

Technology Transfer

A Comparison of Extension Program Delivery Strategies for Small and Part-time Farmers in North Carolina

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Summary. To provide educational opportunities for small and part-time farmers, a project was implemented using selected extension delivery methods. Individual methods or combinations of these were used to meet farmer informational needs. A comparison was made between person-to-person and self-directed (or nonperson-to-person) methods to see which means of receiving extension information farmers preferred. Findings indicated that person-to-person methods were not as useful as the self-directed methods.

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The Cooperative Extension Service has traditionally used a variety of communication methods for delivering educational programs. For example, the demonstration was shown by Seaman Knapp to be an effective delivery method at the beginning of the twentieth century (Rasmussen, 1989). This method continues to be widely used in program delivery (Bruening, 1991, Gor, 1988, Richardson, 1989). Even though demonstrations, newsletters, meetings, and personal consultation continue to be key means of program delivery by extension, some audiences do not find these methods useful (Clement, 1994).

Due to pressing social, economic, time, and other personal demands, many audiences prefer newer ways of receiving information. Ritter and Welch (1988) found that many traditional means of delivery may not be suitable for some audiences. Obanayujile and Hillson (1988) found that part-time farmers in Virginia prefer personal visits more than full-time farmers and have much less preference for using the telephone to obtain information than the full-time farmers. Okai (1986) found that Missouri small farmers prefer personal visits but also like extension publications as a means of receiving needed information. Part-time North Carolina farmers cited personal visits as their most preferred delivery method. Newsletters and demonstrations ranked second and third, respectively. The self-directed learning methods found most popular were bulletins/pamphlets and video-cassettes (Richardson, 1993).

Small and part-time farmers difficult to reach

Research shows that full-time farmers seek information from multiple sources. Anecdotal information from extension agents indicates that often small or part-time farmers find their options for receiving information limited due to time, physical energy, lack of clout with input and supply dealers/representatives, or feeling a sense of being unimportant to information providers. For these reasons, agents find it difficult to provide information to these audiences via popular delivery modes such as meetings, tours, demonstrations, telephone calls, and office visits. Also, while studies have shown that one-on-one consultation has been effective for the individuals involved, extension agents are finding this method increasingly difficult to carry out due to greater public demands for information, limited numbers of extension personnel, and difficulty in contacting these clients at convenient times.

A better way to reach small and part-time farmers?

Although difficulties have been encountered by extension in reaching small and part-time farmers, this audience is a valuable contributor to individual and community social and economic well-being as well as stewards of the environment. For these reasons, extension agents must find creative ways to reach these audiences effectively. Creative and efficient means of delivery were thought to be potential answers to the difficulties of reaching this audience. To seek needed answers to this program delivery challenge, a special project was developed in six North Carolina counties that sought to provide appropriate subject matter to the target audiences through innovative delivery means.

Project objectives

There were two primary objectives of this innovative delivery project. One objective was to determine the responsiveness of small and part-time farmers to selected program delivery methods (or combinations of methods) for receiving relevant farm information. A second objective, was to determine if selected nonperson-to-person program delivery methods are as effective in bringing about knowledge change as person-to-person delivery methods. Those methods considered nonperson-to-person included audiocassettes, fact sheets, miniature booklets, photographs, fax messages, bulletin/pamphlet, notebooks, posters, and videocassettes. The face-to-face methods included farm/home and office visits, telephone calls, and meetings. The knowledge change measure used a pre- and post-test with the pre-test administered at the beginning of the project, and the post-test within 1 month following completion of the four month project.

Subject matter focus of project

In the six counties where the program delivery project was implemented, the subject matter delivered ranged from strawberry production in two of the counties to insect scouting in two others. Plant disease control was the subject focus in one county, and animal production practices in the other.

Methodology

In the participating counties that volunteered to cooperate in implementing this delivery project, agents sought to identify all part-time and small farmers. An attempt was made to identify everyone who farmed part-time or operated units considered by the agent to be small, when compared to other farming operations in the county and those who were engaged in production agriculture for economic gain, regardless of their financial or other available resources. These identifications were made through interviews with other producers, market operators/managers, and personnel of other cooperating agencies. Agents made lists of the names of eligible farmers and randomly selected individuals to participate.

When the agents contacted the selected individuals to explain the delivery project and to request their participation, some elderly persons chose not to participate in the study. Altogether, 32 farmers participated and provided information regarding the program delivery methods used to provide them information. They also indicated change in knowledge resulting from the educational information provided. The knowledge tests focused on the subject matter content to be taught in each respective county and, therefore, could not be generalized for the entire project.

Results

In the comparison of person-to-person, delivery methods versus nonperson-to-person methods, participants were positive in their reception of nonperson-to-person delivery methods. However, for person-to-person methods, participation levels were lower. Persons who depended on person-to-person consultation in the past were positive toward this method. However, during the study, many simply did not show up for meetings or showed little interest in pursuing subjects via the telephone. Of the 32 program participants, 30 demonstrated a gain in knowledge at the conclusion of

the educational programs compared to their knowledge at the beginning, regardless of the means of delivery. On the locally developed tests that contained 11 to 15 questions, knowledge gains of participants ranged from 15% to 60%.

Nonperson-to-person delivery methods

The assessment of the nonperson-to-person methods indicated some preferences by the farmers. The notebooks, audiocassettes and videocassettes, miniature booklets, and fact sheets were especially mentioned by the farmers as being viable means for providing information to them, when they otherwise would not likely have sought such information from extension.

Combinations of methods

In each county, selected nonperson-to-person methods were used in combination to form a learning module, and the entire module was provided to the farmers for assessment. The module containing strawberry information included a notebook with four localized fact sheets, photographs, two pamphlets, and four audiocassettes in which the agent described the information in the fact sheets and photographs.

