

HORTICULTURAL SKILL RATINGS, DEMOGRAPHIC CHARACTERISTICS,  
ECONOMIC ASPECTS, AND SOCIAL BEHAVIORS OF COMMUNITY GARDENERS

by

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## INTRODUCTION

A major concern among horticulturists who manage community gardening programs is the rate of plot abandonment and the associated failure of beginning gardeners to return to gardening a second year. In 1981 the reported U.S. rate of community garden plot abandonment was 14% (5).

People are primarily motivated to garden by potential savings on food costs, according to a Gallup Organization survey of American home gardening in 1978 (6). This survey estimated approximately 3 million households to be gardening for the first time ever, and reported that these new gardeners tended to be motivated by expectations of "fun and joy" from their gardens. This study also reported that out of a total increase of 4 million households gardening in 1978, 2 million failed to garden a second year for one of three equally frequent reasons: illness/death; loss of land access; failure of the garden to meet expectations.

Potentially a third of non-returning new gardeners might be encouraged to maintain their effort and/or try again if garden managers could assist in formulation of realistic expectations of success; and could further assure realization of expectations through managerial interventions.

A review of the literature suggests that success may be defined in various ways. One of the most frequently used definitions is that of dollar savings. Estimates since 1975 have ranged from -\$9.44 to \$7.65 per m<sup>2</sup>. (Basis for estimate varies

widely. See Table 1.) A 1978 evaluation of the Detroit urban gardening program (1) identified previous gardening experience as having a direct influence on dollar savings realized. Clark (2) cited such horticultural skill indicators as correct cultural methods, absence of weeds, insect damage or disease in June gardens as indirect influences on savings.

While dollar savings provide an objective measure of success, gardeners themselves may define success in terms of subjective, experiential rewards. In a study of home, communal, and community gardeners, Kaplan (7) measured gardener satisfaction in terms of the variables Primary Garden Experience, Sustained Interest, and Tangible Benefits. Items comprising a Sustained Interest Scale were interpreted by Kaplan as reflecting a gardening motivator which she termed "fascination", and which she considered akin to the concept of "involuntary fascination" described by psychologist William James.

The presence of a fascination variable was strongly supported in a survey of members of the American Horticultural Society in 1976 (8). Themes relating to satisfaction with gardening were grouped and rated on a five point scale. Items relating to "peace and quiet", "sensory (aspects)", "novelty", and "attention/fascination" averaged  $\geq 4.1$  in contrast to a mean of 3.4 on items specifying tangible benefits (food production). Gardeners in this sample seemingly found their major rewards in non-tangible aspects of gardening. (It should be noted that the AHS survey population

was self-selected for gardening experience by virtue of their membership in the organization.)

As already noted, first time gardeners report themselves to be attracted by the promise of non-tangible rewards, to which experienced gardeners attest; subsequently, some portion of new gardeners fails to realize those rewards. If non-tangible, experiential rewards can be shown to influence garden success, and further can be operationally defined, community garden managers could begin to devise strategies to maintain initial motivation through the necessary period of learning to garden.

#### OBJECTIVE OF THE STUDY

The objective of this study was to examine potential variables influencing garden success, specifically: (a) horticultural skill indicators; (b) demographic characteristics; and (c) non-tangible factors such as gardener satisfaction.

#### MATERIALS AND METHODS

Subjects of the study were Manhattan, KS residents who rented one or more 37 m<sup>2</sup> plot from the Manhattan Community Gardens during the March-October gardening seasons in the years 1979-1981.

##### Horticultural Skill Indicators

One hundred and twenty-one plots were rated in July, 1979 for eight characteristics of a horticulturally successful garden. The characteristics were treated as equally important and were noted as

"2" (demonstrated) or as "1" (did not demonstrate the characteristic). The maximum possible points a gardener could earn by this scoring was 16; the minimum was 8. Scores for gardeners who rented more than one plot were averaged. The items were as follows:

(Gardener) 1. Cleans up litter and trash; 2. Controls weeds; 3. Picks crops when ripe; 4. Uses  $\geq$  90% of space; 5. Crops continuously (at least Spring/Summer or Summer/Fall crops in evidence); 6. Spaces properly for the method used; 7. Keeps plants free of insects and damage; 8. Keeps plants generally healthy.

Items for rating were selected in consultation with an Extension vegetable specialist. Basis for judgement included recommended spacings for conventional and intensive plantings (9, 10); familiarity with common vegetable pests and nutrient deficiency/pathology symptoms; and familiarity with soil and soil moisture conditions in the Manhattan Community Gardens. Examples of the latter are allowance for minor acceptable variations in crop spacing, or ability to distinguish normal mid-day wilt from that caused by inadequate irrigation. Based on the eight Horticultural Skill indicator rankings, the following aggregates were used to classify garden appearance:

High Skill	between 6 & 8 correct practices	14-16 points
Medium Skill	between 3 & 5 correct practices	11-13 points
Low Skill	between 0 & 2 correct practices	8-10 points

1980 was a year of severe and early drought and no plot ratings were taken. An additional 30 plots were randomly selected

and rated in September, 1981 by the same rater, using the same criteria.

