MASTER'S REPORT

PRESENTATION OF HORTICULTURAL INFORMATION TO URBAN RESIDENTS

Submitted by

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CHAPTER I

INTRODUCTION

What method or methods to use in presenting timely and helpful horticultural information in a way it will be most acceptable to the people living in urban areas of Adams County is the problem that will be undertaken in this study.

Adams County is rectangular, eighteen miles wide and seventy-two miles long, bordering Denver, Colorado on the South. The population is approximately 106,000 people, and 90 per cent of this number live in the western portion of the county in the cities of Derby, Thornton, Adams City, Aurora, Westminster and Brighton. It was in these six areas the bulk of the data was collected for the paper. The population has doubled in size since 1953 and this increase has been in new housing developments. The majority of the people living in these areas have never planted a lawn, shrub or flower; thus horticultural information must be supplied through one medium or another.

The communication media available in Denver, are five television stations, eighteen radio stations and two large daily newspapers, which provide coverage in Adams County. Two of the television stations have weekly telecasts concerning gardening and horticulture. One station carries a program presented by Herb Gundell, Denver County Agent. Both of the newspapers devote space to gardening and horticulture, with special sections in the Sunday edition on the subject of horticulture. In addition, Adams County has one radio station and five weekly papers available, which allow time and space for horticultural information from time to time.

A gardening mailing list, maintained in the Adams County Extension Office, receive monthly circular letters and / or new publications on timely horticultural information. Bulletin racks have been placed in the urban areas so individuals living in these areas are able to obtain publications by the U. S. Government and Colorado State University more readily.

During the growing season the calls from these areas has increased so much that it requires placing a temporary assistant county agent in the Adams County

Office to answer horticultural inquiries. The calls from the urban areas have increased from 1100 in 1953 to 8400 in 1959.

Even with large numbers of requests from urban areas, the majority of the people do not know or are not aware of the facilities available from the Extension Service. This includes the seed dealers, garden stores and nurseries located in the same areas. These commercial concerns have untrained personnel offering services in yard improvement and development. Inferior varieties; therefore, are being planted and conflicting recommendations have arisen between the dealers and the Extension Service.

The Problem

How can county agents convey timely horticultural information to the people residing in the urban areas of Adams County?

Problem Analysis

1. What responsibilities do Extension workers have to non-farm families?

2. What are the methods of presenting horticul-

tural information?

3. What is the nature of requests urban Extension workers receive concerning horticulture?

4. What season of the year do the most problems arise concerning horticultural plants for people in the urban areas?

5. What phases of horticulture interest people in the urban areas?

6. What phases of horticulture present the most problems for these residents?

7. What sources of horticultural information do the people in the urban areas refer to most frequently?

8. What sources of information do the urban people find most reliable?

9. Do the sources of information provide enough knowledge to solve the horticultural problems of these residents?

10. Are the urban people aware of the horticultural services available through the Adams County Extension Office?

Delimitation

This investigation was limited to six urban areas of Adams County which were Aurora, Adams City, Derby, Thornton, Brighton and Westminster, and fifty-five garden club members of Boulder, Colorado.

Definition

Horticulture: Cultivation of garden, yard or orchard; art of growing fruits, vegetables and ornamental plants (trees, shrubs, flowers and lawn grasses).

Urban: In this study urban refers to the highly populated areas; either an incorporated city or town, or unincorporated housing developments with population exceeding 7,500.

Chapter II

REVIEW OF LITERATURE

This study was made to discover how extension agents could convey horticulture information to urban residents. The background information obtained in this chapter supplements the data gathered through the use of a questionnaire. Six urban areas of Adams County plus fifty-five garden club members of Boulder, Colorado were surveyed using a questionnaire as the instrument. All of the 815 replies tabulated were obtained through personal interviews.

Extension's Responsibility to Non-farm Families

Tukey, in 1950, brought out several important reasons for developing a program which includes attention to urban and non-farm rural people in addition to rural people.

> . . . the Smith-Lever Act, which established the Cooperative Extension Service, clearly states

> that extension's field of education responsibility extends to all the people of the United States. This is of keen interest to the field of horticulture. It means attention to non-farm rural residents and urban residents. It means more attention to commercial floriculture, home and community gardening and landscaping. In this respect the extension worker could profitably turn back to his beginning course and textbook in the broad field of horticulture that included not only commercial production of apples and tomatoes, and he might also profitably bring this information to the attention of his administrative superiors. The importance to society of a quality supply of food and fiber should not be minimized, yet the importance to society of matters of the spirit and of living up and beyond existence in a state of physical well-being needs to be aggressively promoted. (8:453)

White, the agricultural agent in Philadelphia County, Pennsylvania, whose county is almost 100 per cent urban and suburban in nature wrote "Extension has a responsibility to urban and suburban people. They need and want what we have to offer." (10:253)

In 1957, Hannah, wrote about Extension's obligation to the urban and suburban people.

> In view of the great changes taking place in the world, one hesitates to make predictions. Certainly, the steady decline in the number of farm families and the flight to the suburbs from the crowded cities will have their effects upon extension work. But one of the most remarkable characteristics of Extension is its resiliency and adaptability . . .
>
> As new public needs arise and are identified,

> extension workers will find new challenges which will demand their best efforts. (4:165,171)

Vines, had this to say about Extension's responsibility to the urban population:

> In light of these changing times, Extension is concerned with the urban population as well as rural. There is a constant decrease in the number of people who provide the food and fiber for this Nation and for foreign trades channel . .
>
> . . . and assist urban and rural people to develope a mutual admiration and respect for their respective vocations and position in society. (9:1)

A report made by the Urban Planning Committee of the Colorado Association of County Agricultural Agents in November 1959, stated:

> Recognizing that rural and urban citizens still need to understand each other's problems and way of life better, we recommend that County Agricultural Agents in Colorado actively encourage farmer-businessmen get togethers and projects. We also suggest that they become active members of their local Chambers of Commerce, assisting in every way possible to make their urban-rural relationship more effective. Promoting these programs and other community betterment causes as related to urban planning are within the realm of Extension activities. (13:1)

Kaufman, in 1956, summarized what agricultural agents in metropolitan areas felt was their responsibility to urban people. The attitudes were somewhat divided of the 64 agents from 35 states answering his questionnaire.

A. Attitudes of Agents in Metropolitan Areas

I. Agents who felt Extension is obligated to help urban families. Reasons given:

1. Smith Lever Law is permissible.

2. Extension is a tax-supported public institution.

3. Most of the county population is non-farm.

4. Increasing requests from urban population for information.

5. Public relations; better understanding by urban people of the complex problems facing agriculture.

6. Great challenge to Extension.

II. Almost as many agents felt Extension is not obligated to serve the non-farm people or at least not in a position to serve them. Reasons given:

1. Primary responsibility to farm people.

2. Extension is best equipped to work with them.

3. Avoid promoting Extension with urban families, but keep them happy when they request help.

4. Difficult to visualize an urban Extension program.

5. Experiment station resources are mostly limited to agriculture.

6. Program directed where it will have the greatest effect on the agricultural economy.

7. Need a better understanding of urban work.

8. Problem of more and adequately trained personnel to take on this added responsibility.

9. Interesting challenge that calls for careful planning with a minimum of emotional crusading. (15:2,3)

Miller, in offering reflections on the Scope Report wrote:

> The Scope Report emphasizes the inseparable interplay between the agricultural and industrial sectors and between city and country. We know this interplay is usually political, increasingly social, and continuously economic. Insistence on the notion of interdependence is the real explanation why the Report recommends that Extension focus on important problems rather than on what clientele to be served.
>
> The Scope Report suggests that modern extension education must distinguish important and relevant matters from those that are not. It implies rejection of the immediate and most pressing as necessarily the most important. (6:195)

A report of the Scope and Responsibility Subcommittee of the 1957 Extension Committee on Organization and Policy, in discussing the rapidly changing scene stated with regard to population and community pattern changes:

> Extension must be ever alert, therefore, to adjust its programs, focus, and methods to insure that its resources are used most efficiently and in keeping with the everchanging problems of the

people demanding services of it. And even here, change is quite apparent. For reasons referred to briefly above, Extension is being requested to provide educational services to both more people and a wider variety of interest groups. However, Extension's resources are not unlimited. Hence, there is constantly the necessity for continuous focusing on essential-though shifting-areas of need. (16:7)

In its report, the subcommittee defined the clientele of the Extension Service and emphasized the need for careful study to determine program priority:

> The Smith-Lever Act, in stating the purpose of cooperative Extension work, refers to "the people of the United States." This Act grew out of a recognized need for an informal educational service which would take the results of research "on subjects relating to agriculture and home economics" to people who could apply these results in improving their welfare. Although farm families were unquestionably envisaged as a major audience, the legislative history and the Act itself specifically recognized a broader audience to include rural non-farm residents. This includes the residents of villages, towns and cities of less than 2,500 people. Over the years, however, Extension has been called upon to provide educational assistance to a much broader audience, fairly adequately encompassed in these general groups:
>
> Farm families.
>
> Non-farm rural residents.
>
> Urban residents.
>
> Farm, commodity, and related organizations.
>
> Individuals, firms, and organizations which purchase, process, and distribute farm

products with essential services and supplies such as credit, fertilizers, feed and many others.

We believe no one can legitimately question that Extension's first responsibility is to farm families. However, others cannot be ignored. In differing degrees, and for somewhat different types of problems, they are interested in the results of research from our public research laboratories. At the same time, knowledge of this research and the application of findings of all groups, in addition to farm families, can be and should be of direct benefit.

If we accept the principle that Extension's responsibilities are to farm families first, but not to them alone, then a major operational problem of Extension is how to allocate its time and resources so that the highest priority needs of those other than farm people are given appropriate attention. Because of the diversity of economic and population patterns throughout the nation, this allocation of extension resources necessarily must be determined within each state, and to a large degree, within each county.

It is important that the breadth of this responsibility, and the opportunity and responsibility for Extension to render service on all appropriate fronts, be recognized by all. However, within this broad responsibility, care must be exercised by Extension and the people it serves that problems of major importance at any given time are given priority. (16:13)

In determining the scope and extent of agricultural Extension's responsibility for city people, Hammond wrote:

The responsibility of agricultural extension extends to all the people. This breadth of responsibility is substantiated by this study

and the references cited. The degree of responsibility to the various segments of the population varies. Many extension workers contacted and references cited indicated that agricultural extension's primary responsibility is to the farm people.

In addition to finding almost unanimous agreement that extension has a responsibility to city people, there also seemed to be general agreement that the demand from city people is increasing. The survey showed that urban work takes about 37 percent of the agricultural agents time in counties with cities of 100,000 or more population.