Other combinations were fact sheets, notebook, bulletin/pamphlet, and videocassette; miniature booklet and audiocassette; and fact sheets, audiocassette, and poster. These modules of information were especially well received by the part-time and small farmers, because they felt that they were receiving information they could study in a self-directed manner, yet have essentially all of the information they need on a particular subject.

Person-to-person methods

For the person-to-person methods, which included personal visits, meetings, and telephone calls, people participated at low levels or simply were not interested in receiving information unless they requested it. Their reasons for not attending meetings ranged from having to dress appropriately for a meeting or being too tired, to simply having more important things to do. Person-to-person delivery for these individuals did not depend on receiving information from Extension. Generally, the farmers indicated that the person-to-person methods were not convenient for receiving information.

Other delivery methods

Sending fax messages, as a program delivery method, was tested in only one county by three individuals who did not own a fax machine and indicated they never expected to own any. However, when loaned a machine as a part of the project, they liked this method so much that one of them purchased his own machine to continue receiving extension information. He indicated that he had saved over \$800 by receiving and using timely disease control information by fax. Another delivery method that was tested in only one county was a novelty item. This item was a magnetized information card containing a peanut disease control message. The farmers indicated that this means of delivery of information was useful. In another county, a poster was developed, but little positive response was obtained from this means of information delivery. However, poster design and/or delay in locating the posters may have influenced the receptiveness of this means of information by the farmers.

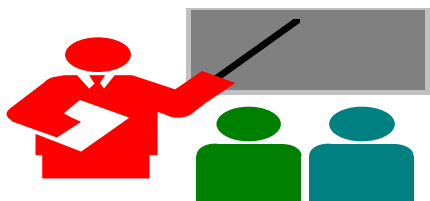
Conclusion

Evaluation of the program included pre- and post-tests that were developed for each subject area. These were administered to the participants at the beginning and end of the program. With the data obtained, plus observation by agents and anecdotal information received from the farmer participants, it was concluded that appropriate development of educational materials of a nonperson-to-person nature will be a valid means for educational program delivery by extension in future educational programming for small and part-time farmers. Altogether, one of the greatest indicators of the acceptance of the modular educational format for program delivery was that more than one-half of the farmers indicated a willingness to pay for these types of materials in the future.

Appropriate packaging of information into learning modules and summarily making them available to this audience for their self-study appears to be a highly desirable mode of program delivery for the farmers and extension personnel. This means of program delivery was found to be much more efficient and successful in educating these audiences than expending considerable time and other resources through person-to-person methods in which specific technology is transferred, but few long-term educational results are achieved.

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Note

High- and Low-performing Crabapples during Abnormally Severe Apple Scab Conditions

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Crabapple scab was extremely severe in northern Illinois during 1995. Almost 1000 calls concerning apple scab were received at The Morton Arboretum Plant Clinic during June and July. Abnormally high spring precipitation of 5.3 and 5.6 inches in April and May, respectively (30% and 36% higher than normal), undoubtedly caused the severe and prolonged scab outbreak, and the situation provided an opportunity to evaluate crabapples under extremely high disease pressure. Extreme wetness in April and May is very rare in northern Illinois, but an extremely wet April or May has occurred every 1 to 9 years from 1895 to 1983 (data from NOAA). Excessive spring wetness results in severe apple scab because repeated infection periods occur during budbreak and leaf emergence. The scab susceptibility ratings should not be considered overall performance ratings for crabapples under typical northern Illinois conditions.

We evaluated 102 *Malus* species and cultivars for scab symptoms in July and September and for vigor and recovery in September. Tree age ranged from 6 to 73 years, the median age being 14. With a few exceptions, three or more trees were evaluated per taxon. Disease severity was rated from 0 to 5 (T. Green, Western Illinois Univ.) and by estimating the percentage of tree canopy showing symptoms. Recovery and vigor ratings assessed new leaf growth and scab incidence using a modified version of Green's scale.

Many taxa performed well in 1995, but the following taxa stood out because they were free of scab in July and September and exhibited excellent vigor: 'Adirondack', *Malus baccata* f. *jackii*, 'Beverly', *Malus halliana* var. *spontanea*, 'Jewelcole', 'Mary Potter', 'Midwest', 'Molazam', 'Prairie Maid', 'Prairiefire', 'Purple Prince', 'Silver Moon', *Malus tchonoskii*, 'Tom's Pink', 'White Angel', *Malus xzumi* 'Bob White', 'Zumi Wooster'.

The following taxa were ranked most susceptible because of extremely high scab and defoliation levels in July and September: *Malus xadstringens* 'Hopa', *Malus xadstringens* 'Radiant', *Malus baccata* var. *mandshurica*, 'Centzam', *Malus coronaria* var. *dasycalyx*, *Malus glabrata*, *Malus kirghisorum*, 'Indian Magic', 'Indian Summer', *Malus xpurpurea*, 'Red Barron', 'Red Jade', 'Robinson', *Malus spectabilis* 'Riversii', 'Velvetcole'.

Of the crabapples in the most resistant group on which information is published, all are considered highly resistant to scab [*Malus*, vol. 9(2), 1995]. Several of the crabapples in the most susceptible group also have been reported to be resistant to highly resistant to scab, albeit some are known to be susceptible in some years [Mort. Arb. Pl. Info. Bul. no. 30-31 (1986)] and in wetter climates (T. Green, personal communication). The fact that certain taxa reported to be resistant to scab overall were found to be highly susceptible during 1995 underscores the important mediating effect of environmental conditions on the susceptibility of these taxa. The results may be helpful for identifying taxa that are consistently resistant to scab. In addition, the ratings may be helpful when considering cultivars and species for which little information is published.

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Data on all taxa are available from K.A. Jacobs.