#### Demographic Characteristics

Information on gardener yearly income, family size, total plot area and years of gardening experience was obtained from plot applications for 1979 and 1980 gardeners and from 1979 survey responses. (As noted, due to weather conditions, ratings and survey were not repeated for 1980 gardeners.)

#### Survey Data

1979 gardeners voluntarily participated in a written questionnaire survey (57 responses) consisting of 25 items requiring gardeners to circle, check or write in answers which most nearly described their experience; some items were "forced choice" constructions. Items solicited information on: years' gardening experience and on gardening education; disposition of surplus; crops grown; number trips and number hours per week in the garden; expenditures and savings; and problems. A second group of items ascertained rates of participation in the garden support system, which included free tools and equipment, mulch, plants and seeds, technical assistance, and social events. A third group of items elicited gardener opinions of their experience in relation to other gardeners, gardening per se, and gardening in the Manhattan Community Gardens.



## RESULTS AND DISCUSSION

### Horticultural Skill

For 1979 community gardeners, the mean garden score, based on Horticultural Skill item rankings, was  $12.63 \pm 2.12$ . Scores were normally distributed, with 25% of the gardens classified in the High Skill category, 58% in the Medium Skill category, and 17% in the Low Skill category. Therefore, based upon the mean and standard deviation of the aggregate scores, the system used in classifying gardens in this study would appear to be representative.

As shown in Table 2, correlations among the Horticultural Skill ranking items indicate a significant correlation between Controls weeds ( $Y_2$ ) and Crops continuously ( $Y_5$ ); no other significant correlations among  $Y_1$  through  $Y_8$  were found. This suggests that at least seven Horticultural Skill ranking items were measuring unique cultural functions which contribute to success.

A subset of 1979 gardeners was compared, item by item, with a sample of 1981 gardeners for each of the skill categories. As may be seen in Table 3, High Skill plots were generally consistent among items over the two years. However, 1979 and 1981 Medium and Low Skill categories diverged on some items. The most striking difference occurs in item 5, Crops continuously. The explanation may lie in the time of rating (less evidence of crop succession in September, 1981). However, no such difference occurred with the High Skill plots on this item, and a much smaller difference occurred with the Medium Skill plots in each year. A liklier

explanation may be inherent in the definition of the categories. We might suppose that the Low Skill gardeners were still trying in July, 1979, despite already experiencing some failures with spring crops, but would not have attempted fall plantings. In that instance the percentage demonstrating summer/fall successions would have been lower if recorded again in September, 1979.

The 76 gardeners in 1979 who managed the ranked plots were subsequently categorized, on the basis of their plot average score, into High, Medium and Low Skill gardeners.

#### Gardener Characteristics and Resources

Mean garden size for 1979 gardeners was  $61.2 \text{ m}^2$ ; in 1980 area gardened was slightly smaller ( $\bar{X} = 54.2 \text{ m}^2$ ). Mean number of plots in 1979 was 2; in 1980 it was slightly less ( $\bar{X} = 1.4$ ). Total plot area was described as the "same size" or "smaller" than previous gardens by 75.3% of survey respondents; 33.3% described their 1979 garden as producing the "best yield", and an additional 51.1% considered their yield to be "about the same" as previous years.

Mean family size of 1979 gardeners was 4.1 persons; in 1980 it dropped to 2.7. Gardeners reported a wide range of yearly income in 1979 and 1980, from "no income" to \$35,000 per annum. The mean family income of 1979 and 1980 gardeners was \$9,759 and \$11,065 respectively. The majority of 1979 gardeners were new to the Manhattan Community Gardens ( $\bar{X}$  number seasons = 1.7), but the mean number of years' gardening experience was 10 (range 1-57 years).

On a multiple response survey item, gardeners reported learning to garden from family and friends (34%); learning by trial and

error (33%), reading gardening publications (25%) and attending classes (8%).

#### Gardener Investment and Savings

The garden management provided free bedding plants and some seed in 1979 and 1980. In 1979 less than a quarter of the gardeners accepted the free plants. In 1980 free plants were available only to low income gardeners; others could purchase them at cost. (Availability was more widely publicized in 1980, therefore rate of use is not considered meaningful for comparison.) In 1979, hand tools, a rototiller and wheelbarrow were available to all gardeners but only 18 (32%) of survey respondents reported using them; 72% of the others reported that they didn't need the items and the remainder found it too inconvenient to obtain them, or didn't know they were available. While most gardeners did not take advantage of the free plants, seed and tools/equipment, most (60%) reported sharing their own with other gardeners.