If extension takes the position that it is responsible for extension education in agriculture and home economics for all people, it follows that it will assume this responsibility with city people. If it does not, another agency will be established to render this service. (14:1,2,3)

Methods of Presenting Horticultural Information

In a study made by Hammond to determine the scope and extent of agricultural Extension's responsibility for city people, several methods of presenting horticultural information were discussed. In summarizing the questionnaire that was sent to all Extension directors in forty-eight states and county agricultural agents in urban counties Hammond stated:

There also was agreement that the mass communications methods of TV, radio and newspapers

> are necessary aids in conducting educational programs with urban people. Other methods of communication were being used by agents in their urban work, but these three were mentioned more times than any others as being the most effective methods now in use.
>
> The use of TV, radio, the press, exhibits, meetings and all other mass methods of communication should be used in conducting educational programs for city people. It seems unlikely that many urban counties will appropriate sufficient funds to increase the agricultural agent staff so that personal contact work can be done with city people. (14:4)

In regard to an effective over-all program Hammond thought a co-ordinated effort by urban county agricultural agents and additional training would alleviate the situation.

> Further training should be made available to agents working in urban counties to assist them in their work with non-farm people. In states where there are a number of agricultural agents involved in this type of work it will not be difficult to set up training sessions for agents. In the more rural states where there are few agents involved in urban work it may be desireable to have several states cooperate in conducting these schools. If a program of any magnitude is decided upon, the best trained agents, or training for present agents should be obtained. (14:4)

In regard to Extension's methods of presenting horticultural information, White stated:

> Some twenty-five weekly newspapers, three dailies, nine radio stations and three television stations receive garden information from

the Philadelphia extension office. (10:248)

The report of the urban planning committee, in 1959, recommended the following methods:

> As there are many well organized groups of citizens in many towns and communities where industry and business are of importance, we feel that some attention should be devoted to a closer cooperation with officials of industrial and labor organizations. We recommend, therefore, that County Agents provide particular attention to such opportunities as furnishing educational motion picture films and other educational publication material so that these organizations may assist in distributing the material to their membership.
>
> The Committee finds that in many large urban centers throughout the United States the use of such public education media as television, radio, and the local press has been more effective in gaining widespread distribution of extension educational material and instruction. We recommend, therefore, that agricultural agents in Colorado utilize, as much as possible, what public educational media they can muster in order to promote the widest possible distribution of the information and education that they may have to offer the general public. These programs may be pointed directly to an urban population. They will, in probability, increase the number of extension customers greatly without increasing the actual load on office and home calls. Television shows should be primarily action programs, not offer plain discussions or debates. Radio programs are more suitable for debate or oral instruction. The press can be used effectively to underscore efforts with the radio and television. Where Agents do not have the facilities of the local television station, but have opportunity to receive signals from larger communities throughout the state, they should encourage their extension

customers to tune in on those programs which originate from Colorado State University or its subsidiaries.

The Committee realizes that the movement and organization of federated and non-federated garden clubs with a total membership well in excess of 6,000 in Colorado, is an important public that requires assistance and service. We recommend, therefore, that agents in towns and cities encourage the establishment of garden clubs and cooperate with local garden organizations and clubs by assisting them through organized workshops, lectures and other educational contributions. These garden club people are an important segment of our population. Many of them are potential leaders in specialized fields in their interest and general knowledge can be augmented effectively.

The Committee realizes that one of the most acute needs of Agricultural Agents in urban and town areas is for a larger availability of printed pamphlets and instructional or educational bulletins. The need is not primarily for involved 40-page pamphlets with much artwork, but short 4 to 8-page instructional folders which discuss only one subject or one phase of a certain horticultural problem. The Committee, therefore, recommends that agricultural agents go on record to urge the State Extension Director to increase the number and scope of available printed material so they may better serve the Extension customers and friends in their respective urban and town areas. (13:1,2)

In 1957, Noordhoff said, "The public will decide your program for you, sometimes faster than you think". By keeping good daily records of all office calls, phone calls and farm and home visits, agents are

better able to focus a program of education to people's fast changing wants and needs. (7:249)

"As an educational team, Extension has to be in tune with the times," as stated by Haynes, in 1958. In addition, the big job of Extension today is to harmonize its programs and methods with the continually changing needs of the people it serves. Even though adjustments have been made to meet the needs of urban people, the farm folks continue to receive the latest information through the various extension teaching methods. "There is a tendency toward more specialized meetings with smaller attendance."

Haynes further stated:

> Twenty years ago the agent spent two days each week on farm visits in this effective, individual, personal-help method. Today, while slightly fewer farm visits are made (386 in 1957 compared to 590 in 1937), they are mainly hurried calls to committeemen, demonstrators, and cooperators. More time is now required in the office, handling administration and increased calls concerning urban problems on lawns, shrubs, gardens, flowers, and household insects. (5:175)

Drage, listed areas of work in which to concentrate in order to reach a large number of people and to be responsive to their expressed everyday horticultural needs.

1. Subject matter will be assembled and made available in a number of brief, to-the-point, well-illustrated pamphlets or circulars.

2. County extension workers will be assisted in planning more effective educational programs to reach a greater number of people by mass media methods.

3. State-wide horticultural organizations will be assisted in planning and carrying out programs to improve standards of horticulture.

4. The specialist will attempt to coordinate all horticultural activities in this phase to the extent that all programs will be strengthened and made more effective.

5. The specialist will report problems encountered in the field to the proper research personnel or committees and will assist them in motivating research based on needs. (12:13,14)

In 1959, Smith recommended work with organized groups:

In the densely populated counties, agricultural agents work with many special interest organized groups. These groups are comprised of a non-farm or farm membership or they are organized groups who serve non-farm or farm people by trade or profession.

The agents are doing considerable work with the occupational groups who produce crops for a living or those who service the agricultural needs of the farm and non-farm clientele. In this group are florists and bedding plant growers, nurserymen, garden supply dealers, landscapers, custom spray operators, lawn maintenance men, school grounds superintendents, golf course superintendents and exterminators.

> The other groups that agents are working with rather extensively are the volunteeristic special interest groups. Among the leading ones are civic associations and garden clubs.
>
> The least group work is with labor groups, arborists, estate superintendents and builders. The remaining groups lay somewhere in between the much and non time spent area.

Smith also found publications helpful. The most popular ones dealt with fruit, lawns, landscaping, flowers, household insects, trees and shrubs. "The state college prepared seventy-eight percent of the publications, twelve percent by U. S. Departments, the counties prepared eight percent and remaining two percent from commercial or other sources", as stated by Smith. Most of these were of a mimeographed nature. A few counties reported that they have several hundred mimeographed handouts which were used to answer current requests. One county reported that they reproduced state publications locally when the state supply of a popular publication was exhausted. (17:32)

Smith summarized a recorded telephone message was an effective method used by extension agents. Agents in Worcester County, Massachusettes, reported two years of very favorable results, where 300 people called daily

to hear the 45 second recorded message during gardening season. The total calls for each year were about 150,000. The agricultural agents used the device from April through mid-October and the home agents used it the remainder of the year.

Nassau County, New York agents reported favorable results using the recorded telephone message with 110,000 calls in 1958. For 1959, a multiple set system was installed which would receive five callers at one time and present the message two times. The message is 60 seconds long and is changed at noon except Saturday and Sunday.

Agents using these devices reported excellent acceptance and results. The extension programs in their counties have been accelerated tremendously without increasing the size of the agent staff. (17:19,20)

Denver agents cooperate with many groups including those with interest in arboriculture, the nursery business, and landscaping. The agents utilize the mass media of radio, television, and press to a great extent in disseminating educational information.

> Our greatest ally in Denver is the telephone. It rings practically all day long, and we are glad to utilize it because it would be

> impossible to give home help to all the people that we aid on the phone. Of course, it is necessary to make frequent inspection trips and personal investigations to answer many inquiries which cannot be adequately serviced over the telephone. (3:23)

In 1950, Grandy divided the kinds of work into three catagories.

a. Among men:

> Technical information on all phases of agricultural production, marketing, 4-H club work, family and community life; including gardening, landscaping, horticulture, floriculture, poultry and rabbit production, trees and forestry, insects and plant and animal disease control, recreational programs, personal informational services, and services to commercial and civic groups.

b. Among women:

> Technical information and service work on all phases of Home Economics, family and community life; including, landscaping, gardening, horticulture, floriculture, all types of girls 4-H club work, home management, home furnishings, foods and nutrition, health, clothing and textiles, poultry.

c. Among boys and girls:

> All adaptable phases of 4-H club work, including; organization and planning, mechanics, garden, rabbits, poultry, pets, forestry, home grounds improvement, all phases of home economics, 4-H club work in foods and nutrition, clothing and home management, recreation and community activities. (1:18)

The extensive use of mass media was one of the items listed by Kaufman as methods for use in urban areas. This included providing information to radio and T.V. farm directors, as well as personal appearances. The use of telephone, letters and office calls required full time of some agents to take care of these requests.

Institutes, demonstrations and tours provided meetings to discuss problems encountered by small property owners. In generalities, all the programs were directed for group presentation rather than individuals. (15:1,2)

The writer, in 1958, summarized some of the horticultural problems encountered by Colorado county agents. The data for the study were compiled from a mail questionnaire sent to all county agents in Colorado.

One of the methods used for disseminating horticultural information was the telephone. The average county agent in Colorado received 20 telephone calls per day. Nine out of ten agents had an average of 4 telephone calls on landscaping. For the larger population counties 16 telephone calls per day had to do with landscaping.

In areas where new housing was going up rapidly the majority of these calls were from new housing areas,

otherwise old established housing areas predominated.

Bulletins were used for answering inquiries eight out of ten times. Floriculture and ornamental horticulture publications were used fifty-nine percent of the time to answer inquiries.

Half of the inquiries about landscaping came from urban areas primarily in the spring. Sixty-three per cent of these questions concerned maintenance or after the primary landscaping procedure has been accomplished.

Four counties used leaflets to answer requests presented in brief and concise form on a specific subject. (11:3,4,5)

Correspondence with Kaufman[1] revealed the use of a mimeographed handout to satisfy the demands of the urban people. A bulletin was prepared to answer the most common questions. When a telephone call was received regarding any of the information contained in the bulletin it was put in the mail for them. This decreased the home visits and saved time explaining situations over the phone. The same information was published during one

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[1] See Appendix A

week in the local newspaper. Readers were asked to clip this information for future use. The use of the bulletin and news articles saved the Casper, Wyoming Extension office time to make more farm visits.

An interview with John Aldern[2], Program Director for Radio Station KZIX in Fort Collins, revealed the following ideas on radio communication:

> There are no definite figures on how many people listen to the radio, it could only be an educated guess. People will never write in, even on "give-aways", but the majority of listeners will remark orally on their listening habits.
>
> The letters received by radio stations are not necessarily from one age group or special interest groups. Usually the write-ins are from a cross section of the listening audience.

Spots, announcements 10 to 30 seconds in length, are especially effective in making the people aware. "The most effective combination," according to Aldern, "is the use of radio, television and newspapers to get something across. The radio will make the public aware orally, T.V. will make them visually aware and the newspaper will give a detailed follow-up of radio and T.V."

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[2]See Appendix B

Denver county and the three suburban counties of Adams, Arapahoe and Jefferson have a population in excess of 850,000 people. The urban horticulture requests that come into the four extension offices are handled by different methods. Interviews with the Extension Agents in Jefferson, Arapahoe and Denver Counties revealed these various methods.

