Bayer campaign in Brazil

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Better training leads to improved safety

Introduction
This case study describes the Agrovida project, a program initiated by Bayer, Germany's major Health Care and Chemicals Group, with the objective of improving the living and working conditions of rural workers and small farmers in Brazil and other South American countries. It takes the form of an integrated project approach based on several of the principles of the Global Compact. The prime concern is to promote safe and environmentally sound use of crop protection agents that is not harmful to human health. The project relates to the environmental principles of the Global Compact as well as those regarding human rights and labor relations. This latter concern is not restricted to the staff of Bayer but also targets users of the company's non-self-explanatory products; this aspect forms the central focus of the case study.
Bayer is one of the world's largest manufacturers of crop protection agents. One of the triggers for the activities described below was Bayer's more than one hundred years of tradition in the field of corporate social responsibility. This commitment to corporate social responsibility has been a fixed element of Bayer's philosophy since this time and it is a principle that is observed in all of the more than 150 countries where the company is represented. The same applies to our commitment within the context of the Responsible Care initiative of the international chemicals industry. This initiative is likewise observed at all of our sites around the world and was another reason for the creation of Agrovida. The project is an example of how Bayer brings life to the product stewardship aspect of this initiative and implements it in practical programs.

The training campaign on integrated crop management in southern Brazil is being carried out by Bayer together with a number of other organizations. This project was initiated, financed and led by Bayer but – and this is most important – it was being co-ordinated locally. On Bayer's initiative it has been possible to involve local authorities, farmers' associations and the tobacco-processing industry, an equipment manufacturer, and the farm-workers' trade union. The main concern was the appropriate and responsible handling of crop protection products to minimise the risks to humans and the environment. There is still an urgent need to make progress in this regard. The training was intended to reach about half of the roughly 25,000 families with small farms in eight local authority areas in the region. The members of the target group were surveyed before and after the programme to find out what had been achieved. The people involved included the farmers, their spouses, and agricultural advisors from the partner organisations.

70 external trainers who had been thoroughly prepared for the work provided courses for the farmers, their spouses and older children, as well as about 1300 teachers at the 450 primary schools in the region. The information conveyed covered the basic concepts of integrated crop management, which is designed to optimize all of the measures needed towards sustainable farming. The crop protection part of this strategy concentrated on the safety of the user, proper storage of crop protection products, maintenance of equipment, and careful disposal of empty containers.

As well as providing all the specialist training, it was of course necessary to give all the participants the feeling that they are all members of a group, which fits in well with the concept of "integration": a communicative network is able to reach objectives more quickly. This was partly encouraged by promoting active co-operation in practical situations, e.g. in putting on protective clothing or rinsing empty containers correctly. Motivating the farmers was another objective. Good training material was used to encourage them to make appropriate changes to their traditional ways of doing things. Saving money by using the correct amount of a crop protection product has been found to be quite a considerable stimulus.

School competitions and children's theatre

As the next step, the trained teachers passed on their knowledge to about 25,000 children aged between six and twelve. The safe handling of crop protection products and, quite generally, treating the environment with respect were the main aspects. As it happens, this fulfils a requirement set by Article 19 of the action program of Agenda 21, agreed during the 1992 UN conference on the environment and development in Rio de Janeiro. This states that: "All countries should include the most important rules on the handling of chemicals in the curricula of primary schools".

All the children were invited to take part in a school competition which enabled them to show what they had learned in the form of a drawing, a story, or a model. Of the 1000 pieces of work received, 90 passed the preliminary selection procedure and prizes were given for the best 26. The first prize was won by a 12-year-old schoolgirl. She had made a doll with protective clothing and a cupboard for the safe storage of crop protection products. This motivated her father and grandfather to wear protective clothing and to build a cupboard for their chemicals.

Following this success, Bayer arranged for the production of a play. It told the story of a boy from the town who visited his cousin in the country during the summer holidays and soon found out how little he knew about how farming is done there. The piece playfully brings across the main points of the campaign. In order to follow it up in lessons, teachers were given questionnaires for the children. What is more, success was so spectacular that the piece has also been presented in other states in Brazil.

Campaign very well received

The initial survey and the final survey were carried out by a professional organization. 400 individuals – 200 farmers and their spouses – were chosen at random from among 25,000 families with small-scale farms in the region and were interviewed separately about various points. About 30 technicians were also questioned. The message of the campaign had reached a total of 45% of those questioned.

This region is dominated by farms growing tobacco, followed by maize. According to the farmers, tobacco is preferred because of its high profitability. For this reason, plans to change farmer's attitude towards tobacco had to be given up. The products used in tobacco are mainly insecticides, whereas in maize more herbicides are used.