Horticultural Skill rank was compared against gardener behaviors, as recorded by the survey, for 25 gardeners in 1979. As shown in Table 4, significant difference among High, Medium and Low Skill gardeners existed in their use of free supplies and equipment. Low and Medium Skill gardeners did not accept the items, while High Skill gardeners were evenly divided. As noted, publicity on availability of the items was not as systematic, therefore probably not as effective, in 1979 as in subsequent years. Differences among the skill categories may be at least partially attributable to this

factor. Low Skill gardeners reflect plot neglect in their scores, from which we might assume that they simply weren't in the garden often enough to discover the items or to get them before someone else did. Medium Skill gardeners might have done advanced planning for garden needs to the extent that there was no room or need for the free items. Some High Skill gardeners may have felt sufficiently confident to experiment, e.g. using mulch or an extra crop, or simply had the capacity to be resourceful with whatever was offered.

All High Skill gardeners shared their surplus with others, as shown in Table 5. Low Skill gardeners tended not to share (71%) while 65% of Medium Skill gardeners did share. The difference may merely reflect greater surplus available to the better gardeners. No other differences among skill categories were found for any of the variables reported.

The majority of survey respondents (67%) reported spending an average of two hours ( $\leq 4$ ) in their gardens, accumulating that time in the course of two to three trips per week (54%). See Table 6 for these frequencies.

Ten of the 1979 gardeners reported keeping records of expenditure. Mean per garden was  $\$40 \pm \$27$ ; this figure included items the gardener perceived as expenses, and did not include transportation in every case. Expenditures were estimated by an additional 47 gardeners. As presented in Table 7, the majority estimated expenditure at slightly over half that reported by gardeners who kept records. The record-keeping gardeners are probably more

accurate in their report but they are too few for any certainty.

All survey respondents estimated their savings on food costs; 51% reported an estimate of \$50 or less saved (Table 7). This 51% included 11 gardeners (19.3%) who saved no money; of these, six attributed their lack of success to themselves, (e.g. failed to invest the necessary effort or made errors); four blamed the weather, poor seed, etc., and one blamed the garden management.

After reporting on expenditure and savings, survey respondents were asked if they would have a garden again even if they could not save any money on food costs by doing so; 92.5% reported that they would have a garden again even under the no-financial-gain stipulation. Respondents were also asked how they felt about their gardens. Only three gardeners (4%) reported feeling "generally displeased" with their gardens. The majority (53%) felt "generally proud" and 43% reported feeling "very proud".

#### Garden Production

Gardeners grew a range of crops; two gardens were used for a single crop and at the other extreme one gardener reported raising a total of 32 crop species. The mean number of crops per garden was 12.6. Tomatoes, beans and cole crops were the most frequently grown vegetables. See Table 8 for crop frequencies.

Multiple uses of surplus were recorded. No gardener reported using all garden produce immediately. Surplus produce was preserved 63% of the time; given away 27%; not picked or thrown away 8% and sold 2%. Preserving included: freezing 24%; canning 22%;

cool storage 12% and drying 5%.

#### Gardener Problems

Survey respondents were asked to select from a list the "single most troublesome aspect" of their Manhattan Community Gardens plot. Most respondents checked more than one item. (This was the only item for which respondents did not follow instructions, suggesting that they found it impossible to isolate a single problem.) Lack of time to tend the garden was identified most frequently (47.5%) followed by insect pests and plant diseases (42.1%) and weeds (15.8%). Vandalism/theft, neighboring community gardeners and weather were identified less often (12.3%, 10.5% and 7.1% respectively).

While the study did not address itself to the issue of distance of the garden from home, 13 survey respondents commented on this problem. These writers identified the distance as adding to time and financial investment, or stated they would have preferred to invest shorter, more frequent work periods, (e.g. "20 minutes here and there") than was possible given the distance. Three of the latter specifically stated that the effect of distance was detrimental to the quality of their gardens.

#### Home versus Community Garden Preference

A forced choice survey item required gardeners to indicate whether they would choose a Manhattan Community Gardens plot over an identical one at their homes. Only 27.5% chose the Manhattan Community Gardens plot. Those 16 gardeners were then asked to

identify any and all reasons for their choice from a provided list. In addition to the six possible reasons for preference offered by this list, respondents could write in reasons. Three persons did, citing "Sunshine, fresh air and exercise", and "It's a therapeutically sound activity for our family!" The third stated his/her belief that everyone should have access to a garden. An additional four persons, who indicated they would prefer a home garden, nevertheless wrote in comments on aspects of the community garden they liked. One was appreciative of the garden services (advice and mulch); one checked the listed reasons as follows: "Social contact"; "Community feeling"; "Having other gardeners near"; "Save on expenses" and "Watch other gardens". A third person commented that "The social aspects of community gardening are excellent", and a fourth "enjoyed getting to know other gardeners and talking about gardening".