Charles Lane[3] stated:

> In Arapahoe County, the most effective method of disseminating horticultural information was the personal call. Personal calls were followed by radio and third, dealers meetings have proved quite successful. The extension office does not have a television program.
>
> Two radio programs were maintained on separate stations. Each program consisted of a different subject. A wider range of timely horticultural subjects was presented to the listening public.

"The most effective method the extension office used in disseminating horticultural information," said Stanley Stolte, "was single sheet subject matter handouts."[4] Handouts were condensed and mimeographed in

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[3]See Appendix C

[4]See Appendix D

the Jefferson County Extension Office. Material for the handouts was derived from horticulture bulletins from the U.S.D.A. and Colorado State University. "These brief publications have met with favorable results, because of the competition for time in urban living."

Circular letters were second in importance while individual calls ranked third. The latter being inefficient but effective and they were used whenever the time allowed.

Denver County Extension Agent, Herb Gundell,[5] summarized his most effective methods were the use of newspaper, T.V. and radio.

> T.V. and newspapers reach more than radio, but radio is effective, too. Throughout the year, a T.V. show entitled "THE WEEK END GARDENER", a Saturday afternoon broadcast on the radio and a Sunday column on gardening in the magazine section of "THE DENVER POST", were maintained. During the growing season, we initiate a second radio program on another station.
>
> When outbreaks occurred, the office was called to give special broadcasts over T.V., and radio, with articles in the newspapers. To be effective, the same material was used on all types of media simultaneously. That was more effective than dispersing four separate items at the same time.

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[5] See Appendix E

Nature of Horticultural Requests

This portion of the review of literature will attempt to determine if similiar requests are made to all urban extension agents concerning horticulture.

In 1959, Drage stated that the nature for horticultural help coming from metropolitan areas was as follows:

> The study showed that 61 per cent of the letters answered requested information in the ornamental horticultural phase; 34 per cent wanted answers to home garden questions. Only 6 per cent of the letters of inquiry came from growers growing vegetables or fruits for sale.
>
> A study of the requests for assistance coming from agents, person to person, letter and phone, indicates that nearly every request was for help in providing information of an ornamental horticultural nature. Not only was information desired, but help was requested in organizing programs to reach a larger number of people. (12:2,3)

In regard to the nature of requests in Denver Extension Office, Gundell stated, "The agricultural work deals to a very large degree with information and demonstrations on lawns, shrubs, trees, landscaping, insect and disease control and various other aspects of home garden management." (3:22)

The writer, in a survey of all Colorado county agents summarized approximately half of the calls on landscaping came from suburban areas and the remaining half was divided between city and rural areas. The problem would be placed in the suburban area for the most part. "Throughout the state calls concerning landscaping developed primarily in the spring (55% of the time) followed by summer with 23% and 12% for the fall," said the writer. The study further revealed that the counties with the largest population would have 4 personal and 16 telephone calls per day on landscaping. (11:5,6)

"Programs dealing with lawn and garden problems are the most common ones now being conducted by county agents," stated Hammond. (14:2)

In regard to Extension's responsibility to urban and suburban people, White stated:

> I am regularly called on by civic associations and garden clubs for program assistance. Mass media rely heavily on the county extension office for garden information. Consequently, home owners looking for this information are subjected to extension teaching indirectly. (10:248)

Smith found in his survey the agents were doing considerable work with the occupational groups who produce crops for a living or those who service the agri-

cultural needs of the farm and non-farm clientele. In this group were florists and bedding plant growers, nursery men, garden supply dealers, landscapers, custom spray operators, lawn maintenance men, school grounds superintendents, golf course superintendents and exterminators. (17:5)

Grandy's data on urban extension work in Colorado was obtained by mail questionnaires from the county extension workers in twenty-four counties. These counties had twenty-nine cities and towns with population over 2,500 where urban extension work was conducted. It was reported, that:

> . . . all twenty-four of the counties carried work in gardening, twenty-three in horticulture, and twenty-two in landscaping. These three lines of work were apparently the most needed and desired by urban residents . . .
>
> Extension agents in Denver County devoted full time to urban extension work. Extension agents in the twenty-three agricultural counties devoted an average of 16 per cent of their time to work with the urban people in their counties. (1:8)

The three extension agents of Arapahoe, Denver and Jefferson Counties revealed the following facts concerning the nature of requests that came into their offices.

In the interview with Charles Lane[6], Arapahoe Extension Agent, it was estimated 90 per cent of the questions the past season were on lawns. Trees and shrubs were the remaining 10 per cent of the questions. Lane said, "The majority of these calls were from suburban areas."

Inquiries concerning care, planting and maintenance of the lawn were the most important problems posed for the Jefferson County Extension Office.[7] "The next request," mentioned Stolte, "that the office was called upon to answer, was general landscaping. This included yard planning, trees, shrubs and flowers." Stolte went on to say, "Diseases and insect problems ranked third, with insects and their control the more important of the two."

Gundell[8] states, "Horticulture calls, in generalities, were the prime requests." He went on to explain these calls would include house plants in the winter, lawn

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[6]See Appendix C

[7]See Appendix D

[8]See Appendix E

work through the summer, planting care in the spring, and fall care of ornamentals. The Denver office does not have one call at any time of the year more than another, with the exception that the lawns were perhaps the most outstanding call. Gundell stated, "The public wants timely information and not something that will concern them in six weeks."

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Chapter III

METHODS AND MATERIALS

The purpose of this study is to determine the most effective ways a county agent can convey horticultural information to people in urban areas. A survey was made through personal interviews with people residing in the areas to obtain the desired data. Personal interviews were also made with Extension workers residing in the area and recorded in the appendix.

In developing the questionnaire, conferences were held with, A. M. Binkley, Head of the Horticulture Department at Colorado State University and H. D. Finch, Professor of Extension Education at Colorado State University, to co-ordinate the survey between the two departments. To emphasize eye appeal to the respondents, pictures were used in the questionnaire.

The questionnaire was distributed throughout Adams County, Colorado, in the six urban areas of: Adams City, Derby, Aurora, Brighton, Thornton, and Westminster.

In addition fifty-five garden club members from Boulder, Colorado, responded to the questionnaire. In Adams County a door to door survey was conducted to obtain answers to the questionnaire. On certain days during the summer and fall of 1959 the writer with his wife and secretaries from the Adams County Extension Office went to one of the six areas surveyed. Sections of each urban area were chosen at random including areas of new housing as well as older "run-down" areas. Each section included four city blocks.

Eight per cent of the homes contacted refused to cooperate in the survey and one-third of the residents were not at home. After discarding the incompletely answered questionnaires, 815 were tabulated and analyzed.

The data was entered on Unisort cards for tabulation. In the analysis of data, comparisons were made between the six areas in Adams County, and fifty-five garden club members of Boulder, between the different age groups and between the number of years individuals had grown horticultural plants.

CHAPTER IV

ANALYSIS AND DISCUSSION OF DATA

This study consisted of replies received from a door to door survey conducted in the six urban areas of Adams County, in interviews with 55 garden club members of Boulder, Colorado and deals with how horticultural information is received by people in the urban areas of those counties. There were a total of 815 replies tabulated and analyzed in the final master data sheet.[1] Within the master data sheet, breakdowns were made for grand total, five urban areas adjacent to Denver, Brighton, Boulder, age of respondents and the number of years horticultural plants had been grown. Tables and figures are used throughout the chapter whenever possible to support the discussion about the problem.

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[1] See Appendix H

Extension's Responsibility to non-farm Families

The Smith-Lever Act in stating the purpose of cooperative Extension work refers to "the people of the United States." This would include persons on the farm as well as non-farm residents. In other words, extension's responsibility may extend to any of the people of the United States. However, initial statements from within the Extension Service indicated that Extension was not equipped to work with urban people. Since a large number of requests concerned with horticulture originated in urban areas, technical knowledge in horticulture was required, and new methods of dispersing information was needed to save enough time to carry out regular programs.

Later, new and more efficient methods were devised and adapted to this new public. The 1957 committee on Extension Organization and Policy broadened extensions responsibility in the "scope" report. This report emphasized the inseparable interplay between agriculture in the country and industry of the city. In addition, extension was advised to focus on important problems, rather than on the clientele to be served.

Life in America is as dynamic as the ever changing control for outer space exploration. Extension must, therefore, adjust its programs to meet the needs of all people. As more people of wider interest groups demand services offered by extension, changes must be made to meet the needs.

Additional work with urban and rural people will encourage mutual respect for their respective vocations. Extension personnel may encourage farmer-businessmen meetings. At these gatherings programs may be developed to allow urban and rural citizens a chance to better understand each others problems. Promoting such programs and other community activities as related to urban planning are within the realm of extension activities.

It is likely that if extension does not assume responsibility for the city dweller another agency will be established to render such service. This would tend to justify extension's becoming involved with non-farm families.

Methods of Presenting Horticultural Information

It seems unlikely that urban counties will appropriate sufficient funds to increase the county extension staff. Personal contact, therefore, cannot logically be made with many city people. The use of mass media becomes necessary in conducting educational programs for urban people. Radio, television and newspapers are the most effective methods now in use.

News articles originating in local extension offices appear as regular columns, features in Sunday supplements or other articles. The articles are either written by the agent or the material is given to the paper for stories. In one instance, readers were asked to clip timely information that appeared in the paper for future reference. This provided an effective use of the newspaper and also decreased the number of general horticultural calls received during that particular growing season.

When used to supplement television and radio; newspapers often provide a detailed account of the same information.

Radio will make the public orally aware while visual awareness is created by television. In promoting a program, radio, television and newspapers provide an effective combination.

Announcements, 10 to 30 seconds in duration are called spots. Programming spots, on radio and television, throughout the day and evening are especially effective in making the people aware of a problem. By using this method, greater numbers of people are reached through extension, without increasing the actual load on office and home calls. The spots that pertain to timely horticultural information could be considered "public service" time.

Radio and television farm directors provide outlets for horticultural information. Agents may submit material for broadcasting by station announcers or make personal appearances to convey the information to the public. Utilizing the public education media of television and radio has been effective in gaining widespread distribution of extension's educational material and instruction. The programs may be directed to an urban population.

Printed publications which discuss only one subject or one phase of horticulture serve extension's customers well in urban areas. Involved 40-page bulletins do not meet these needs well because of the cost and the competition for time. Not all of these publications are printed at the State University and lack local application. In the greater Denver area, four counties on a coordinated basis have written and printed publications to meet local demand.[2] Each leaflet produced, dealt with only one subject and did not exceed four pages.

Other counties surveyed have produced eight per cent of the publications they use. Most of these were mimeographed.

A slightly different approach has been used by a Wyoming Extension Agent located in Casper. A mimeographed leaflet containing all basic horticultural information for the general area was constructed. Whenever calls came into the office, the publication was sent to the inquiring party. If, after receiving the information, the question was still unanswered, the individual could again

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[2]See Appendix F for an example of a publication printed by Adams, Arapahoe, Jefferson and Denver Counties.

inquire. Using this method, the number of calls from the urban areas decreased. This allowed time to make the necessary farm calls that had been left unanswered due to a lack of time.

