PARTICIPATIVE GROUPS - AN EXTENSION TOOL FOR SUCCESSFUL TRANSFER OF WEED MANAGEMENT TECHNOLOGY

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Summary. The complexity of reduced tillage weed management technology and the need to adapt this technology to local situations have contributed to slow adoption of the concept. Homogeneous neighbourhood groups with associated demonstrations provide an environment for both farmers and associated workers to learn about the interrelated components of reduced tillage systems and to adapt that technology to specific situations.

INTRODUCTION

Concern about soil erosion of Australian farm land has prompted scientists, agribusiness people and farmers to critically examine conventional tillage methods to control weeds. As a result, there has been a trend towards mechanical weed control methods that minimize stubble incorporation, or preferably, selective replacement of tillage with herbicides. Superficially, this might appear to be a simple exercise, but adoption of herbicide substitution for tillage has been slow.

Chamala and Keith (1), in their review paper, provided a conceptual framework of farmers' weed management decision-making processes and factors that influence their decisions for a given farming system. The complexity of learning new techniques for weed control, and integrating them into existing systems challenges the practical and conceptual skills of farmers. Because of the complexity involved in this change process a shift in emphasis from individual, or meeting style extension, to participative groups with associated demonstrations could prove effective. This paper utilizes the author's experience of successful use of groups for extension of weed management practices in the Dawson Valley area of central Queensland. The case study is presented and the implications for extension strategies are discussed.

THE SITUATION

The district involved is approximately 150 km long and 40 km wide. Four towns service the district. Social structures have developed around these centres. In addition to this grouping, there tend to be clusters of farms with broadacre cropping separated by areas less suitable for cultivation, and geographical boundaries like major rivers and hills. It was anticipated that social structures existed within these clusters. By 1984, most farmers in the district were interested in the use of fallow herbicides, or were aware of them, while only a small number were experimenting with them.

A NEIGHBOURHOOD GROUP APPROACH

The temptation to work with the more progressive farmers who were already experimenting with reduced tillage was avoided, because they had already developed their own self-directed learning strategies. When farmers reach the experimentation stage, they attract support from companies because of the enormous herbicide market potential. In addition to this, slow diffusion of the technology suggested that the progressive farmers tended to be isolated from the resource groups of the "average farmers". The approach taken was to utilize the existing neighbourhood group structure. Following the wheat

harvest in 1984, two groups (A and B) were formed and a further two groups (C and D) were formed following the 1985 harvest. Farmers in the four neighbourhood groups were identified by discussing the idea with several likely participants in each neighbourhood to determine which farmers should be involved. During this period, a company agronomist formed a separate group (E) of farmers who were experimenting with and using herbicides.

PROBLEM CENSUS

A problem census meeting was held with each of the four neighbourhood groups. Eight to twelve farmers attended these preliminary meetings. At these meetings, farmers discussed what their expectations (goals) were of reduced tillage, and what they considered were the constraints to its adoption. Questionnaires on these subjects were used with groups A and C. For comparison, the questionnaire was also used with group E, working with the company agronomist.

The farmers had high expectations of reduced tillage, in that they hoped to increase yields, reduce costs and also reduce soil loss. The farmers in the neighbourhood groups doubted whether yields could be maintained with reduced tillage, but their greatest concern was the high cost of herbicides. Other factors such as lack of information on herbicides, risk of injury to themselves or the environment, and risk of herbicide damage to following crops also featured prominently. Farmers in group E were concerned about technique difficulties, like stubble problems with planters and cultivators. This group was generally not concerned with the availability of information, perceived requirement for mechanical tillage, or environmental damage. They still saw the cost of herbicides as a problem but not as great a problem as the neighbourhood groups saw it. The variation in perceived constraints confirmed the need to target reduced tillage extension programmes to homogeneous groups.

The group facilitator's aim was not to secure instant adoption by all group members, but to raise the general level of understanding of the system by reducing the perceived complexity and teaching farmers how to develop the technology themselves.

GROUP DEMONSTRATIONS

The four neighbourhood groups were offered the opportunity to manage group trials involving a wheat fallow for one season. The facilitator selected sites that were subsequently accepted by the groups. The treatments were chosen by the groups to focus attention on the perceived constraints and opportunities of reduced tillage. All of the groups chose different combinations of treatments. The general low level of understanding of the topic necessitated some intervention by the facilitator if critical treatments, of which the group was not aware at that stage, were omitted.

On at least six occasions during each of the demonstrations, group decisions had to be made on weed control techniques for the various treatments. At the earlier meetings, the farmers were very dependent on outsiders for information.

All tillage treatments were performed by the cooperating farmer while all herbicide treatments were the responsibility of the facilitator, even though farmers participated. This approach was taken because the trial was to assess the success of the system and not the skill of the operator.

PEOPLE INVOLVED

To ensure that the discussion remained farmer orientated, non-farmer input at each meeting was limited to a maximum of two people. I was the facilitator at all meetings. Others involved were either specialist D.P.I. officers or company representatives with either a pre-arranged co-facilitating role, or a resource role.

Membership of the groups was not rigid. The frame of reference for the group was the neighbourhood and not a select group. Each group had 4 to 8 regular attenders with others attending occasionally. While actual meeting attendance was 4 to 12, 10 to 20 farmers were involved in discussions with each group. Farmers' ability to attend meetings was a problem because of the need to organise meetings on short notice with little flexibility of timing.

THE OUTCOME

The use of groups with associated demonstrations to adapt weed management technology to local situations had many benefits. The benefits gained are grouped into the categories below:

1. Benefits to the farming community. All groups had successful trials with the treatments showing varying levels of economic and yield variance to conventional farming. By utilizing the practical and short-term economic orientation of the farmers together with the technical input from outsiders, locally relevant systems were developed that would not have developed in isolation. Minimum input reduced tillage systems integrating low rates of herbicides specific to the local weed spectrum, and appropriate use of tillage proved both effective and economic.

   The experience reduced the ambiguity caused by the complexity of the various technologies involved in reduced tillage. The large amount of technical information involved with reduced tillage initially confused many farmers, however the experience they gained from participating in this exercise increased their confidence. In a supportive environment, farmers were able to learn how to adapt the technology to their situation. By the end of the 12 month exercise, many farmers had begun experimentation on their own farms, with greater awareness of the complexities, skills involved and possible results. When farmers begin experimentation, they attract support from the commercial representatives so the process is self-generating.

2. Benefits to extension personnel. Extension personnel gained hands-on experience with machinery and herbicides by working closely with the farmers on the demonstrations. They also learned about group dynamics and developed skills in working with groups. It was learned that extension personnel should stop making all the decisions for farmers but to help them to make decisions so that it becomes "their" learning project. Hersey and Blanchards' (2) situational leadership theory could be useful in providing direction and guidance to these participative groups. This theory is based on the amount of direction (task behaviour) and the amount of socio-emotional support (relationship behaviour) a leader should provide given the situation and "the maturity of the group members to the topic". It helps to decide when to tell, sell, participate and delegate the tasks to the group.

An all important lesson was that the success of these groups depends on the ability of the facilitator to respond to the group needs at a given time.

Time spent trying to manipulate group decision-making processes to fit a model practice, or trying to rigidly follow institutional guidelines from managing groups could be counter-productive.

Working with the groups fostered better coordination and cooperation on the local level within the D.P.I. It also formed a focal point for involvement of agribusiness representatives.

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