

A Profile of Cut Flower Preserving Knowledge and Beliefs in Shiraz

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Abstract

A survey research was carried out during summer 2002 to determine the attitude and knowledge of the flower consumers' methods of preserving cut flowers. According to simple random sampling, 149 cut flower purchasers were selected from six florist shops in Shiraz, Fars, Iran. A response rate of 97% was recorded. Results indicate that most of the consumers do not use floral preservatives, do not do any treatment on cut flowers to increase their vase life at home, do not select suitable places for keeping cut flowers at home and do not have any idea about the harmful effects of some cut flowers on others. Most of them believe that flowers do not and should not live for a long time. Since this is the first study on the consumers' knowledge about methods of preserving cut flowers in Iran, it should provide important managerial information for the Agricultural Extension Service to diminish cut flower loss and to increase its consumption culture in Iran.

INTRODUCTION

Although flower and plant interest in Iranian culture goes back to three thousand years ago (Anonymous, 2002), the per capita annual consumption of cut flowers in Iran is only 14 stems (Anonymous, 1998). Iranian flower growers and sellers in contrast to those of developed countries do not pursue any action to increase the vase life of cut flowers. Therefore, consumers must have the necessary information to do so. Most Iranian consumers anticipate a vase life much less than the standard one for cut flowers. For instance in the case of cut tuberose they expect a vase life of 3-4 days. This fact influences their decision in choosing cut flowers as a suitable option. As a result their inclination to purchase cut flowers is gradually decreasing; and on the other hand, their desire to buy pot plants is increasing (researchers' personal observation).

An investigation of cut flower consumers' information and skills regarding the suitable methods of increasing the vase life of cut flowers has been the major objective of this research. No research, similar to the present study, has been performed in Iran; therefore, the findings of this research can provide helpful information for cut flower marketing and extension programs in order to promote the knowledge and skills of cut flower consumers in Iran.

RESEARCH METHOD

The search method used for this study was survey research. According to the research objectives several open-ended and close-ended questions were designed and arranged in the form of questionnaire. Using face validity for testing the validation and internal consistency for determining the reliability ($\alpha = 0.93$) of the questionnaire, a pilot study was conducted. The statistical society of this research was cut flower purchasers in Shiraz - in this study the purchasers were all consumers. Among florist shops in Shiraz, six shops were selected by simple random sampling. Then research data were gathered through a face-to-face interview with cut flower purchasers according to the questionnaire arrangement. Respondents were selected by simple random sampling. Response rate was 97%, resulting in 149 contributions. Data were encoded by SPSS-PC 10 package.

RESULTS AND DISCUSSION

The results show that the respondents have little background knowledge about flowers: 17.4% have had some studies on flowers and only 2.0% have had studies on cut flowers. Books (8.7%), television (2.7%), academic tests (2.7%), newspapers (2.0%) and the internet network (1.3%) were the study resources. 62.4% of the respondents buy less than six cut flowers per month and 84.6% buy less than 15 cut flowers. Thus, the mean average of cut flower purchase among Shirazian citizens is 7.1 flowers per month which is six times more than the Iranian mean consumption, indicating that Shirazians are more willing to buy flowers than other Iranians. Most consumers anticipate a vase life much less than the standard one for cut flowers: for instance, 3-4 days for tuberose and 4-5 days for bud roses. In response to this question, "Do you think this duration (i.e. 3-5 days) is acceptable?", 70% of the respondents stated: "Flowers are tender and we must not expect more vase life than this." This attitude towards the delicacy of flowers is greatly affected by great Persian literary works and poets such as "Saadi". The lack of respondents' knowledge about methods of increasing the vase life of cut flowers also causes the confirmation of their beliefs.

The main factors affecting vase life of cut flowers after purchase are classified into six groups:

1. Cut flower selection.
2. Transport duration and conditions.
3. Home practices.
4. Vase solution.
5. Vase conditions.
6. Home conditions.

Findings on the above mentioned aspects are presented below:

1. Although buying some cut flowers at the bud stage may decrease their vase life (Vaughan, 1988), in the case of rose the bud stage is the best (Nowak and Rudniki, 1990). Almost all the respondents asserted that rose is their first option in buying cut flowers, and 53.7% of respondents announced that they buy roses only when they are at the bud stage. As it can be seen, through experience, purchasers understand that bud roses have longer vase life.

2. Transport duration is divided into four categories: less than 5 min, 5-15 min, 15-30 min and more than 30 min, which are respectively suitable, good, acceptable and not acceptable. 47.7% of the respondents transport their cut flowers in a suitable duration. But all of them declared that the method of handling is dry and by car. About 1.5% of the respondents declared that if the weather is very hot or windy, they somehow attempt to protect their cut flowers during transportation. Results show that almost none of the purchasers have knowledge about the negative effects of hot or dry weather and evapotranspiration on cut flower vase life (Nowak and Rudnicki, 1990; Vaughan, 1988).