Work with organized groups will reach larger numbers of people with horticulture knowledge. Training and educational meetings may be used with specific occupational groups. These groups may produce crops for a living or serve the agricultural needs of farm and non-farm clientele. Florists, nurserymen, groundskeepers, landscapers and many other related occupations are examples of these groups.

Extension's cooperation with garden clubs, officials of industry and labor, tend to multiply their efforts. Agents can provide educational films, publications and programs to these groups. Institutes, demonstrations and tours are also tools that have been used to inform these groups.

Telephone answering sets, in areas of dense population, provided an effective method of dispersing horticultural information. Agents using these devices reported excellent acceptance and results. The recorded

messages varied from 45 to 60 seconds and were changed at noon everyday except Saturday and Sunday. The agricultural agents used the device from April through mid-October and the home agents used it the remainder of the year. In some instances response was great enough to install a multiple set system. The system would receive five callers at one time and present the message two times. The total calls for each year ranged from 110,000 to 150,000. The extension programs in the counties involved have accelerated without increasing the size of the staff.

Personal calls, while inefficient are effective. It would be impossible to give home help to all the people requesting aid from local extension offices. Frequent inspection trips and personal investigations have to be made to maintain adequate knowledge of seasonal problems confronting the home gardener.

Telephone calls and circular letters have provided means of answering horticultural inquiries in the past. These methods still provide assistance in disseminating large amounts of knowledge to urban residents. They provide more efficient use of agents' time than do the personal calls.

Nature of Requests

In the Denver Metropolitan area requests deal to a large extent with information on lawns. Inquiries concerning care, planting and maintenance of the lawn were the most common. General landscaping problems of yard planning, trees, shrubs and flowers are included to some degree. These requests originate during the spring and summer 78 per cent of the time. During the other two seasons the calls range from fall care of ornamentals to proper watering procedure for house plants.

Insect and disease problems occur throughout the growing season. Outbreaks may increase the number of requests at times because the public wants timely information, yet these instances are sporadic. With insects and their control more important of the two.

Work with occupational groups who produce crops for a living or those who service the agricultural needs of the farm and non-farm clientele is increasing. Florists, bedding plant growers, nursery men, garden supply dealers, landscapers, custom spray operators, lawn maintenance men, golf course superintendents and exterminators make up this group. The direct help given these groups may be

workshops, conferences and educational meetings. The information may be presented by extension workers or key personnel within these groups.

Season of Year For Horticulture Problems

"What season of the year do you have the most horticultural problems," was a rather ambiguous question. Naturally the most problems will arise during the growing season. The findings supported this theory, in that over

Table I. COMPARISON IN DIFFERENT URBAN AREAS OF WHAT SEASON OF THE YEAR MOST PROBLEMS ARISE CONCERNING HORTICULTURAL PLANTS IN PER CENT OF REPLIES RECEIVED FROM ALL RESPONDENTS.

Seasons	In Percentage of replies received Total 815 replies	Boulder 55 replies
Spring	26	15
Summer	55	78
Fall	11	7
Winter	8	-

one-half of all respondents indicated the summer months presented the most problems. Table I indicated the Boulder garden club members had three-fourths of their

problems during the summer months with 15 per cent in the spring. Later on in this chapter it is shown whether or not respondents were aware the county agent could help with horticulture problems. Fifty-nine per cent of all respondents reported negatively to this question.

Therefore, during the spring and summer 81 per cent of all respondents and 93 per cent of garden club members have problems in horticulture. This would indicate they do not realize help is available locally. Extension offices are literally swamped with requests during this period, but this would indicate large numbers were seeking advice outside the extension service.

Phases of Horticulture

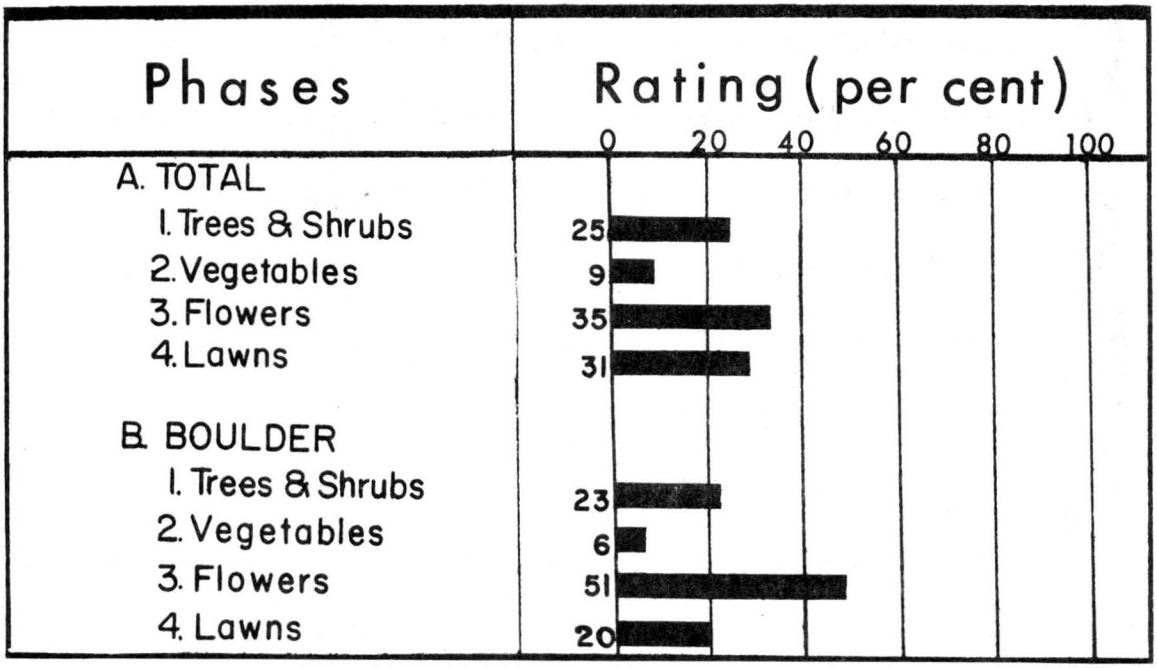
Phases of Interest to Urban Residents

The major phases of urban horticulture include flowers, lawns, vegetables, trees and shrubs. A question was asked to determine which phase interested urban residents. Figure I shows the results for all areas and Boulder garden club members. Flowers ranked first for both catagories, with the garden club members indicating

half in favor of flowers.

Organized to learn more about horticultural plants, garden club members can be considered more than amateurs in this field. Flower shows, home and community beautification projects might explain their interest in

Figure I. COMPARISON IN DIFFERENT URBAN AREAS OF WHAT PHASE OF HORTICULTURE INTEREST THE RESIDENTS OF THE URBAN AREAS OF ADAMS COUNTY AND GARDEN CLUB MEMBERS OF BOULDER IN PER CENT OF REPLIES RECEIVED FROM ALL RESPONDENTS.



flowers.

Flowers, lawns, trees and shrubs were evenly distributed for total areas with 35, 31 and 25 per cent respectively. In comparing Boulder with total respondents

vegetables were of the least importance. In the past, a vegetable garden was considered a necessary part of the landscape. At present, if it is included at all, the use of the yard for outdoor living and lot boundary lines reduces the size of a vegetable garden. This might explain the lack of interest with this particular phase.

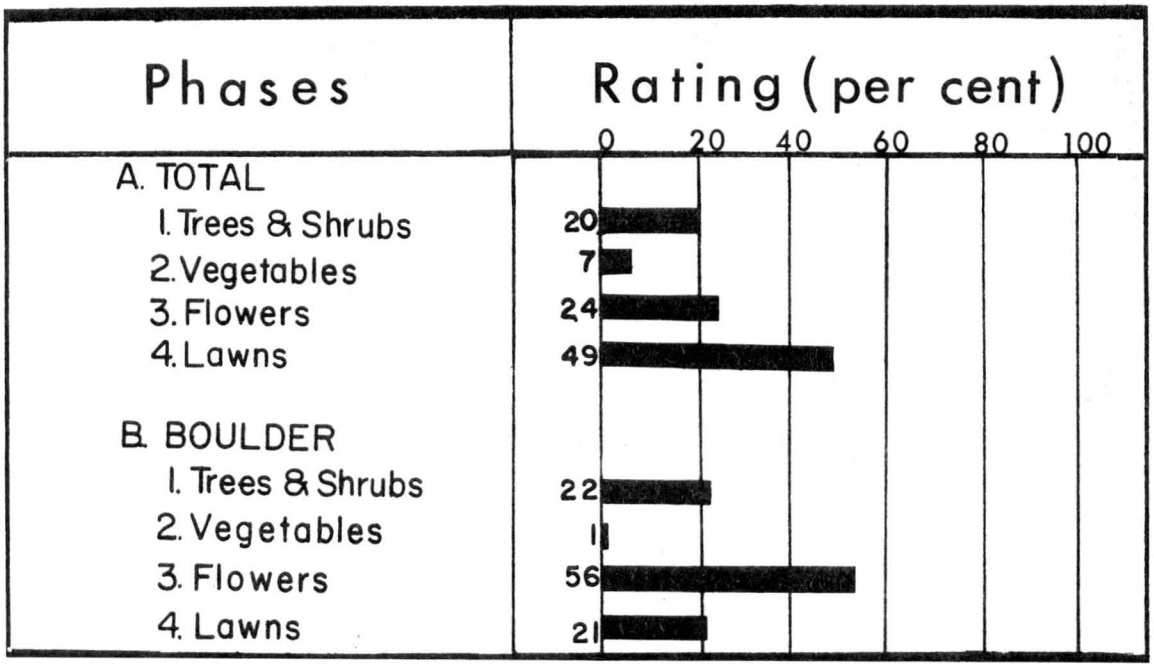
Phases That Cause the Most Problems

A comparison of the problems urban residents have with various phases of horticulture was similiar to Figure I. The ratings given here are proportional with the exception of "lawns". There was an increase of almost 20 per cent for the total of all areas surveyed. In the interviews with metropolitan Denver extension agents, "lawns" were considered the outstanding request to substantiate this tabulation.

An outbreak of a fungus disease "Melting-out" during the last 3 years (1958-1961) has caused some of the trouble. New lawn construction in new housing areas would develope some problems from seed-bed preparation to management. Because the bluegrasses are cool season grasses, the hot, dry summers have a harmful effect,

thus more problems. The list is endless but because the lawn is usually the first thing constructed at a new home or sometimes the only thing, more problems will naturally occur. Additional comparisons are made in Figure II.

Figure II. COMPARISON IN DIFFERENT URBAN AREAS OF WHAT PHASE OF PLANTS PRESENT THE MOST PROBLEMS TO RESPONDENTS LIVING IN THESE AREAS IN PER CENT OF REPLIES RECEIVED FROM ALL RESPONDENTS.

