

Involving farmers in the research planning process: smallholder attitudes to herbicide use

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· Introduction

Weed science research programmes at the Kenya Agricultural Research Institute (KARI) have traditionally focused on station based trials. Contact between scientists and farmers has been limited, and where it has taken place, it has generally been with larger, more commercially-minded farmers.

There has been considerable debate over the role of herbicides within smallholder farming systems in Kenya and whether or not it is an appropriate use of limited resources for KARI scientists conduct further research in this area. This report documents the first experience of a group of KARI scientists in using group interview techniques to incorporate the views of farmers into the research planning process.

To gain experience of conducting the survey, a trip was made to Embu research station to meet with Dryland Adaptive Research and Extension Project (DAREP) research officers who have experience of conducting weed surveys. A field day was later organised by DAREP in which we compared demonstrations of zero tillage (herbicide use) and hand weeding.

These showed that in the Embu area there are considerable advantages to using herbicides compared to handweeding. First, soil erosion is reduced with herbicide use. Second, the costs involved in herbicide application are less than those of handweeding. Third, the labour saved during herbicide application can be used to perform other farming activities.

Using this background information on herbicide use, an initial survey was undertaken in Kinangop south division, Nyandarua district,

and Kibirigwi division, Kirinyaga district. These two areas were chosen because the small scale farmers grow many vegetables for commercial purposes and can afford to buy herbicides.

The two study areas have different marketing systems, watering systems and infrastructures. The vegetable crops grown in these two areas are also different. The farmers in Kibirigwi are organised under the Kibirigwi Farmers' Co-operative (KIFCO) whereas the Kinangop south farmers are not organised under any scheme. Kibirigwi is irrigated while Kinangop is rainfed. The roads in Kibirigwi are also better than the ones in Kinangop. The idea was to highlight the problems encountered by the farmers in the two different areas. Specifically, the project objective was to obtain more information on farmers' attitudes to herbicide use and explore the reasons why they do or do not use herbicides.

· Methodology

The study started with a preliminary survey in Kinangop and later Kibirigwi where individual farmers, both male and female, were chosen at random and interviewed. Twenty farmers were interviewed in Kibirigwi and 28 in Kinangop. After the preliminary survey, group discussions were held on farmers' fields. The Kinangop group was composed of both freehold and contract farmers (five men and two women). Both discussions, which took about two hours, were carried out in the presence of an extension officer and the participating farmers were chosen by the same extension officer (see below). The study was undertaken between June and November 1994.

Results

The survey in Kibirigwi Division and Kinangop Division revealed that the main vegetables grown were Irish potatoes, sweet potato, French beans, tomato, cabbage, capsicum, egg plants, carrots, leeks and navy beans (a new crop in the area).

Major findings from both group and individual interviews were that: first, pesticides are not widely used by this group of farmers and second, use of herbicides is very limited due to lack of both information and finance. In Kibirigwi no farmer used herbicides in vegetable production whereas in Kinangop herbicides were only used for carrots.

Two major issues which identified through this research :

i) Market related issues. Brokers are the main outlet for the farmers to sell their produce. The farmer has no control on the price of his produce. The broker fixes the price yet farmers still prefer to sell their produce to the broker since he pays promptly. Unfortunately, farmers do not know the price they will receive for their produce before harvest. Small farmers are even more vulnerable as they cannot delay selling their produce. This situation forces them to take the first offer from the broker. Farmers tend not to sell their produce to co-operatives because it can take up to six months for them to make payment.

Due to the uncertainty in the price for produce, these farmers are not prepared to invest in inputs. Poor roads, especially in Kinangop, make access to the farms difficult and in wet weather brokers stay away from these areas leading to loss of income due to produce wastage. There are considerable variations in prices between peak supply and scarcity periods. For example, during peak supply one head of cabbage costs less than one shilling whereas in scarcity periods the same head costs 5-10 shillings. Generally prices on farm can be as low as 5 per cent of market price.

ii) Lack of information on pesticides and herbicides in particular was a major problem for all the farmers interviewed. Information was not available on treatments, application rates, safe use and handling, storage and disposal.

Farmers did not know of the different kinds of herbicides available for use in vegetable production. They also did not know how to spray or dilute herbicides. Some farmers kept pesticides in the same store as food stuffs and others smoke as they sprayed. Most farmers did not have appropriate protective gear and, even if it were available, it may not be affordable to most farmers.

