

AGRIPROTECT

1. Organisations involved

- Association de coordination technique agricole (ACTA), (Association of Agricultural Technical Coordination).
- Arvalis-Institut du végétal, (Institute of agriculture).
- Association nationale des structures d'expérimentation et de démonstration en horticulture (ASTREDHOR), (National Association of structural experimentation and demonstration in horticulture).
- Centre technique interprofessionnel des oléagineux métropolitains (CETIOM), (Professional Technical Centre for Oilseed Crops).
- Institut technique de l'aviculture (ITAVI), (Technical Institute for Poultry).
- Institut technique de la betterave (ITB), (Technical Institute of Beet).
- Institut technique du lin (ITL), (Technical Institute of Flax).
- Institut français de la ligne et du vin (IFV), (French Institute of Wine).
- Institut de veille sanitaire (InVS), (Health Watch Institute).
- Université Bordeaux 1 - Dépt HSE – IUT, (Bordeaux University).
- Ministère de l'alimentation, de l'agriculture et de la pêche, (Ministry of Food, Fisheries and Agriculture).
- Caisse Centrale de la Mutualité Sociale Agricole (CCMSA), (Mutual Assistance Central Social Fund for Agriculture).
- Chambres d'agriculture 33 & 77, (Chamber of Agriculture).
- Groupe coopératif agricole et agroalimentaire (AGRIAL), (Food and Agricultural Cooperative Group).
- Champagne-Céréales.
- Mutualité sociale agricole 33, (French Agricultural Social Insurance Mutual Benefit Fund).
- Adivalor.
- Union des Industries de protection des plantes (UIPP), (Plant Protection Industry Union).
- Ecole supérieure d'agriculture d'Angers, (Graduate School of Agriculture of Angers).

2. Description of the case

2.1. Introduction

The Agriprotect project consists of developing a tool for analysing and managing risk regarding workers exposure to pesticides. This tool is intended for training instructors, who can then use it to deliver continuous professional education programmes to farmers.

The first step of the project (called Agriprotect 1) involved reviewing all the available information regarding protective measures to minimise exposure to pesticides. The second stage of the project (called Agriprotect 2) consisted of designing a training tool, with the involvement of farmers and their families.

Through this project, the stakeholders involved with plant protection products have all been brought together, including public bodies, manufacturers, distributors, research institutes and end users. Conceiving this project made it possible to exchange views and discuss constraints, allowing issues to be addressed by putting into effect shared solutions.

2.2. Aims

Several different protagonists in the domain of preventing exposure to pesticides had already developed training programmes. An analysis of their content indicated that, with some exceptions, they are primarily based on slide presentations intended for wine growers and concentrate on personal protective equipment. These programmes are often perceived as limited and not very practical.

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The new Agriprotect 2 programme advocates two primary objectives:

- make agricultural producers participants in their own protection programmes and sponsor a forum for sharing experience and solutions to issues;
- facilitate the analysis and management of risk in handling agro-pharmaceutical products.

To accomplish this, it was deemed necessary to develop a full-range of training courses and a follow-up tool for farmers, which should be tested in different situations.

2.3. What was done, and how?

After carrying out studies and research on contamination of persons applying plant protection products, and of their friends and family, to establish the types of exposure, means of contamination, and risks related to equipment in use, etc, the Agriprotect 2 programme developed a training and follow-up tool for farmers.

First Objective: Provide Training

The approach adopted puts the persons using pesticides at the centre of the training mechanism, getting them to analyse their individual work situations and thus identify which risks are incurred and the determining factors of such risks.

Opportunities for information exchange between participants in the training and those giving it were encouraged, promoting a flow of ideas for implementing farmer-originated solutions. The training is not restricted to demonstrating the presence of danger involved in handling products and recommending individual protective equipment. It offers guidance on practical management of the risk, both by adopting an overall approach, stressing the importance of organising workloads and workspaces, and through the actual handling of products on the farm. This delegates to farmers, the role of a protagonist in their own protective programme, as opposed to the role of someone receiving assistance. Working within a group, individual farmers can be the force behind developing proposals to minimise risks when using these products.

The training module is based on a model which is repeated for each of the product handling phases, from transportation to waste management. The risks are outlined, farmers' practises are discussed, perspectives on solutions to the issues are exchanged and risk analysis and management issues are recapitulated.

Prior to beginning the training programme, common misconceptions were discussed. These include:

- insecticides are more dangerous than fungicides and herbicides;
- the only high-risk phase is when products are prepared for application;
- contamination occurs essentially when product fumes are inhaled;
- trace residue of products on equipment, packaging or elsewhere will not result in contamination that could have an impact on health;
- tractor cabs and personal protective equipment provide full protection;
- once products are applied, the risk of contamination is very low;
- handling hazardous products is just part of a farmers job and there's nothing that can be done about it.

Throughout the training programme, mention is made not only of direct risks of contamination linked to product-handler contact from spattering, spills, spray, etc., but also of the numerous indirect risks of contamination through contact with containers or equipment, such as tractors and cab interiors, or on clothing and in fields.

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The end purpose of the programme is to illustrate that contact with products may occur often during a wide range of activities and that for all situations, farmers should develop practises that reduce contact and exposure to products.

The training experiment in the wine-growing domain included a workshop that illustrated the various facets of contamination by means of a coloured tracer.