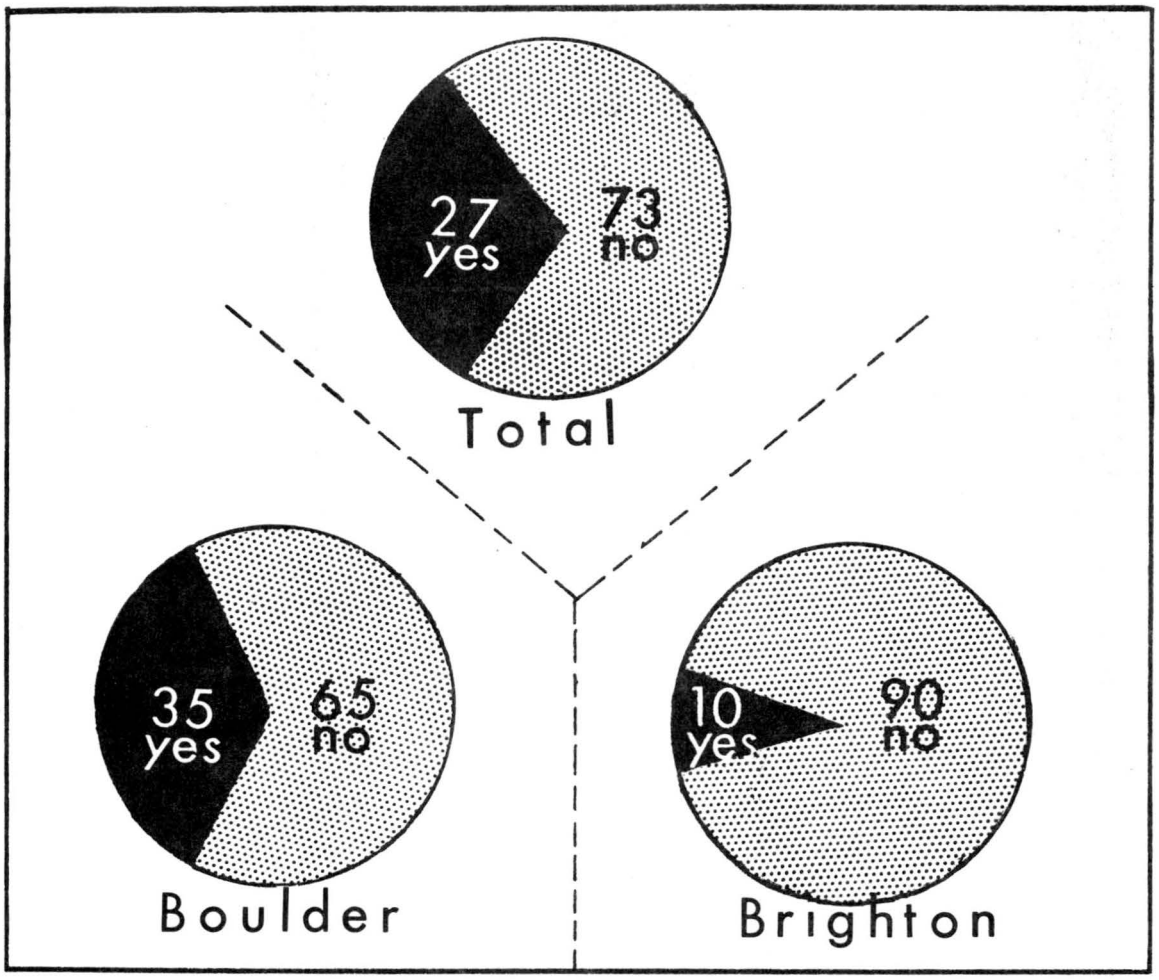


Sources of Horticulture Information

The preceeding discussion on the methods of presenting horticulture information emphasized the use of mass media. Radio, television and newspapers were considered

the most effective methods available. Respondents were asked whether they listened to regularly scheduled television programs on horticulture. Figure III indicates

Figure III. COMPARISON IN DIFFERENT URBAN AREAS OF WHETHER OR NOT THEY WATCH REGULARLY SCHEDULED TELEVISION PROGRAMS ON HORTICULTURE IN PER CENT OF REPLIES RECEIVED FROM ALL RESPONDENTS.



the tabulation for Boulder, Brighton and total for all areas. The same question was asked concerning radio broadcasts and

the results were quite similiar to television for the same three areas. It is interesting to note that the people in Brighton, with an agricultural based economy had only 10 per cent watching television and 9 per cent listening to radio. The garden club members had over 1/3 answer in the affirmative when asked if they watched regularly scheduled television broadcasts on horticulture. Twenty-seven per cent of all respondents indicated they watched these television broadcasts. In all instances the number watching television for horticulture information was less than half of those interviewed, the greatest being the 35 per cent for the garden club members. However, in examining the data from another viewpoint, of the 120,000 people in Adams County, a potential audience of 32,400 is probable. (This assumption was derived by multiplying the 27 per cent that answered affirmatively times 120,000 population.) If extension is responsible for these broadcasts then it may obligate the agent involved to establish plans that will insure professional presentations. If the number viewing a program receive information that is helpful, then extension has made friends.

To establish how radio and television rated

with other sources of horticulture information, respondents were quizzed on their use of twelve sources. Table II lists these sources and how they ranked to each other for

Table II. COMPARISON IN DIFFERENT URBAN AREAS OF SOURCES WHERE HORTICULTURAL INFORMATION IS OBTAINED IN PERCENT OF REPLIES RECEIVED FROM ALL RESPONDENTS.

Sources of Horticultural Information	In Percentage of replies received		
	All Areas 815 replies	Boulder 55 replies	Brighton 135 replies
Magazines	22	26	22
Friends	15	15	19
Newspapers	12	1	11
Garden Store Operators	11	7	9
Television	8	1	5
County Agent	8	2	14
College Bulletins	7	3	10
Commercial Bulletins	6	5	4
Radio	5	5	2
Meeting	3	31	1
Florists	2	-	3
Tours	1	4	-

Brighton, Boulder and all areas. "Magazines" were rated the highest in every instance except "meetings" for garden club members. However, the garden club members chose magazines 26 per cent of the time as a source of horticulture information. That was 4 per cent higher than

either Brighton or total areas rated "magazines". Television's highest rating was only 8 per cent for all areas, 5 per cent for Brighton and 1 per cent for Boulder. Radio rated even less with 5 per cent for both Boulder and total areas and 2 per cent for Brighton.

As a source of horticulture information, "friends" rated high. Boulder and total areas "sought friends advice" 15 per cent of the time while Brighton respondents used this source 19 per cent of the time. Even though information might originate within extension agent or office to a "friend" there is usually something "lost in the transmission". Misinformation occurs frequently, especially when unfamiliar terms are used. For example, when recommending insecticides, chemical or trade names are confusing to lay people. Therefore, every possible technic should be developed to insure clear and concise recommendations to prevent misinformation.

The total for all areas utilized four sources 60 per cent of the time, which were magazines, friends, newspapers and garden store operators. The remaining eight sources included the county agent which rated 8 per cent.

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In the Brighton total, four sources were referred to 66 per cent of the time. Three sources were the same as stated above for all areas; magazines, newspapers and friends. Fourteen per cent of those interviewed stated that the county agent was a source of horticulture information to be considered as one of the top four. Two points could explain why the county agent ranked higher in Brighton. The courthouse for Adams County is located in Brighton and the Adams County Extension office is located there. In addition, Brighton is located in the center of a large farming area that has utilized the services of the county agent for sometime. Therefore, people residing in Brighton are aware of extension and its services, whereas urban residents adjacent to Denver ordinarily would not know this.

In every instance magazines, newspapers and friends were among the four top choices as sources of horticulture information. Radio and television did not rate nearly as high, but possibly made people cognizant of certain facts. These same facts might have appeared later in a newspaper, or magazines and/or a friend spent time "over the back fence" discussing these statements.

Logically it seems that a combination of all forms of mass media would be most likely. Other findings support this theory, in that people will give credit to a newspaper article for solving their problem, yet had not the television or radio made them aware, the article would have been unread.

Reliability of Sources of Horticultural Information

Respondents were asked what source of information was the most reliable. The same sources listed in the preceeding question on where residents received the horticultural information were also possible here. Magazines, newspapers and friends ranked high as sources yet as a group were not as reliable as others.

An exception to this appeared in the Brighton respondents. The county agent with 24 per cent was first choice followed by 22 per cent for magazines, then 15 per cent for college bulletins and 13 per cent for friends. These four were considered the most reliable in 74 per cent of the replies. The remaining 8 sources were chosen slightly over one-fourth or 26 per cent of the time.

Three origins of horticultural information were

considered the most reliable to Boulder residents 74 per cent of the time. Table III shows three were meetings, magazines and friends with the percentages of 29, 28 and

Table III. COMPARISON IN DIFFERENT URBAN AREAS OF WHAT SOURCES OF HORTICULTURAL INFORMATION RESPONDENTS FOUND THE MOST RELIABLE IN PER CENT OF REPLIES AND IN ORDER OF REPLIES RECEIVED FROM ALL RESPONDENTS.

Sources of Horticultural Information	In Percentage of replies received All Areas 815 replies	Boulder 55 replies	Brighton 135 replies
Magazines	23	28	22
Friends	16	17	13
County Agent	11	2	24
Garden Store Operator	11	6	9
Newspapers	10	-	9
College Bulletins	9	3	15
Television	8	-	2
Meeting	4	29	1
Commercial Bulletins	3	7	3
Radio	3	5	1
Florists	1	-	1
Tours	1	3	-

17 respectively. Two per cent of the garden club members interviewed stated the county agent was considered reliable. However, in the preceeding question the county agent was utilized 2 per cent of the time as a source of horticultural information.

In the three areas compared, magazines, were either first or second choice as far as reliability was concerned. Also a common answer was friends, but it did not rank as high as did magazines. Additional comparisons of the reliability for the various sources of horticulture information are made in table III.

