

A Study on the Relationships between Iranian People and Damask Rose (*Rosa damascena*) and Its Therapeutic and Healing Properties

A. Nikbakht and M. Kafi
Horticultural Sciences Dept.
Faculty of Agriculture
University of Tehran
Karaj, I.R.
Iran

Keywords: people-plant relationships, rose oil, rose water, traditional herbal plant, aromatherapy

Abstract

The origin of Damask rose is the Middle East and it is the national flower of Iran. Rose oil usage dates back to ancient civilization of Persia. Avicenna, the 10th century Persian physician, distilled its petals for medical purposes and commercial distillery existed in 1612 in Shiraz, Persia. This plant is called "Flower of Prophet Mohammad" in Iran because people believe it is a holy and therapeutic plant. The major products of petals steam distillation in Iran are rose water and rose oil subsequently. It takes 2000 petals to yield one drop of rose oil. There are a lot of therapeutic and healing properties for rose water and rose oil which makes it a favorable and popular plant in Iran. It soothes mind and heals depression, grief, nervous tension and stress, so it is sprayed or distributed at mourning ceremonies to calm and relax people. It helps in problems with digestive system so many Iranians add the powder of dried petals to yogurt and use it with their meal. There are also some other healing properties for rose oil and rose water, such as in problems about respiratory system (asthma, coughs and hay fever), special complaints of women, wound healing and skin health. The hips (the flower base which is swollen to seed) are excellent sources of vitamins A, B₃, C, D and E and its extract is eaten with bread in some parts of Iran. More recent studies show that its oil has anti HIV activity and it can stop and kill some strains of *Xanthomonas*.

INTRODUCTION

Rose is the king of flowers (Peter Bealis, 1990) and Damask rose is the national flower of Iran (Kafi and Riazi, 2002). Damask rose has an ancient history and its utilization dates back to at least 1500 years ago. There is a deep relationship between Iranian people and this plant and there are some special beliefs about it in Iran. Its popularity is not only because of its medicinal effects but also is due to holy thoughts about it. People call this plant Flower of Prophet Mohammed, because they believe its nice aroma remind them of prophet Mohammad. In this study we state a brief history of this plant, the beliefs about it in Iran, its processing methods and its therapeutic and herbal usages.

BOTANY

It is a thorny shrub up to 2.5 m height, with pink fragrant flowers, corymb inflorescence with 6-12 flowers which have an average of 33 petals per flower and mostly light pink (most Iranian cultivars). Leaves are compound with 5-7 leaflets (Rechinger, 1982). Unlike some Bulgarian cultivars which produce flower two times per year, Iranian ones flower once per year (around May- June). Nevertheless some individual bushes are found that flower in all growth season. Some Iranian cultivars exist in England such as 'Esfahan', 'Guilan' and 'Omar Khayam'. Its propagation is mostly by cutting and using suckers but micropropagation is a developing propagation method for this plant in Iran (Nikbakht et al., 2004). There are a lot of traditional gardens having mixed culture of Damask rose and other plants of Rosaceae family (especially almond). Gardeners used to

swear the shrubs to Prophet Mohammed to control themselves and not creep everywhere in their gardens, because the bushes produce suckers and spread quickly. They believed this could help them solve the problem.

HISTORY

Rosaceae is an ancient family. There are some fossils of rose in America belonging to 30 million years ago (Vetvicka, 1997). Two major groups of roses are old garden roses (including *Rosa galica* and *Rosa damascena*) and modern roses (including miniature roses and hybrid tea roses) (Vetvicka, 1997; Peter Bealis, 1990). The origin of Damask rose is the Middle East and some documents show that the origin of rose water is Iran, but the origin of its fragrant oil and extracts is Greece (Zargari, 1982). Its ancestors are probably *Rosa moschata* and *Rosa galica*. The major cultivation areas of Damask rose in the world are Bulgaria, Turkey, Iran and India. Kashan, Fars and Azerbaijan are the major cultivation areas in Iran. Among them the most famous one is Kashan at the heart of desert. In this area bushes mostly are irrigated 2-3 times per year. The yield ranges between 2-7 tons/ha but the highest quality of rose water obtains there.

HARVESTING AND DISTILLATION

Damask rose flowers harvesting is a real chore and time and labor consuming work. It is mostly performed at dawn to morning. Delay in harvesting or transport to distillery results in decreasing essential oil and quality. The festivals and ceremonies of rose water are held every year in Kashan from May-June.