All participants were offered the chance to formally undertake three actions to incorporate into their operations at the end of the training.

Second Objective: Observe and Monitor

The second part of the programme's concept involved meeting with participants in order to set up an experience exchange group. This required the development of observation and monitoring tools that could be used by trainers and a counsellor.

During the training, the importance of participant involvement and of allowing them to come up with their own diagnostics became apparent.

The observation and monitoring aspect can be used to take stock of the situation and to photograph or film situations encountered by participant groups. Subsequently, half-day meetings serve to draw up a report on the actions implemented by farmers, to maintain an exchange of views in the group, and to extend the training that was started previously.

So the primary advantage is to construct this new connection, no longer from a pre-established module, but rather from actual situations encountered by participants. Thus, achieving increased participation is more necessary during this training meeting.

2.4. What was achieved?

On site experimentation

Experiments using the Agriprotect 2 concept were carried out for three very different types of situation:

- In the Seine-et-Marne: with the help of the Chamber of Agriculture, two groups of a dozen farmers participated in the module in 2008 and were visited by trainers in 2008 and 2009. In most cases, the farms concerned boasted over 100 hectares and specialised in arable crops such as grains, corn, rapeseed, sugar beet, potatoes, flax, etc. The average age of the farmers was 44.

- In Normandy: through the *Agrial* Cooperative, some fifteen farmers participated in the module and were visited in 2009. These were smaller farms, often with relatively simple cattle breeding and crop production operations. The average age for this group was 38.

- In the Bordeaux wine producing region, with the assistance of the Chamber of Agriculture, IFV and the *Université Bordeaux 1*, family operations of several acres and big chateau vineyards exceeding 100 hectares participated. The target group was rather wide and had different job descriptions, such as Farm Operations Manager, Quality/Environment Manager, Agricultural Machinery Operator, Mechanic, etc. The social environment was different, depending on whether the operation was a small, family owned farm or a large business with more employees. The ages of the participants were not recorded so the average age of the group was not determined.

The participatory approach was met with approval by a large majority of farmers and agricultural workers who attended the various workshops conducted in 2008 and 2009.

The entire concept appears to be practical and specific, especially the workshop used in the wine-growing sector. The main objectives of this workshop are that it must be easy to conduct and that it can be used to visualise contamination in a specific way. This consists of mimicking the different phases involved in dealing with plant protection products, including donning

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protective clothing, setting up for product application, cleaning up and removing protective gear.

Participants can visualise any traces of contamination that may have taken place during the phases of work by means of a blue dye that represents plant protection products. A discussion then ensues involving all participants. Special emphasis is placed on pinpointing the dye spots that represent traces of contamination with plant protection products. These visual elements make winegrowers aware of the risk of contamination through skin contact and, thus, the need to avoid any possible contact. The workshop can also be the opportunity to discuss recommended protective equipment if that topic was not covered during the classroom sessions. In addition, this part of the training makes it easier to visualise the paths contamination takes to penetrate the organism, be they through direct and indirect contact, and also the technical means in use for limiting contamination.

Training length and content are adaptable, although the one-half day period appears to be the most appropriate formula for beginner training programmes, while full-day programmes are more advantageous for in-depth training.

The various experiments have resulted in recommendations devised by farmers themselves. Some examples include:

- designating a disused refrigerated vehicle with a holding tank for safe transportation of plant protection products;
- fitting out a former tobacco drying plant for storing plant protection products;
- transporting products to preparation areas with a wheelbarrow;
- installing hand washing facilities in handling locations such as spray and preparation areas;
- providing plastic covers to protect driver seats;
- designating a building for storing and preparing products, and for parking sprayers;
- restricting access to sensitive areas on farms where children or tourists visit;
- posting work recommendations indicating entry times for employees returning from spraying operations.

Third Objective: Information

All data assembled during the programme's development shall be made available at the end of 2010 on the ACTA website (www.acta.asso.fr), under the Agriprotect 2 project heading. This will include the programme's final report, a bibliography for the subject matter, regular updates and all the site's tools such as training modules, follow-up methods, etc. It will also contain background information on the use of active substances by means of an index, which contains indices that have been prepared with the cooperation of the *Institut de Veille Sanitaire* (Health Watch Institute).

2.5. Success factors

The success of this initiative relies mainly on the close cooperation of all stakeholders concerned by this subject: prevention experts, workers exposed to pesticides due to their line of work, training institutes, health insurers, etc.

This project made possible the exchange of views between the various stakeholders, allowing issues to be addressed by putting into effect shared solutions.

Another success factor relies on the participatory approach that was chosen, which gained the approval of a large majority of farmers and agricultural workers who attended the various workshops. Farmers have a pro-active role in the training programme and this is of primary importance for developing their interest in the training – it is perceived as practical and of direct use in their daily work. Moreover training length and content are adaptable.

2.6. Further information

Philippe DELVAL

Ingénieur TECHNIQUE
Association de coordination technique agricole (ACTA)
1, rue Bourgelat – 69280 Marcy l'Etoile
Telephone: 04 78 87 56 23 – Fax: 04 78 87 56 20
Email: philippe.delval@acta.asso.fr

2.7. Transferability

As the training programme is modular, it can not only cover overall continuing education requirements but also provide training in specific modules. It can be adapted to different types of work which use pesticides, in agriculture or viticulture for example.

2.8. References, resources:

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