Sources provide enough Information to Solve Problems

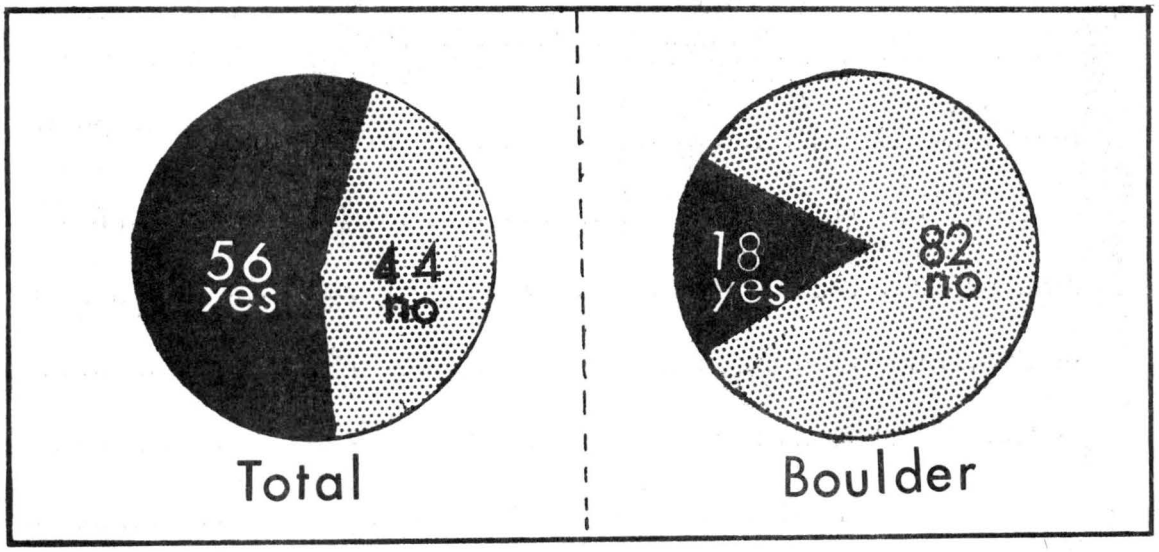
A question was asked to determine if problems encountered by urban residents were answered to their satisfaction. Using the twelve sources of horticulture information listed in the questionnaire as a basis, respondents answered "yes" or "no" to whether the knowledge obtained was enough to solve their problem.

The pie chart depicting total respondents was quite similiar to other groups except the Boulder residents, thus a comparison between these groups will suffice.

Over half of the total areas answered affirmatively with 56 per cent and Boulder had but 18 per cent that answered yes. In other words, eight out of ten times garden club members did not receive enough

information to solve their problem. Figure IV illustrates these comparisons for tabulations of Boulder and total for all respondents. These club members usually have a basic knowledge of horticulture and when problems

Figure IV. COMPARISON IN DIFFERENT URBAN AREAS OF WHETHER OR NOT THE SOURCES OF HORTICULTURAL INFORMATION PROVIDED ENOUGH ASSISTANCE TO SOLVE THEIR HORTICULTURE PROBLEMS IN PER CENT OF REPLIES RECEIVED.

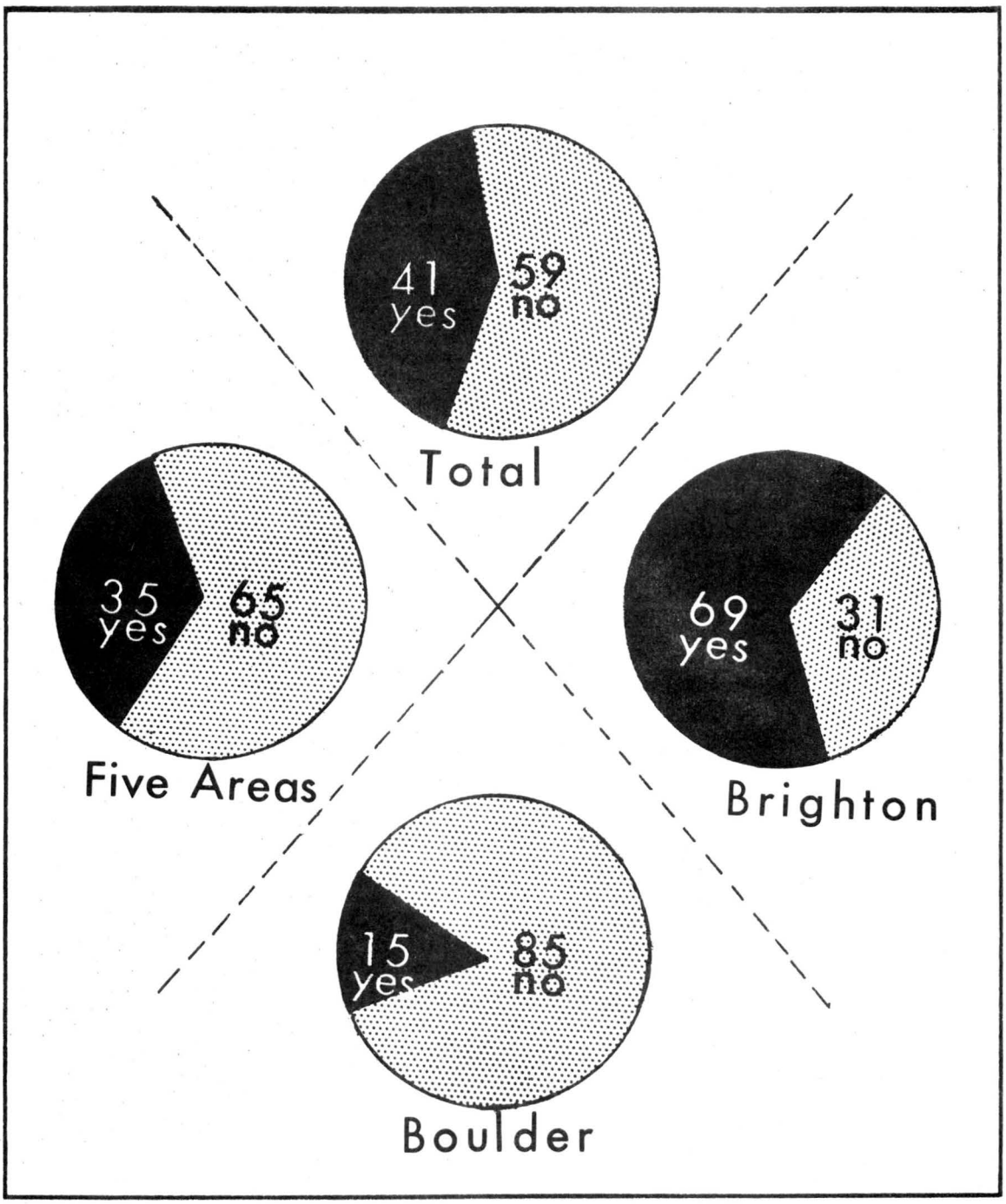


arise they are of a technical nature. To answer technical questions concerning horticulture might require a thorough knowledge of the subject. Few sources can boast of such individuals, thus this might explain why 8 out of 10 garden club members do not obtain enough information to solve their problem.

Urban people Aware of Services Available at Extension Offices

In the question concerning sources of horticulture information, the county agent rated quite low, with the exception of Brighton residents. In order to determine whether or not respondents were aware of the services available inquiry was made on this subject. The results varied for each breakdown in the master data sheet. Four subdivisions are shown in Figure V. There is a comparison or correlation between the rating of the county agent as a source of horticulture and being aware a service of this type was available locally. This might explain why the county agent was not utilized as a source of information. Sixty-nine per cent of the Brighton residents were aware of the services available and as table II indicated the county agent was considered a source of horticulture information 14 per cent of the time. Of the 55 garden club members only 8 or 15 per cent were aware of the services offered by the local extension office. Two per cent considered the county agent a source in table II. This further substantiates an earlier assumption that even though local extension offices are literally "snowed under" by calls concerning

Figure V. COMPARISON IN DIFFERENT URBAN AREAS ON WHETHER OR NOT RESPONDENTS WERE AWARE THE COUNTY AGENT COULD HELP WITH HORTICULTURAL PROBLEMS IN PER CENT OF REPLIES RECEIVED FROM ALL RESPONDENTS.



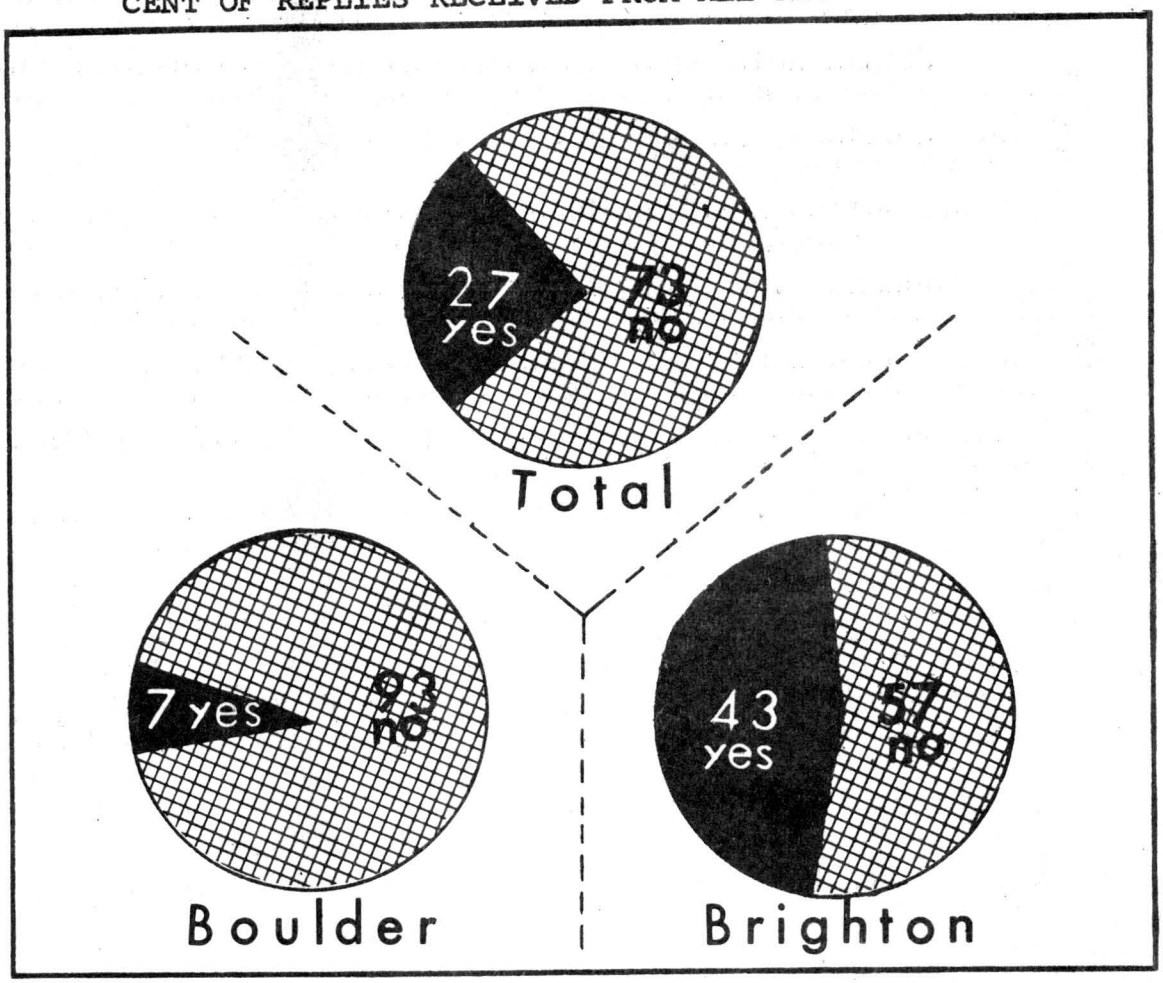
horticulture problems from the urban areas during the growing season, the majority of these residents are not even aware these services are available. If all the residents were aware of the local extension office, then how would it be able to maintain an effective flow of information with the existing extension staff.