The most frequently chosen reason for preferring the Manhattan Community Gardens, as shown in Table 9, was "Like watching other gardens", followed by "Like having other gardeners nearby". "Enjoyment of social contact/new acquaintances" and "Save money on expenses" were chosen equally often. "Get good feeling of community" and "Have ties to neighborhood" were the least frequently chosen reasons.

The gardeners who would choose to garden again in the Manhattan Community Gardens were a more experienced group than the responding gardeners overall. Mean years' gardening experience for the former

was 20 (median = 14 years) in contrast to a mean of 10 for all survey respondents. Among gardeners who would prefer to garden at home, the mean years of experience was 8 years (median = 5 years).

#### Manhattan Community Gardener Profile

Based on the frequency data, the Manhattan Community Gardener in 1979 can be described as follows:

1. demonstrated three to five of eight evaluative horticultural practices correctly;
2. was new to the Manhattan Community Gardens but had gardened for 10 years, having learned to garden from family or friends and by trial and error;
3. used his/her own supplies and tools and lent these to other community gardeners;
4. spent two hours a week in the garden over the course of two to three trips weekly;
5. spent approximately \$25 to raise 12.6 crop varieties on  $61.2 \text{ m}^2$ , and saved  $\$0.68/\text{m}^2$  on food costs by preserving surplus for the use of a family of four, living on a per annum income of \$9,759;
6. felt generally proud of his/her garden;
7. will garden again even if no money can be saved thereby;
8. found time to garden to be his/her worst problem;
9. would prefer a garden at home.

#### CONCLUSION

On the whole, daily involvement in the gardens was rather low,



as indicated by the number of trips and amount of time spent; this was further indicated by the low amounts saved on food costs and by complaints of lack of time to tend the gardens. Yet most gardeners felt proud of their efforts and believed gardening was worthwhile for reasons other than direct dollar savings on food.

The study thus tends to confirm Kaplan's findings (6, 7) that non-tangible rewards motivate experienced gardeners. The 92.5% of 1979 Manhattan Community Gardeners who found gardening rewarding, apart from its economic aspects, far exceeds the 51% reported for American home gardeners in 1981 (11).

The use of  
as the one devised for this study, could assist garden managers in identifying gardeners whose practices put them "at risk" for discouragement. Such gardeners could then be targeted for appropriate technical assistance, as well as for assistance in realizing some less tangible rewards. For example, the garden manager could assure that an experienced gardener near the "at risk" gardener becomes acquainted for the purpose of "talking gardening". The social/informational exchange that would take place might be sufficient to maintain the initial motivation of the "at risk" gardener.

#### SUGGESTED FURTHER RESEARCH

The horticultural skill scoring system requires further testing through application by a panel of raters, and requires

validation on some objective basis, such as quality and weight of produce from gardens. In addition, if scoring were treated as a continuous variable, relative weights of the 8 scoring items could be evaluated for their contribution to the plot score.

Similarly, the list of desiderata unique to a community garden should be examined in greater detail to determine the uniqueness of each desirable aspect. (It may be that there are only two: social opportunities with other gardeners; and a way to save on garden expenses.) The social opportunities should be examined in more detail, as well. Information on number of other gardeners known by name and location in garden, number and type of contacts with the garden manager, time spent alone working in plot, and time spent working with family or friend brought to the garden, and similar data, will assist in clarifying the nature of the non-tangible rewards to which gardeners respond.

Larger samples than were available to this study should be taken from more than one community garden site. Horticultural skill ratings should be made at multiple intervals during the season at times when the gardeners are converting from cool to warm season crops. (In NE Kansas this would call for ratings in May and July.) A third rating should be done just prior to the last major harvest period, (early September in NE Kansas), as a comparison against the May rating, as well as to confirm patterns of neglect which may only be incipient in July.

Interviews with at least a small sample of gardeners should be conducted in April. The sample should be selected for representativeness on the following: years of gardening experience; distance of home from garden; self-rating on horticultural skill; reason for renting a community garden plot; and attitude to gardening (for fun as opposed to for economic reasons).

Table 1. Comparisons of reported U.S. per square unit vegetable garden return estimates from 1975-1982.