Distillation industry is an ancient industry in Iran. Willow-water, fennel-water and rose water are some features of this traditional work. Avicenna, the 10th century Persian physician, distilled the petals of Damask rose for medical purposes and some commercial distillery existed in 1600 in Shiraz, Fars. The easiest way for distillation is boiling petals, the way performed nowadays at traditional homes in Kashan (Fig. 1). However, there are some industrial distilleries in Iran which distill petals through steam distillation. Two to three kg of rose water is produced per kg of flower. A study in Iran showed that the quality of rose water is higher in the traditional method compared with the industrial method. It is probably because of shorter interval between harvesting and distillation (Malek, 2001). The petal residue after distillation is used for livestock feed and composting.

USAGES AND IMPORTANCE

Different Products of Damask Rose are Used in Iran

1. Rose Water. It is the major product of Damask rose in Iran. It contains 10-50% rose oil. Its main usage is in religious ceremonies. The highest quality rose water is produced in Kashan. Kaaba (God House) in Mecca, Saudi Arabia, is washed yearly by unique and special rose water of Kashan. It is used in mosques especially at mourning ceremonies, to calm and relax people. It is also of high value in the food industry. Some special foods are prepared using rose water.

2. Rose Oil. It is not the major product of Damask rose in Iran, although it is produced mainly in distilleries and is one of the components of many perfumes. It has a solid component (Stearoptene) and a liquid one (Oleoptene). The nice odor of rose oil is due to latter component which itself is composed of Geraniol (45-75%) and Citronellol (20-40%) (Momeni and Shahrokhi, 1991).

3. Dried Flowers. Two kinds of dried flowers are produced in Iran. A) Dried bud which is mostly for export. B) Dried petals for different purposes; the major use is for eating, as it can solve problems with digestive system. Some Iranian people eat it with yogurt. The other purpose is drying petals when distilleries cannot accept the whole produced flower crop, consuming them later for distillation.

4. Hips. The hip of *Rosa canina* and *Rosa damascena* (Fig. 2) is rich in vitamin A, B₃, C, D, and E. So both dried and fresh ones, processed or not processed, are used in Iran. In

the central parts of Iran local research showed that the healthier body of local villagers is chiefly because of a special food habit. They eat the extract of the hip with bread as a meal.

Some other products such as rose vinegar and rose honey are produced in some areas.

THERAPEUTIC EFFECTS

Rose oil and rose water have a lot of therapeutic effects. Rose oil soothes mind and heals depression, grief, nervous stress and tension. It helps in problems with digestive system, thirst reduction, healing old caught, problems of respiratory system, special complaints of women, wound healing and skin health. Vapor therapy of rose oil is helpful for some allergies, headaches, migraine, etc. (Momeni and Shahrokhi, 1991; Zargari, 1982). More recent studies show that rose oil has anti HIV property (Mahmood et al., 1996) and can stop and kill some strain of *Xanthomonas* (Basim and Basim, 2003).

CONCLUSIONS

Damask rose – one of the ancient flowers, has an old history in Iran and the Middle East. These nations have lived with this flower for centuries. It is important for them not only for its therapeutic actions but also as playing the role of a holy plant. Increasing understanding of these matters, some extensive researches are conducting on this plant in Iran; for gathering and identification cultivars and introducing the most suitable and valuable ones, and simultaneously studies to breed cultivars with longer flowering period and improved quality and quantity rose oil.

Literature Cited

- Basim, E. and Basim, H. 2003. Antibacterial activity of *Rosa damascena* essential oil. *Fitoterrapia* 74:394-396.
- Kafi, M. and Riazi, Y. 2002. Cultivation of *Rosa damascena* Mill. and rose water production. Ministry of Agricultural-Jihad pub, Tehran, Iran.
- Mahmood, N., Piacente, S., Pizza, C., Burke, A., Khan, A.I. and Hay, A.J. 1996. The anti HIV activity and mechanisms of action of pure compounds isolated from *Rosa damascena*. *Biochemical and Biophysical Research Communications* 229:73-79.
- Malek, S. 2001. An investigation on traditional and industrial production of rose water from *Rosa damascena* in Kashan area. Proceeding of the first festival of rose and rose water. 26 May, Kashan, Iran.
- Momeni, T. and Shahrokhi, N. 1991. Essential oils and their therapeutic actions. Tehran Univ. Press, Tehran, Iran. (in Persian)
- Nikbakht, A., Kafi, M., Mirmasoumi, M. and Babalar, M. 2004. Micropropagation of Damask rose (*Rosa damascena* Mill.) cvs. Azaran and Ghamsar. *International J. of Agriculture and Biology*. (in press)
- Peter Bealis, T. 1990. *Botanica rose*. Grange Books, London, England.
- Rechinger, K. 1982. *Flora Iranica*. Graz, Austria.
- Vetricka, V. 1997. *Roses*. R&B Press, London, England.
- Zargari, A. 1982. *Medicinal plants Vol. 1*. Tehran Univ. Press, Tehran, Iran.

