2 to 6 fold higher, relative to control margins. The higher numbers of natural enemies clearly spilled-over into the crop, with elevated levels recorded up to 50m from the flower margin. Crop pests suffered more attacks from the larger contingent of insect predators and were effectively suppressed on the field side with the flower strip. 10-30% higher yields were achieved near flowering margins in two out of the three years and for three out of the four crops tested.

This shows that crop production and meeting key conservation objectives and policy requirements can go hand-in-hand. Adopting multi-functional seed mixes should ensure that farmers no longer need to forfeit combined pollination and pest control benefits.

For further details see www.ecostac.co.uk

MS can encourage reductions of pesticide use e.g. by supporting voluntary integrated farming methods (incl. voluntary elements of Integrated Crop Management) through agri-environment-climate schemes.

Some MS are already doing so, it remains to be seen how the introduction of the general principles of IPM will influence baselines of such schemes.

CAN CAN

Rural Development

MS must implement ecological focus areas and the crop diversification scheme and promote good farming practices for pesticides reduction.

It remains to be seen how MS will implement the greening and if they will promote the non use of pesticides in the EFAs.

CAN MUST

Greening of Direct Payments

MS can encourage reductions of pesticide usage, e.g. under the so-called Integrated Production as part of the environmental actions of the operational programmes.

Some MS are already doing so, it remains to be seen how the introduction of the general principles of IPM will influence baselines of such schemes.

CAN CAN

Fruit & Vegetable Regulation

MUST CAN

Farm Advisory Systems

MS must offer farmers advice on rules under Cross Compliance but also on the SUDP and the WFD in particular aiming at reducing pesticide usage and informing about IPM.

It remains to be seen, what kind of advice, including on IPM, will be offered.

Insurance linked to yield

Dynamic approaches, increasing the IPM baseline

Mandatory crop rotation in the CAP

MUST MUST

Cross compliance

MS must link the Regulation on Pesticides to CAP payments through Cross Compliance.

- The GAEC provide also a tool for a better use of pesticides (buffer strips, etc.).

In the future certain aspects of the SUDP and

- WFD will become part of Cross Compliance after all MS have defined the obligations directly applicable to farmers.

It remains to be seen when and what measures will be introduced. Will they include IPM?

EFAs : Ecological Focus Areas
GAEC: Good Environmental and Agricultural Practice
ICM: Integrated Crop Management
IP: Integrated Production
IPM: Integrated Pest Management
SUDP: Directive on Sustainable Use of Pesticides
WFD: Water Framework Directive

Member States: MS
Farmers
Pesticide Action Network

The EU has not reserved a specific budget to help Member States implement the Directive 2009/128/EC. Instead, it has been decided that this Directive is best implemented by integration into other policies, including the Common Agricultural Policy (CAP).

As can be seen in the poster on the opposite page, there are several CAP tools which can help to ensure pesticide dependency reductions and as a result enable a serious implementation of the Directive 2009/128/EC: the leaves show CAP tools already available to allow pesticides dependency reductions while the trunk proposes CAP tools worth considering for the future.

However, during the CAP reform from 2013 two new elements were added:

1 Directive 2009/128/EC to become part of so-called cross compliance (direct payment) requirement one day:

The Council and the European Parliament invite the Commission to monitor the transposition and the implementation by the Member States of Directive 2000/60/EC of 23 October 2000 establishing a framework for Community action in the field of water policy and Directive 2009/128/EC of the European Parliament and of the Council of 21 October 2009 establishing a framework for Community action to achieve the sustainable use of pesticides and, where appropriate, to come forward, once these Directives have been implemented in all Member States and the obligations directly applicable to farmers have been identified, with a legislative proposal amending this regulation with a view to including the relevant parts of these Directives in the system of cross-compliance.

Addendum 2
to the CAP reform agreement
of 25 June 2013

2 Member States are now obliged to inform farmers about Integrated Pest Management, giving all farmers across EU a right to be informed about IPM as from 2015:

Member States as something new need to advise on 'implementing Article 55 of Regulation (EC) No 1107/2009 of the European Parliament and of the Council, in particular requirements concerning the compliance with the general principles of integrated pest management as referred to in Article 14 of Directive 2009/128/EC of the European Parliament and the Council.

Addendum 2
to the CAP reform agreement
of 25 June 2013

WWW.IOBC-WPRS.ORG

International Organisation for Biological Control

A Europe-based International Organisation of scientists and other professionals investigating the use of sustainable, environmentally safe, economically feasible, socially acceptable control methods of pests and diseases of agricultural crops. Therefore IOBC-WPRS encourages collaboration in the development and promotion of Biological and Integrated Pest Management. IOBC-WPRS fosters research and practical application, training and information exchange, especially of all methods including biological control as part of integrated pest management. IOBC-WPRS produces guidelines for integrated production of agricultural crops, collaborates with different stakeholders to develop sustainable agricultural production systems and standardises methods to test effects of pesticides on beneficial species, with the aim to foster biodiversity and ecological services as a natural resource.

WWW.IBMA-GLOBAL.ORG

International Biocontrol Manufacturers' Association

The association of bio-control industries producing solutions: microorganisms, macroorganisms, semiochemicals and natural products for plant protection. Based on long years of intensive research and development, the "bio-control industry" is now growing fast and can offer safe and cost- effective solutions to the entire food chain. IBMA was created in 1995 to represent the views of the developing biological control manufacturers, which are mainly small and medium-sized enterprises with limited resources, research organisations, extension services, consultants, distributors, contributing to the development of biocontrol and participating in IBMA activities.

WWW.PAN-EUROPE.INFO

Pesticide Action Network Europe

A Brussels based Non Governmental Organisation (NGO) working to minimise negative effects and replace the use of hazardous chemicals with ecologically sound alternatives. Our network brings together 35 national NGOs working on public health, environment and women's groups from across 25 European countries. We work to eliminate dependency on chemical pesticides and to support safe sustainable pest control methods.