<u>Reference and Year</u>	<u>Garden Size</u>		<u>Garden Return</u>	
			<u>\$/ft<sup>2</sup></u>	<u>\$/m<sup>2</sup></u>
( 4)	1975 <sup>Z</sup>	375    34.8	0.53	5.75
( 3)	1977 <sup>Z</sup>	---    13.9	-0.87 <sup>Y</sup>	-9.44 <sup>Y</sup>
(10)	1978 <sup>Z</sup>	---    13.9	---	6.50
( 5)	1981 <sup>W</sup>	663 <sup>X</sup> 61.6	0.67	7.16
( 9)	1982 <sup>W</sup>	547    50.8	0.71	7.65

<sup>W</sup> Based on dollar food cost savings.

<sup>X</sup> Based on national median plot size.

<sup>Y</sup> Net included transportation and labor costs.

<sup>Z</sup> Based on market yield value.

Table 2. Horticultural skill rating item correlations.<sup>z</sup>

	$Y_1$	$Y_2$	$Y_3$	$Y_4$	$Y_5$	$Y_6$	$Y_7$	$Y_8$
$Y_1$	1.000							
$Y_2$	0.400	1.000						
$Y_3$	0.398	0.350	1.000					
$Y_4$	-0.112	0.234	-0.203	1.000				
$Y_5$	0.281	0.543**	0.361	0.261	1.000			
$Y_6$	0.152	0.227	0.171	0.085	0.327	1.000		
$Y_7$	0.072	0.171	0.488	-0.111	0.400	0.268	1.000	
$Y_8$	0.098	0.320	0.418	0.160	0.375	0.012	0.267	1.000

<sup>y</sup>  $Y_1$  Cleans up litter and trash;  $Y_2$  Controls weeds;  $Y_3$  Picks crops when ripe;  $Y_4$  Uses  $\geq$  than 90% of space;  $Y_5$  Crops continuously;  $Y_6$  Spaces properly;  $Y_7$  Keeps plants free of insects and damage;  $Y_8$  Keeps plants generally healthy.

<sup>z</sup>  $n = 41$

Table 3. Comparisons of horticultural skill ranking items by plot rank and year (%).

Item	HIGH			MEDIUM		LOW	
	1979 (n=23)	1981 (n=9)	1979 (n=22)	1981 (n=14)	1979 (n=4)	1981 (n=7)	
1. Cleans up litter and trash	100.0	89.0	56.0	57.0	20.0	0.0	
2. Controls weeds	87.0	78.0	22.0	79.0	20.0	0.0	
3. Picks crops when ripe	87.0	78.0	47.0	71.0	40.0	29.0	
4. Uses $\geq$ 90% of space	79.0	89.0	44.0	43.0	20.0	14.0	
5. Crops continuously	100.0	100.0	89.0	50.0	100.0	14.0	
6. Spaces properly	71.0	89.0	36.0	64.0	0.0	43.0	
7. Keeps plants free of insects and damage	63.0	30.0	28.0	21.0	0.0	14.0	
8. Keeps plants generally healthy	97.0	78.0	86.0	36.0	0.0	14.0	
MEAN PERCENTAGE	85.5	78.9	51.0	52.6	25.0	16.0	

Table 4.  $\chi^2$  analysis<sup>x</sup> of plots<sup>y</sup> of gardeners who utilized free items, e.g. mulch, bedding plants, tools, by Horticultural Skill ranking in % of rank category<sup>z</sup>.

<u>Rank Category</u>	<u>Did Use Free Items</u>		<u>Did Not Use Free Items</u>	
	<u>%</u>	<u>n</u>	<u>%</u>	<u>n</u>
High Skill	50.00	7	50.00	7
Medium Skill	0	0	100.00	19
Low Skill	14.29	1	85.71	6

<sup>x</sup>  $\chi^2 = 12.77$ ;  $P < 0.002$

<sup>y</sup>  $n = 40$

<sup>z</sup>  $\chi^2$  may not be valid test due to sparseness of cells.

Table 5.  $\chi^2$  analysis<sup>x</sup> of plots<sup>y</sup> of gardeners who fully used surplus for own family by Horticultural Skill ranking in % of rank category.<sup>z</sup>

<u>Rank Category</u>	<u>Did Use All Surplus Self</u>		<u>Did Not Use All Surplus Self</u>	
	<u>%</u>	<u>n</u>	<u>%</u>	<u>n</u>
High Skill	0	0	100.00	14
Medium Skill	35.00	7	65.00	13
Low Skill	71.43	5	28.57	2

<sup>x</sup>  $\chi^2 = 12.12$ ;  $P < 0.002$

<sup>y</sup>  $n = 41$

<sup>z</sup>  $\chi^2$  may not be valid test due to sparseness of cells.