Interest in the training was high. The participants supported the program without exception. The fact that the farmers only rarely saw the campaign as a Bayer initiative was no bad sign, and was due to the deliberate avoidance of product promotion. Of the subjects covered, protection of health and the environment was particularly valued by women. But subjects such as direct planting of tobacco seedlings without first ploughing the field (to avoid soil erosion) were also considered interesting.

Because integrated pest management, with all its possible biological, biotechnical, and chemical compounds, formed an important part of the training program, specific questions were asked about it. The overall proportion of those questioned who recognized the term "beneficial" increased from 18 to 36%. Among those who received the training, this figure reached 48%. But unfortunately only a few farmers could name beneficials. This is particularly true in the case of maize. Although field exercises repeatedly looked for and counted beneficial organisms, this part still needs to be strengthened as the project continues. However, the interest in beneficials in tobacco and maize crops was gratifyingly high overall.

Value of protective clothing recognised

Awareness of the risks in handling crop protection products has increased. The following were recognized as being unacceptable: storing crop protection agents together with foodstuffs; eating, drinking, or smoking during use; using leaking knapsack sprayers; not wearing protective clothing; and not washing after use. The trainers attached great importance to explaining that there is a greater risk of contact with the crop protection product while mixing than during spraying itself. The proportion of those who understood this thoroughly increased by 10%.

The attitude to protective clothing also improved. In the beginning, most of the farmers and their spouses did not know which items were particularly important at a particular time and why. Different items of equipment were named in a random order. For example, a face mask (85%), boots (84%), and gloves (83%) were considered equally significant. After training, this changed significantly: by far the majority of those asked considered gloves to be the most important item of protective clothing – and rightly so, because it is essential to wear them while preparing the spray mixture. The importance of using an apron when doing this or when spraying taller crops was also recognised.

The ownership and use of protective clothing is becoming increasingly widespread. It was particularly easy to convince the trained farmers and their spouses of the benefits. A certain amount of encouragement also came during the campaign though the availability of complete sets of equipment, including a new – and fashionable – type of face protector. Previously, only goggles had been available.

Handling of agents improved

There are still a couple of other campaign successes which deserve mention. In the beginning, 64% of farmers reported saving residual spray mixtures for the next treatment, and only 30% reported never allowing any residues to occur, but the result had improved during the course of the project: only 39% would tolerate residues, and 58% wanted to avoid them. Many farmers had learned that keeping spray mixtures for a prolonged period is simply uneconomic, as the efficacy is eventually lost. Ultimately, this change can be traced to an often-repeated motto of the campaign: "Prevention and avoidance are better than a cure".

Rinsing empty crop protection product containers three times – a precondition if they are to be taken to collection sites for disposal – also formed part of the training program. In this case, the proportion of those who rinsed containers properly increased from 43 to 67%. Among the trained farmers, the proportion actually rose to 74%. Many more would certainly do so if suitable collection sites were set up everywhere. This problem is now being tackled energetically together with the Brazilian association of crop protection agent manufacturers, so that it will soon be possible to ensure a comprehensive disposal system.

Pictograms in instructions for use have an extraordinarily important rôle in ensuring the correct handling of the agents, particularly in developing countries, where there is a high rate of illiteracy. They were shown again and again on posters and in a card game, which the farmers were given during the training. Understanding of the various pictograms used increased on average from 55 to 73%. Happily, there was also a clear improvement in associating colours with different poison categories for crop protection products (recommendations of the WHO and FAO: class I, red, extremely toxic; class II, yellow, very toxic; class III, blue, less toxic; class IV, green, low toxicity). The red colour band on the container was always recognised as "extremely toxic". More of the trained farmers knew about this subject than of the untrained farmers.

A model for other regions

Of course, the training of the rural population around Santa Cruz do Sul, which has reached its conclusion for the time being with the final survey, can only be seen as an intermediate stage in our efforts. The remarkable improvement in the handling of crop protection products justifies the

hope that awareness of responsible use can also be improved elsewhere. The success of this private initiative is mainly due to the continuous commitment of all those involved. Groups, which still exclude themselves, will certainly come to recognize how important their collaboration can be. The training campaign was perhaps only a small step in terms of the area it covered, but it was certainly a forward-looking step if one considers what an excellent model it has become for other regions of the world.

Bayer's' technical support team is active in many countries. It is performing a variety of knowledge and technology transfer activities in the field, which benefit food security and economic development.

The case study described was designed as a pilot project and has subsequently led to similar approaches in Mexico, Guatemala, Colombia, Argentina and Chile – where it is also known as AGROVIDA.

Bayer, as a major research-based crop protection company, contributes to the objectives of Agenda 21 in its field of expertise. The company actively promotes the aims and principles of ICM because it is the pathway to sustainable agriculture and also contributes to implement IPM, including the judicious use of crop protection products.

The company is committed to continue its efforts in this area. We are also committed to maintaining open lines of communication.