A follow up to the preceeding question, was whether or not the county agent had been called for aid in answering their horticulture problems. Without exception all respondents in all areas surveyed had a smaller percentage actually calling the county agent then knew these services were available. Seven per cent of the garden club members had called the county agent, yet 15 per cent knew or were aware he was available. Total respondents were consistent with these figures, because 41 per cent knew about the county agent, but only 27 per cent had ever called for assistance from the extension office as shown in figure VI.

Many things might explain why this would happen. It might be that the gardener of the house worked and only had weekends off when the extension office was closed. "The phone was busy", "Agent out

of town for a few days" or "the garden store operator could answer the problem" would explain why the county

Figure VI. COMPARISON IN DIFFERENT URBAN AREAS OF WHETHER OR NOT RESPONDENTS HAD CALLED ON THE COUNTY AGENT FOR HELP WITH THEIR HORTICULTURAL PROBLEMS IN PER CENT OF REPLIES RECEIVED FROM ALL RESPONDENTS.



agent was not called, even though the individual knew these services were available.

CHAPTER V

SUMMARY

Extension's responsibility is to any who desire help in the United States, non-farm as well as rural. As the need arises it must be met and a solution developed prior to moving forward again. If extension does not assume this responsibility, another agency will likely be established to assume it.

One problem of utmost importance facing extension at present is horticulture calls originating in densely populated areas. They come during the growing season at the local extension office amid the confusion of a large number of similar requests. The nature of these requests has to do with horticulture in generalities and range from apple trees to rose bushes. To maintain the other programs in operation there is a need for methods of presenting horticulture information without increasing the size of the staff. Automatic equipment such as telephone answering sets has relieved some

of the burden. Another helpful aid was brief and concise publications that answer specific problems. Various other methods of dispersing horticultural information have been discussed to alleviate this situation.

The value of twelve sources of horticulture information were tabulated and analyzed as the results of a door to door survey in the urban areas. Magazines, friends and newspapers ranked in that order for their acceptance by the respondents as source of information. In the same list, radio and television, both rated quite low. Reliability of the identical twelve sources of horticulture information revealed magazines still a favorite. Meetings, friends and the county agent were considered more reliable than others in separate instances. The information obtained from these sources did not always provide enough assistance to answer the horticulture problem. Garden club members 8 out of 10 times did not receive enough information to solve their problem. Brighton residents, on the other hand, received enough help to aid them 53 per cent of the time.

To create awareness in people is somewhat difficult. The results of the survey substantiated this

to some degree. The tabulation of all areas indicated approximately 6 out of 10 persons did not realize the county agent could help with horticulture problems. Eighty-five per cent of the garden members did not realize these benefits. The majority of the Brighton residents were aware of the services available. Sixty-nine per cent answered affirmatively when asked if they knew the county agent could assist them with their horticulture problems.

Regardless of the number of respondents that were aware of the help the county agent could give them, an even smaller number had ever called on the extension office for help.

APPENDIX

TABLE OF CONTENTS

APPENDIX A

January 21, 1960

Jim Adams
Assistant County Agent
Court House
Brighton, Colorado

Dear Jim:

As Casper continues to grow (now 46,000), our urban situation be comes more acute. In the past we have made an effort to make calls in town to satisfy many of the demands. This has become too large a burden, so last year we tried something different.

Enclosed is a bulletin we prepared locally, containing answers to our most common questions. Any time we receive a telephone call regarding any of this information, we merely tell them we will put a bulletin in the mail for them. This is not only a decrease in home visits but saves time explaining situations over the phone. I don't know how our contacts compare with yours, but last year we had 6851 telephone calls, 5053 office calls, 250 radio programs and 356 farm visits. As you can see, we need to make more farm visits.

This same information was published during one full week in the local newspaper. Readers were asked to clip this information for future use. The use of the bulletin and news article saved us a considerable amount of time in 1959.

It was reaching the point where we had to do something in order that we might spend more time in rural areas. We need a horticulturist here!

If I can be of help, please let me know.

Sincerely,

Don D. Kaufman
County Agent
Agricultural Extension Service
DDK:eo

APPENDIX B

PERSONAL INTERVIEW

John Aldern - April 25, 1959

John Aldern, Program Director for radio station KZIX, Fort Collins, was interviewed on the use of communications. The following are his ideas on the subject.

There are no definite figures on how many people listen to the radio, it could only be an educated guess. People will never write in, even on "give-aways", but the majority of listeners will remark orally on their listening habits.

The letters received by radio stations are not necessarily from one age group or special interest groups. Usually the write-ins are from a cross section of the listening audience.

Good response from the public will come when there is an epidemic or out-break of some serious concern to them.

Short announcements that are 10 to 30 seconds in length are called "spots". Spots are becoming quite effective especially making the people aware. Once they

are aware, details of the incident should be found in the newspapers. For this reason it is best to use a combination among all media.

The most effective combination is the use of radio, television and newspapers to get something across. The radio will make the public aware orally, T.V. will make them visually aware and the newspaper will give a detailed follow-up of the radio and T.V.

Spots announcing week end programs are usually a public service. Public or timely information from the extension office would always be considered a public service.

APPENDIX C

PERSONAL INTERVIEW

Charles Lane - February 27, 1960

Arapahoe Extension Agent, Charles Lane, expressed his opinion on the effective methods of disseminating horticulture information and nature of requests during an interview at the Arapahoe County Extension Office in Littleton.

In Arapahoe County, the most effective method of disseminating horticultural information was the personal call. Personal calls were followed by radio and third, dealers meetings have proved quite successful. The extension office does not have a television program.

As an estimate, 90% of the questions the past season were on lawns. The bulk of the remainder were on trees and shrubs; specifically, insects, diseases and recommended varieties. The majority of these calls were from suburban areas. The outbreak of the fungus disease the past two years, did not effect the amount of calls in the office.

Two radio programs were maintained on separate stations. Each program consisted of a different subject. A wider range of timely horticultural subjects was presented to the listening public.

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APPENDIX D

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PERSONAL INTERVIEW

Stanley Stolte - February 26, 1960

The Jefferson County Extension Office utilized the following methods for disseminating horticultural information.

The most effective method the extension office used in disseminating horticultural information was single sheet subject matter handouts. These handouts are condensed and mimeographed in the office for distribution. The information for the handouts was taken from horticultural bulletins of U.S.D.A. or Colorado State University. These brief publications have met with favorable results, because of the competition for time in urban living.

Circular letters on horticultural subjects would follow the condensed handouts in importance. This proved to be quite efficient as far as time was concerned.

The next method, individual calls, were not efficient but effective. It was used whenever time allowed.

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Radio and television programs have not been used in Jefferson County to date.

Jefferson County's most important or the most sought after information is on the subject of lawns. This would include the care, planting and maintenance of the lawn. The next request that the office was called upon to answer, was general landscaping. This included yard planning, trees, shrubs, and flowers. Disease and insect problems ranked third with insects and their control the more important of the two.

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APPENDIX E

PERSONAL INTERVIEW

Herb Gundell - February 27, 1960

Denver Extension Agent, Herb Gundell, was interviewed at his office in the West-side Annex about the most effective methods in use for mass communications in Denver County. The latter part of the interview pertained to types of horticultural calls and how they were handled.

The most effective methods utilized in the Denver Extension Office were the use of newspaper, T.V., and radio. T.V. and newspapers reach more than radio, but radio is effective, too. Throughout the year, a T.V. show entitled "THE WEEK END GARDENER", a Saturday afternoon broadcast on the radio and a Sunday column on gardening in the magazine section of "THE DENVER POST", were maintained. During the growing season, we initiate a second radio program on another station.

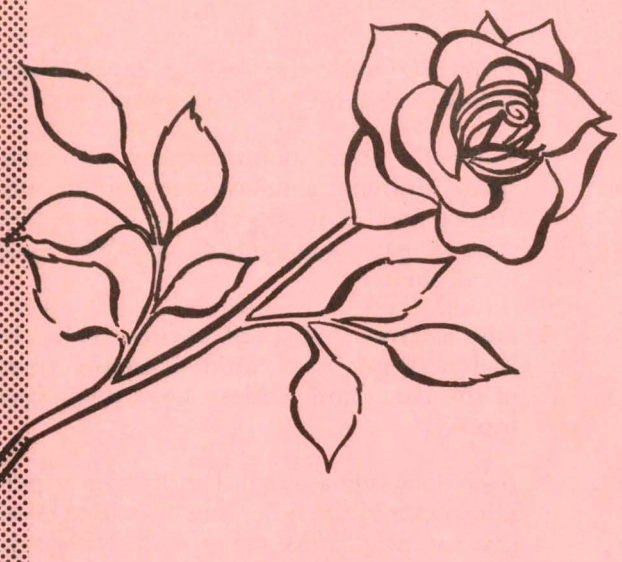
When outbreaks occurred, the office was called to give special broadcasts over T.V., and radio, with articles in the newspapers. To be effective, the same

material was used on all types of media simultaneously. That was more effective than dispersing four separate items at the same time.

Horticultural calls, in generalities, were the prime requests. They included house plants in the winter, planting care in the spring, lawn work through the summer, and perhaps fall care of ornamentals. The office does not have one call at any time of the year more than another, with the exception that the lawns were perhaps the most outstanding call. The public wants timely information and not something that will concern them in six weeks.

Most of the calls have come in over the phone and this was almost as effective as the personal calls. Personal calls to a certain extent have to be done, but they are quite inefficient, with the vast amount of population in the Denver area it would be impossible to maintain all of the calls through the personal basis.

APPENDIX F



10 STEPS TO GOOD *Roses*

COOPERATIVE EXTENSION SERVICE

COLORADO STATE UNIVERSITY

In cooperation with Adams, Arapahoe, Denver and Jefferson Counties

Ten Steps to Good Roses

1. Purchase only the best western-grown Grade No. 1 un-waxed nursery stock.

2. Carefully select planting site with adequate drainage and average garden soil. Insure good sun exposure at least a portion of each day and, if possible, some wind shelter.

3. Dig a large hole (20 inches wide, 18 inches deep) to accommodate the roots of the rose plant without crowding. Save topsoil.

4. After placing a small handful of superphosphate in the hole, mix one-third good quality peat moss generously with topsoil and build a mound in the bottom of the hole with the mixture.

5. Place rose roots on mound so the bud or graft union is at normal ground level or slightly below.

6. Fill hole two-thirds full with more soil-peat moss mixture, then water slowly to settle soil around roots and eliminate air pockets.

7. Add more soil, repeat watering, then cover entire plant with a mound of soil for protection from severe weather.

8. Start spraying for powdery mildew, aphids, and spider mites as soon as new leaves and shoots develop. Spray every 7 to 10 days. Any one of the following three sprays provides good disease and insect control:

   1 teaspoon 55% Malathion (emulsifiable concentrate) plus 5 teaspoons Acti-dione PM per gallon of water.

   1 teaspoon 55% Malathion (EC) plus 1 tablespoon wettable sulphur per gallon of water.