Table 6. Categories of time and travel investment of 1979  
Manhattan Community Gardeners (%).<sup>z</sup>

TIME		TRAVEL	
<u># hrs/wk</u>	<u>%</u>	<u># trips/wk</u>	<u>%</u>
< 2	67	1	32
2-6	23	2-3	54
> 6	10	> 3	14

<sup>z</sup> n = 57

Table 7. Categories of estimated expenditure and savings of 1979  
Manhattan Community Gardeners (%).<sup>z</sup>

<u>Category</u>	<u>\$ Amount</u>	<u>% Respondents</u>
EXPENDITURE	< 10.00	26
	10.00 to 24.99	53
	25.00 to 45.00	15
	> 45.00	6
-----		
SAVING	< 50.00	51
	50.00 to 100.00	35
	> 100.00	14

<sup>z</sup> n = 47



Table 8. Frequency of crops grown by community gardeners.

<u>Crop</u>	<u>f</u>
Tomatoes	50
Beans	44
Cole crops	35
Peppers	34
Salad greens	34
Onions	34
Cucumbers	32
Squashes (including Pumpkin)	32
Carrots	30
Radishes	26
Irish Potatoes	25
Green and Field Peas	23
Herbs (including Parsley)	22
Sweet Corn	20
Flowers (excluding Sunflowers & Marigolds)	19
Beets	19
Melons	18
Okra	18
Eggplant	15
Spinach	12
Pot Greens	12
Sweet Potatoes	10
Turnips, Parsnips, New Zealand Spinach, Chinese Cabbage, Rutabaga, Popcorn, Peanuts	<10

Table 9. Reasons for preference for Manhattan Community Garden over home garden. (Multiple response item, %  $\neq$  100%.)<sup>z</sup>

<u>Reason</u>	<u>Frequency of Choice</u>	<u>% Responses</u>
1. Like watching other gardens	13	24
2. Like having other gardeners nearby	12	19
3. Enjoy social contact/ new acquaintances	10	19
4. Save money on expenses	10	19
5. Get good feeling of "community"	8	15
6. Have ties to garden neighborhood	3	6

<sup>z</sup> n = 16

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## APPENDIX



## Department of Horticulture

26.

Waters Hall  
Manhattan, Kansas 66506  
913-532-6170

September 10, 1979

Dear COMMUNITY GARDENER:

Enclosed is a questionnaire concerning the rewards and costs of your gardening experience at the Manhattan Community Gardens this year. As a Community Gardener, you are not obligated to answer this questionnaire; however, your cooperation will help us to answer some important questions about community gardening, and help us to improve the Manhattan Community Gardens for 1980. Please take the time to answer the questions as completely as you can.

Your name and plot number(s) appear on this questionnaire for purposes of distributing and collecting the questionnaire, only. I want to assure you that the information you provide will be confidential. Your replies will be coded numerically and neither names nor addresses and plot number(s) will ever be published, or in any other way identified with the results of this study.

Because I feel your time is valuable, I want to express my appreciation for your assistance by giving you a foliage plant. When you have completed the questionnaire, place it in the enclosed self-addressed, stamped envelope, and mail it back to me by September 24. As soon as I receive it, I will send you a coupon which you may use to pick out a 4-5" foliage plant from the KSU Horticulture Research Greenhouse.

Thank you for your cooperation.

Sincerely,

A handwritten signature in cursive script that reads 'Joan Shoemaker'.

Joan Shoemaker, Graduate Student  
Department of Horticulture  
Kansas State University

## 1979 MANHATTAN COMMUNITY GARDEN SURVEY

1. Please circle the number of seasons you have gardened in the Manhattan Community Gardens. (For example, if 1979 is your first year, circle "1".)    1       2       3       4       5

2. How many years have you been responsible for a vegetable garden, anywhere, any size, in your life? (Fill in the number of years.)  
\_\_\_\_\_ years.

3. If you have never gardened before this year, please skip this question, and go on to Question #4.

If you have ever gardened anywhere before 1979, please circle the one appropriate description of your garden in A below, and one appropriate description of your garden in B below:

- A. In comparison to my previous gardens, this year's Manhattan Community Garden plot(s) was: 1. about the same size.  
2. smaller.                      3. larger.

- B. In comparison to my previous gardens, this year's Manhattan Community Garden plot(s) was: 1. the best yielding.  
2. the poorest yielding.       3. about the same in yield.

4. How did you learn to garden? (Check all the appropriate categories below:)

\_\_\_\_\_ Personal experience, trial and error  
\_\_\_\_\_ From friends or from gardening experts  
\_\_\_\_\_ From formal courses about gardening  
\_\_\_\_\_ From reading gardening books and magazines  
\_\_\_\_\_ Other sources (Please specify.) \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

5. Please list each crop you have grown in your Manhattan Community Garden plot(s) during the 1979 season. (Specify each type of vegetable, for example, sweet corn, Irish potatoes, okra. If you grew flowers for decorative purposes, list them as "flowers"; if you grew herbs for cooking, list them as "herbs".)