Figures

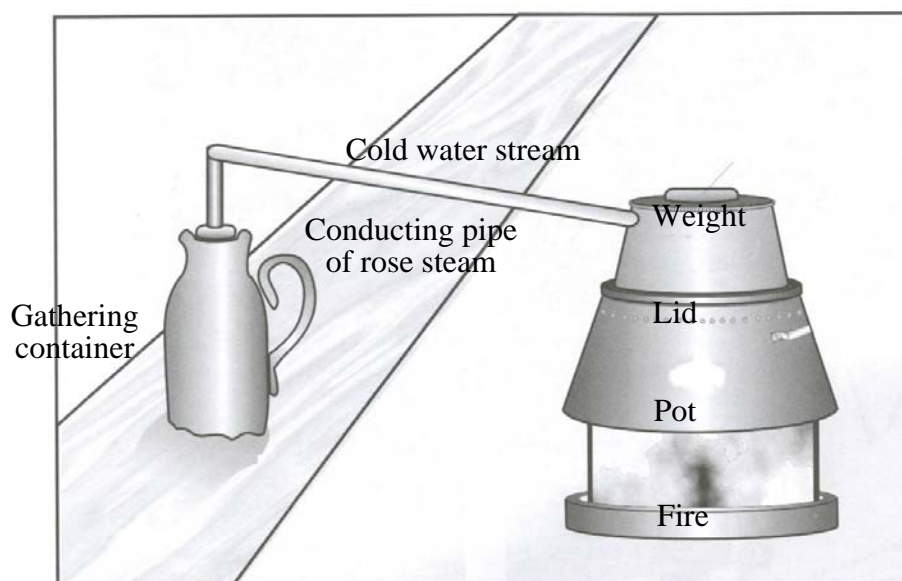


Fig. 1. Traditional system for rose distillation.

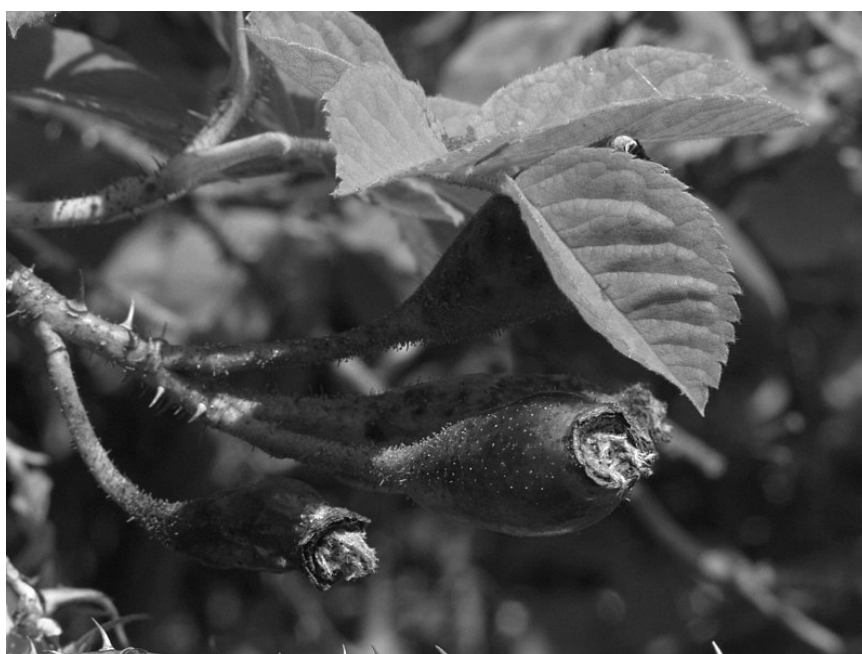


Fig. 2. Rose hip of Damask rose.