Other observations were:

- Extension staff are rarely seen and do not give advice.
- Chemical companies sometimes give advice and are generally the 'best' source of information, although with a bias to their products.
- Retailers often sell without giving advice.
- Products are often adulterated. Farmers gave numerous reports of products not being effective.
- Products sometimes are used without knowing what the application rate should be.
- Products are often repackaged and may have no instructions (e.g. in a beer bottle).
- Weeding is expensive but can usually be limited to two times in vegetable crops. Family labour is the main source although most farmers have to hire labour at peak times.

In Kinangop 75 per cent of the farmers interviewed admitted that weeds were their biggest problem in the production process. Some weeds are particularly difficult to dig up and farmers said they would like to know if herbicides are available to control these: *Amaranthus* spp., *Geranium* spp., *Spergular arvensis* and *Polynum aviculare*.

Observations on methodology

We suggest that farmers should be selected at random or an incorrect picture of the real issues may be obtained. In the Kibirigwi group interview, the Extension Officer did not choose the farmers at random. The KIFCO Chairman wanted to be the spokesman of the group, yet he was giving misleading information, and presented the official view of the co-operative rather than the actual situation. He also insisted on speaking in English which excluded the

other farmers from the discussion. This was tactfully avoided by the interviewer.

The presence of the extension officer in front of the group also influenced the willingness of farmers to freely express their opinions. However the female farmer felt intimidated as she was the only woman. This suggests that misleading information may be obtained from participants who do not feel free to express their honest opinions. In the Kinangop group discussion, the extension officer took a back seat and did not talk throughout the discussion. This left the farmers free to discuss issues freely.

To avoid bias it is better to inform the extension officer of the purpose of the visit on the day of the interview. If informed earlier, as with Kibirigwi, the farmers may be selected and encouraged to present an official view.

The setting for group discussions is an important factor to consider. In both cases the discussions were held on or near the farmers' fields so that the surroundings were familiar and researchers could observe the situation at first hand. The group in Kinangop listed various other problems apart from weeds including the poor marketing facilities and roads.

It is important to establish a good relationship with the group before and during the discussion. The interviewers sat with the farmers and the local language was used to make the farmers more relaxed.

In the discussions (both individual and group) women tended to give brief answers to questions asked. By contrast, the men would answer the questions and talk more in the discussions. This hinders the gathering of farming information because women spend more time on the farm than men and are more aware of the problems affecting farming. Women feel that their husbands should be the spokesperson. For example, a female farmer was being interviewed in Kinangop but on seeing her husband, she just stopped the discussions and handed the interviewers over to her husband.

An important feature of future research will be to encourage greater participation of women in group discussions. Initial efforts will focus on

holding separate group discussions for men and women farmers. Care will also be taken to ensure that facilitators have the confidence of group members and are not themselves a reason for the low level of participation by women farmers. Hopefully, it will then be possible to work towards a situation where both men and women can participate in discussions on an equal basis.

• **Recommendations**

The study indicated that before smallholder farmers can be expected to adopt herbicides on a wider scale several issues need to be addressed. These include:

i) Information

- strengthening of links with extension.
- preparation of appropriate technical bulletins on pesticide use. These bulletins will include recommended treatments for various crops, application rates and appropriate measures for safe use.
- on-farm demonstrations.

ii) Adulteration

- authorities will be encouraged to take action against offenders.
- more control is need on seed quality.

iii) Marketing

- try to encourage farmers to form marketing groups through negotiating with brokers and marketing directly.

• **Conclusion**

The interviews showed the farmers' lack of knowledge in herbicide use. It also indicated that one of the limiting factors is the uncertainty created by the present marketing structure. Until some degree of price security can be obtained, it is unlikely that farmers will be in a position to take advantage of the possible benefits of herbicide use.

However, there is a clear need for greater effort in making information on herbicide use more widely available and accessible to smallholder farmers. There is also a need to test research

recommendations developed on station at farm level, involving the farmers themselves as much as possible in this process. Once appropriate regimes are available these could then be promote through demonstration trials.

Working closely with farmers may uncover specific weed problems which present new challenges for research. These participatory surveys have started us along the path of learning from farmers.

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