_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

6. How many hours a week, on the average, do you work in your Manhattan Community Garden plot(s)? (Check the category closest to your estimated hours:)

\_\_\_\_\_ I spend one to four hours weekly in my garden.  
 \_\_\_\_\_ I spend four to eight hours weekly in my garden.  
 \_\_\_\_\_ I spend more than eight hours weekly in my garden.

How many times a week, on the average, do you make a trip to your Manhattan Community Garden plot(s)? (Check the category closest to your estimated number of trips:)

\_\_\_\_\_ I make one trip a week to my garden.  
 \_\_\_\_\_ I make two or three trips a week to my garden.  
 \_\_\_\_\_ I visit my garden nearly every day.

7. Did you use tomato or sweet potato plants provided in the Manhattan Community Garden cold frames? (Check one:) \_\_\_\_\_ Yes \_\_\_\_\_ No
8. Did you share or receive plants or produce with or from other Manhattan Community Gardeners? (Check one:) \_\_\_\_\_ Yes \_\_\_\_\_ No

9. Have you used the following Manhattan Community Gardens tools and equipment? (Check each item you have used:)

\_\_\_\_\_ Hand tools (hoes, shovels, rakes, hayforks, etc.)  
 \_\_\_\_\_ Rototiller  
 \_\_\_\_\_ Wheelbarrow

10. If you have used the Manhattan Community Garden Hand tools, Rototiller or Wheelbarrow, please skip this question and go on to Question #11.

If you have never used the Manhattan Community Garden Hand tools, Rototiller or Wheelbarrow, please check below the one reason which best describes why you have never used these items:

\_\_\_\_\_ I didn't know they were available.  
 \_\_\_\_\_ I have my own tools and equipment.  
 \_\_\_\_\_ It was too inconvenient to get the Manhattan Community Garden tools and equipment.  
 \_\_\_\_\_ Other. (Please specify:) \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

11. Do you and your household eat immediately all the fresh produce from your Manhattan Community Garden plot(s)? (Check one and follow the instruction next to the answer you check.)

\_\_\_\_\_ Yes. (Skip Question #12 and answer Questions #13 and #14.)  
 \_\_\_\_\_ No. (Answer Questions #12, #13 and #14.)

12. If you and your household do not eat immediately all the fresh produce from your Manhattan Community Garden plot(s), please check all the following which describe how you handle your surplus produce:

\_\_\_\_\_ We throw it away or let it rot in the garden.  
 \_\_\_\_\_ We give it away.  
 \_\_\_\_\_ We preserve it by canning.  
 \_\_\_\_\_ We preserve it by freezing.  
 \_\_\_\_\_ We preserve it by drying.  
 \_\_\_\_\_ We preserve it by cool storage (root cellar, for example)  
 \_\_\_\_\_ We sell it.



13. If the necessary equipment, facilities and expert assistance were available to you at low cost, would you "can" surplus which you do not now "can"? (Check one:) ☐ Yes ☐ No
14. Do you keep a record of your expenses in establishing, tending and harvesting (including preserving if applicable) your Manhattan Community Garden plot(s)? (Check one and follow the instruction next to the answer you check.)  
☐ Yes. (Answer Questions #15 and #17; skip Question #16.)  
☐ No. (Answer Questions #16 and #17; skip Question #15.)
15. Please report your expenses for the items listed below: (Report the total dollar amount for all Manhattan Community Garden plots you are working, and estimate for the entire 1979 season.)  
 \$  Seeds and bedding plants and seed containers.  
 \$  Purchase or rental of gardening tools and equipment.  
 \$  Purchase of fertilizers and pesticides.  
 \$  Cost of transportation to and from the Gardens.  
 \$  Preserving produce. (containers, equipment purchase or rental)  
 \$  Other expenses. (babysitting, for example)  
 \$  Plot rental fee.
16. Please "guesstimate" your Manhattan Community Garden plot(s) expenditures by checking the category below which best represents your estimated total expenditure. Do not include your plot rental fee.  
☐ \$10.00 or less  
☐ \$10.00 to \$25.00  
☐ \$25.00 to \$45.00  
☐ more than \$45.00
17. Do you feel you have saved money on your food expenses by having a Manhattan Community Garden plot(s) this year? (Check one and follow the instruction next to the answer you check.)  
☐ Yes. (Answer Questions #18 and #20; skip Question # 19.)  
☐ No. (Answer Questions #19 and #20; skip Question #18.)