   3 teaspoons of 55% Malathion (EC) plus 2 teaspoons Karathane WD per 3 gallons of water.

9. Water roses deeply, but infrequently.

10. Remove wilted blossoms and cut to first 5-leaflet leaf to force sound new growth. Prune established roses after April 25 each year.

●

Suggested Varieties

Here are some rose varieties well adopted to the Denver metropolitan area. Check with your nurseryman for additional recommendations.

Hybrid Teas:

Peace, yellow blend
Crimson Glory, red
Chrysler Imperial, dark red
Charlotte Armstrong, medium red
Tiffany, pink blend
Mme. Henri Guillot, red blend
Lowell Thomas, dark yellow
Showgirl, medium pink
Helen Traubel, pink blend
Mojave, orange blend
Rex Anderson, white

Floribundas:

Vogue, pink blend
Fashion, pink blend
Pinocchio, pink blend
Ivory Fashion, white
Spartan, medium red
Fusilier, red
Floradora, medium red
Circus, orange blend
Goldilocks, yellow

Climbers:

Paul's Scarlet, red
Blaze, red
New Dawn, light pink

Grandifloras:

Caroussel, dark red
Queen Elizabeth, medium pink
Montezuma, light red
Starfire, medium red
Roundelay, dark red

Bush Roses:

Dr. VanFleet, pink
Doubloons, yellow
Austrian Copper, orange red
Harrison's Yellow, yellow

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APPENDIX G

LEARN MORE ABOUT GARDENING

Help improve the way you learn about it. Place an (X) in the proper blanks and return to:

The results of this survey will be used to plan improved programs for the gardner.

Horticulture, in this survey, means the art of growing fruits, vegetables, trees, shrubs, flowers and grass in a yard, garden or orchard.

Jim Adams
County Agents Office
Brighton, Colorado

A. Which age group are you in?

_____ (1) Under 30

_____ (2) 31 to 40

_____ (3) 41 to 50

_____ (4) Over 50

B. Do you belong to a garden club?

_____ (5) Yes

_____ (6) No

C. How many years have you actually raised plants related to horticulture?

_____ (7) Under 5 years

_____ (8) 5 to 10 years

_____ (9) 10 to 20 years

_____ (10) Over 20 years

D. In which phases of horticulture are you primarily interested?

_____ (11) flowers

_____ (12) vegetables

_____ (13) trees and shrubs

_____ (14) lawns

E. In what season of the year do you have most of your horticultural problems?

_____ (15) Spring

_____ (16) Summer

_____ (17) Fall

_____ (18) Winter

F. Do you listen to the regularly scheduled radio broadcasts concerning horticulture?

_____ (19) Yes

_____ (20) No

G. Do you watch the regular television horticultural programs?

_____ (21) Yes

_____ (22) No

H. In which horticultural areas do you have the most problems?

_____ (23) flowers

_____ (24) vegetables

_____ (25) trees and shrubs

_____ (26) lawns

I. From what sources do you learn about gardening, lawn care and other horticultural problems?

_____ (27) Magazines

_____ (28) Newspapers

_____ (29) Radio

_____ (30) Agricultural College bulletins & leaflets

_____ (31) Bulletins & leaflets by commercial companies

_____ (32) Seed and garden store operators

_____ (33) Florists

_____ (34) Television

_____ (35) County Agent

_____ (36) Friends

_____ (37) Meetings

_____ (38) Tours

J. Which do you find most reliable?

_____ (39) Magazines

_____ (40) Newspapers

_____ (41) Radio

_____ (42) Agricultural College bulletins & leaflets

_____ (43) Bulletins & leaflets by commercial companies

_____ (44) Seed and garden store operators

_____ (45) Florists

_____ (46) Television

_____ (47) County Agent

_____ (48) Friends

_____ (49) Meetings

_____ (50) Tours

K. Did the information obtained from the above sources provide enough information to solve your problem?

_____ (51) Yes

_____ (52) No

L. Do you know how the County Agent can help you with your horticultural problems?

_____ (53) Yes

_____ (54) No

M. Have you ever called upon the County Agent for help with horticultural problems?

_____ (55) Yes

_____ (56) No

APPENDIX H

MASTER DATA SHEET

Responses to a gardening questionnaire involving six urban areas of Adams County, Colorado, and fifty five garden club members of Boulder, Colorado. (Based on number and percentage of replies)

	GRAND TOTAL		FIVE* AREAS		BRIGHTON		BOULDER		AGE GROUPS 0 to 30		AGE GROUPS 31 to 40		AGE GROUPS OVER 41		YRS. PLANTS GROWN OVER 5		YRS. PLANTS GROWN 0 to 5	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
A. What age group are you in?																		
(1) Under 30	297	36	213	37	74	39	10	18	-	-	-	-	-	-	76	18	223	57
(2) 31 to 40	307	38	242	42	53	28	12	22	-	-	-	-	-	-	190	44	117	30
(3 & 4) Over 41	211	26	117	21	61	23	23	60	-	-	-	-	-	-	161	38	51	13
B. Do you belong to a garden club?																		
(5) Yes	71	9	13	2	3	2	55	100	14	5	21	7	36	17	51	12	20	5
(6) No	744	91	559	98	185	98	-	-	283	95	286	93	175	83	376	88	368	95
C. Years actually raised plants related to horticulture.																		
(7) Under 5 years	387	47	298	52	79	42	10	18	222	75	116	38	49	23	-	-	-	-
(8, 9 & 10) Over 5 years	428	53	274	48	109	58	45	72	75	25	191	62	162	77	-	-	-	-
D. In which phases of horticulture are you primarily interested?																		
(11) Flowers	509	35	342	33	121	36	46	51	175	35	191	33	143	38	282	34	227	36
(12) Vegetables	133	9	100	10	27	8	6	6	39	8	55	10	39	10	98	12	48	7
(13) Trees and shrubs	364	25	276	27	67	20	21	23	133	27	146	25	85	23	211	26	153	24
(14) Lawns	442	31	304	30	120	36	18	20	148	30	185	32	109	29	235	28	207	33
E. Season of the year for horticultural problems?																		
(15) Spring	248	26	178	28	61	25	9	15	90	27	101	30	57	22	105	22	143	31
(16) Summer	518	55	344	54	129	53	45	78	193	57	186	55	139	53	269	57	249	53
(17) Fall	98	11	61	10	33	13	4	7	22	6	38	11	40	15	64	13	34	8
(18) Winter	72	8	49	8	23	9	-	-	33	10	14	4	25	10	38	8	34	8
F. Listen to radio broadcasts concerning horticulture?																		
(19) Yes	196	24	160	28	16	9	20	36	63	21	71	23	62	29	100	23	96	25
(20) No	619	76	412	72	172	91	35	64	234	79	236	77	149	71	327	77	293	75
G. Watch television programs concerning horticulture?																		
(21) Yes	219	27	181	32	19	10	19	35	72	24	78	25	69	33	122	29	97	25
(22) No	596	73	391	68	169	90	36	65	225	76	229	75	142	67	305	71	292	75
H. Problem areas of horticulture?																		
(23) Flowers	227	24	132	22	57	25	38	56	94	28	65	19	68	26	106	15	121	28
(24) Vegetables	65	7	1	-	19	8	1	1	17	5	26	7	22	9	138	19	33	7
(25) Trees and shrubs	187	20	127	21	45	20	15	22	61	18	68	20	58	22	112	16	75	17
(26) Lawns	465	49	342	57	109	47	14	21	166	49	188	54	111	43	363	50	214	48
I. Sources of information concerning horticulture?																		
(27) Magazines	464	22	305	22	116	22	43	26	143	18	168	22	146	24	232	20	222	21
(28) Newspapers	250	12	190	14	58	11	2	1	70	9	105	13	75	13	145	13	105	9
(29) Radio	106	5	87	6	10	2	9	5	42	5	30	4	34	6	52	4	54	5
(30) College bulletins	146	7	88	7	53	10	5	3	48	6	59	8	37	6	95	8	51	5
(31) Commercial bulletins	114	6	85	6	21	4	8	5	51	7	38	5	25	4	53	5	61	6
(32) Garden store operators	222	11	162	12	49	9	11	7	93	13	74	9	54	9	103	9	119	11
(33) Florists	41	2	27	2	14	3	-	-	16	2	12	2	15	2	22	2	19	2
(34) Television	171	8	142	10	27	5	2	1	63	8	65	8	43	7	87	7	84	8
(35) County Agent	162	8	82	6	76	14	4	2	49	6	68	9	45	7	101	9	145	13
(36) Friends	298	15	174	13	99	19	25	15	196	25	139	18	80	14	207	18	208	19
(37) Meetings	64	3	8	1	6	1	50	31	10	1	18	2	36	6	52	4	12	1
(38) Tours	14	1	6	1	1	-	7	4	1	-	4	-	9	2	12	1	2	-
J. Reliable horticultural information?																		
(39) Magazines	304	23	199	23	61	22	44	28	87	20	121	26	96	25	168	23	136	23
(40) Newspapers	133	10	105	12	27	9	1	-	43	10	60	13	30	8	67	9	66	11
(41) Radio	44	3	33	4	3	1	8	5	14	3	15	3	15	4	27	4	17	3
(42) College bulletins	113	9	67	8	41	15	5	3	38	9	46	10	31	8	77	11	36	6
(43) Commercial bulletins	46	3	27	3	8	3	11	7	17	4	15	3	14	4	31	4	15	3
(44) Garden store operators	140	11	105	12	25	9	10	6	55	13	42	9	43	11	65	9	75	13
(45) Florists	13	1	10	1	3	1	-	-	4	-	6	1	3	1	3	-	10	2
(46) Television	98	8	91	11	6	2	1	-	37	8	35	7	26	7	47	7	53	9
(47) County Agent	142	11	70	8	68	24	4	2	44	10	55	12	43	9	87	12	55	9
(48) Friends	214	16	152	18	36	13	26	17	98	21	64	13	56	14	98	14	116	20
(49) Meetings	54	4	4	-	3	1	47	29	9	2	15	3	30	8	43	6	11	1
(50) Tours	6	1	1	-	-	-	5	3	1	-	2	-	3	1	5	1	1	-
K. Did information solve problem?																		
(51) Yes	455	56	346	60	99	53	10	18	177	60	186	61	92	44	220	52	236	61
(52) No	360	44	226	40	89	47	45	82	120	40	121	39	119	56	207	48	153	39
L. Did you know County Agent can help you with horticulture problems?																		
(53) Yes	336	41	198	35	130	69	8	15	113	38	133	43	90	43	187	44	149	38
(54) No	479	59	374	65	58	31	47	85	184	62	174	57	121	57	240	56	240	62
M. Call County Agent for help with horticulture problems?																		
(55) Yes	221	27	136	24	81	43	4	7	53	18	107	35	61	29	118	28	104	27
(56) No	594	73	436	76	107	57	51	93	244	82	200	65	150	71	309	72	285	73

* The urban areas of Adams County which are adjacent to Denver will be referred to as the five areas. These areas are Westminster, Thornton, Derby, Adams City, and Aurora.

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