3. Using a preservative solution is one of the most important factors in increasing the vase life of cut flowers (Nowak and Rudnicki, 1990). Unfortunately, in Iran, florists do not sell any preservatives. Previous findings indicate that vase solutions must be changed at least every three days (Jones and Hill, 1993). Microbes in the vase solution cause vascular blockage resulting in vase life reduction. In order to prevent microbial growth, the pH of the solution must be lowered (Van Doorn and Peirik, 1990) or a germicide must be added (Jones and Hill, 1993). Hard water results in flower injury (Vaughan, 1988); on the other hand, using boiled water causes easier water movement in the flower. In this study only 1.3% of the respondents stated that they use boiled water in the vase solution and 84.2% stated that they use hard water (tap water). None of the respondents have ever used any commercial preservative solution: 55.7% use only water and 43.6% add some sugar to the vase solution. Previous studies indicate a vase life increment by adding sucrose in the vase solution (Nowak and Rudnicki, 1990; Vaughan, 1988), but when no germicide is included, a reverse effect on the vase life can be expected.

4. With regard to former research findings which recommend the use of suitable germicides and the replacement of the vase solution every 3 days (Jones and Hill, 1993), 11.4% of the respondents change the vase solution after 1 day, 25.2% after 2 days and 45.0% after 3 days; on the other hand, 12.8% do not change vase solution at all and 5.4% change it when it gets gloomy. 75.8% of the respondents stated that they use mere pure water for washing the vase, 15.4% do not wash the vase at all and only 8.7% disinfect the vase after washing. While it is recommended to disinfect the vase after changing the vase solution because preserving solutions cannot kill the existing microbes (Vaughan, 1988).

The condition and style of cutting the flower stem influences the vase life of cut flowers (Nowak and Rudnicki, 1990). 73% of the respondents stated that at the instance of getting home they do not perform any practice on the cut flowers in order to increase their vase life. 38.9% stated that they cut the end of the stems before putting them in the vase; and 12.6% of this percent do this in order to reach their desired length without knowing the technical benefit of this action. 11.4% soak the flowers, 13.4% cut the flowers' lower leaves before putting in the vase and none of them use hot water dipping of the ends of woody stem flowers. During their keeping 29.4% stated that they cut the stem ends of the flowers. From this group, 9.4% recut the stem end diagonally, 2.0% recut it to the optimal length (2-3 cm) and only 2.0% do the recutting under water. Among these respondents, 24.3% use a sharp blade for recutting.

5. Since metal containers are difficult to clean and the metal may sometimes neutralize the effect of the preservatives, plastic or china containers are preferable because they can be easily cleaned (Vaughan, 1988). 13.0% of the respondents used clay vases and 6.0% metal vases. The preference of the purchasers for vase material was 74.5% for china and glass, 19.5% for clay and 6.0% for metal. 66.4% of the respondents declared that the use of a transparent vase has beneficial effect on the vase life of their cut flower, and 67.8% declared that the interior surface of the vase should be smooth for easier cleaning.

6. Home conditions are another significant issue in the increment of the vase life of cut flowers (Nowak and Rudnicki, 1990). In addition to heat and ethylene sources such as gas stoves, combustion gases, cigarette smoke and ripe fruits, which decrease the vase life of cut flowers, temperature, moisture, light, air-flow and ventilation are also significant (Nowak and Rudnicki, 1990). 65.1% of the respondents did not notice the harmful effect of ethylene and did not remove their cut flowers from these sources. 94.0% removed wilted florets — sometimes the main source of ethylene production — but only 12.1% of the respondents did this because of vase life, the rest removed the wilted florets to increase the ornamental value. According to recommended notes (Reid and Kofranek, 1980), air flow should not exceed 0.5 m sec^{-1} and the air of the room should be refreshed every two hours. According to the results (Table 1), most of the respondents have good considerations of these factors and most considerations are regarded at middle quality. It is assumed that respondents have learned to consider these aspects of home conditions by experience.

It should be asserted that there was no significant statistical relationship between the kind of job, age, sex and the level of education of the respondents and their skill and information on the suitable methods of increasing the vase life of cut flowers.

RECOMMENDATIONS

According to the present research results, a number of recommendations can be suggested:

- a) Main activities for increasing the vase life of cut flowers should be carried out by wholesalers and retail florists—in Iran they do not. Therefore, it is recommended to enact new laws in order to obligate wholesalers and retail florists to treat cut flowers before sale.
- b) Suitable attractive instructional programs should be performed and executed by agricultural extension institutes in order to increase people's information and skills on the following aspects:

1. Correction of people's beliefs on vase life limitation of cut flowers.
2. Instruction for consumers on how to improve the vase life of their cut flowers by applying a few general tips.
3. Commercial production of preservative solutions, their distribution by florists in Iran and encouragement of cut flower purchasers to buy and use them.

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Tables

Table 1. Respondents behavior in providing a suitable home condition for keeping cut flowers, in relation to light, temperature, moisture, air-flow and ventilation.

| Condition | Quality | | | |
|-------------|---------|--------|----------|-----------|
| | Low | Middle | Suitable | Excellent |
| Light | 2.7% | 49.7% | 45.6% | 2.0% |
| Temperature | 2.0% | 96.0% | 2.0% | — |
| Moisture | 5.4% | 91.9% | 2.7% | — |
| Air-flow | 17.4% | 82.6% | — | — |
| Ventilation | 8.1% | 65.1% | 26.8% | — |