18. Please "guesstimate" the amount you have saved on your food expenses by checking the category below which best represents your estimated savings:

☐ \$50.00 or less saved  
☐ \$50.00 to \$100.00 saved  
☐ more than \$100.00 saved

19. Please write in why you feel your Manhattan Community Garden plot(s) did not save you any money on food expenses: \_\_\_\_\_

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

20. If you could not save any money by gardening, would you still plant and tend a garden (any kind, anywhere)? (Check one:)

☐ Yes      ☐ No

21. Are you proud of the way your Manhattan Community Garden plot(s) has turned out? (Check one category which best represents your feelings about your garden:)

☐ Very Proud. (My disappointments have been minor ones.)  
☐ Generally Proud. (I would do a few things differently next time.)  
☐ Generally Displeased. (My disappointments have been major.)

22. What has been the single most troublesome aspect of having a Manhattan Community Garden plot(s) for you? (Check one:)

☐ Finding time for tending it.  
☐ Weeds.  
☐ Insect pests and plant diseases.  
☐ Weather.  
☐ Vandalism and/or theft.  
☐ Neighboring Community Gardeners.  
☐ Other. (Please specify:) \_\_\_\_\_

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

23. Please check all of the items below which you would have liked to have had available at the Manhattan Community Gardens, and which you personally would have used:

☐ Tool shed on premises.  
☐ More supports for beans, peas, tomatoes & vines.  
☐ Chicken wire and netting to protect seedlings.  
☐ Restroom facilities.  
☐ A fence or barrier planting around the Gardens boundaries.  
☐ More classes on gardening.  
☐ Free or low cost canning facilities and equipment.  
☐ Drip or soaker hoses for watering.  
☐ Assurance of the same plot next year.  
☐ A place to plant and leave winter crops in the ground. (For example, parsnips or asparagus for next spring.)  
☐ Other. (Please specify:) \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

24. If you had your choice between gardening next to your home, or gardening in the Manhattan Community Gardens, in identical soil and in exactly the same size plot, would you choose to garden in the Manhattan Community Gardens? (Check one and follow the instruction next to the answer you check:)

☐ Yes. (Please answer Question #25.)  
☐ No. (You have completed this questionnaire. Thank You!)

25. Please check any and all the reasons below which apply to your choice of the Manhattan Community Gardens in Question #24 above;

- \_\_\_\_\_ I enjoy the social contact with other gardeners, and get to make new acquaintances.
- \_\_\_\_\_ I get a good feeling of "community" from being at the Gardens.
- \_\_\_\_\_ I like having other gardeners nearby to share gardening concerns with.
- \_\_\_\_\_ I save on expenses such as tools, plants, mulch and water.
- \_\_\_\_\_ I like the neighborhood and/or I have friends in the neighborhood.
- \_\_\_\_\_ I like to watch everyone else's garden to see what's going on.
- \_\_\_\_\_ Other. (Please specify:) \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

THANK YOU FOR FILLING OUT THIS QUESTIONNAIRE. I AM GRATEFUL FOR YOUR TIME AND PATIENCE. MAIL YOUR COMPLETED QUESTIONNAIRE IN THE ENCLOSED STAMPED, SELF-ADDRESSED ENVELOPE. THE COUPON FOR YOUR FOLIAGE PLANT WILL BE SENT BY RETURN MAIL.

Joan Shoemaker

HORTICULTURAL SKILL RATINGS, DEMOGRAPHIC CHARACTERISTICS,  
ECONOMIC ASPECTS, AND SOCIAL BEHAVIORS OF COMMUNITY GARDENERS

by

JOAN SHOEMAKER

A.S.	College of Lake County	1976
B.A.	Antioch College	1965

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AN ABSTRACT OF A MASTER'S THESIS

Submitted in partial fulfillment of the

requirements for the degree

MASTER OF SCIENCE

Department of Horticulture

KANSAS STATE UNIVERSITY  
Manhattan, Kansas

1982

Renters of 130 community garden plots during the period 1979-1981 were studied to determine horticultural skill ratings, demographic characteristics, savings and investment, production, garden experiences, and social behaviors. Data were collected by means of plot evaluation, plot rental applications and a mail survey.

The composite typical gardener demonstrated three to five evaluative horticultural practices correctly; was new to the community garden but had gardened for 10 years, having learned to garden from family and friends and by trial and error. He/she used personal supplies and equipment and lent them to other community gardeners; spent two hours a week in the garden over the course of two to three trips weekly; spent approximately \$25 to raise 12.6 vegetable and flower crops on  $61.2 \text{ m}^2$ , and saved  $\$0.68/\text{m}^2$  on food costs by preserving surplus for the use of a family of four living on a per annum income of \$9759. He/she felt generally proud of the garden plot; would garden again even if he/she could save no money by doing so; found time to tend the garden to be the worst problem; and would prefer the convenience of a garden at home.

Experienced gardeners were motivated to participate in community gardening by the opportunities to be with other gardeners.