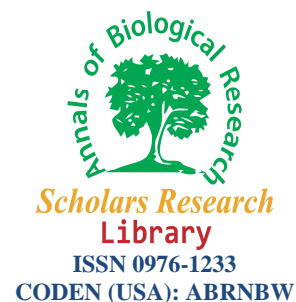




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Using herbal medicines in urban green areas

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ABSTRACT

There are different climates in Iran; therefore there is a wide variety of herbs as well. Using these species in green areas and parks doubles the species and ecotypes variety (color, form, size and compatibility) and ensures success and flexibility of the design. Having herbs in urban areas is a demonstration of climatic and cultural potential of the region. Since we need much more green areas to reach international standards, by including herbs in the list of proper plants for urban areas we would have a considerable growth in amount of herbs. By planting herbs in green areas, a part of expenses can be returned and since these places are close to industrial and commercial centers, the expenses of transportation decrease as well. Planting herbs in green areas makes it possible for people to better recognize them. Specifying the green areas of educational centers to planting herbs makes researching about them possible and determines their compatibility with different environments. A very effective solution of soil erosion is leaving the remains of herbs in it. Some herbs have a considerable sustainability against salinity, alkalinity of soil, severe sun radiation, marsh condition, severe recession, etc.

Keywords: green area, herbs, compatibility.

INTRODUCTION

Urban green area is a type of urban land application with human made plant cover which has both social and ecologic yield. Urban green area is a part of city's look which is made up of different kinds of plant covers and defines the morphologic structure of each city as a living part. Some herbs which are used in Iranian green parks include Acacia, pussy willow, Nerium, Elaeagnus angustifolia, Ephedra, Matricaria chamomilla, Berberis, Alcea (Althaea officinalis), rose, Borage, Calendula officinalis, Safflower, Saffron and so on. In other countries plants like pedophile and European Cornel are planted in green areas. Herbs usually take over the soil surface rapidly and create beautiful sceneries due to their green and shortness. These plants do not expect high nutrition and water. Also some of them can withstand salinity and have a high durability and long lifetime.

Advantages of using herbs in green areas

1- **Increase of variety:** there are different climates in Iran, therefore there are various types of herbs as well. Considering pointed out compatibility and capabilities of these herbs, planting these species in green parks doubles the species and ecotypes variety (color, form, size and compatibility) and ensures success and flexibility of the

design. Having herbs in urban areas is a demonstration of climatic and cultural potential of the region, while using rare and non-native species leads to harms for the created eco-system.

2- Preserving the Germ Plasm of the herbs: if a plant community is guarded against extinction by human, it is forced to live only in the area determined by the mankind. These areas include botanical gardens and green parks and in the best conditions, isolated natural areas. In these complexes, human's guarding of the plants leads to removal of natural phenomena like pasture, diseases and pests, flood, fire and drought, competition and so on. Therefore after successive generations, helpful genes which were responsible for the survival of plant against these conditions are removed from generations. In herbs case, this process is intensified by selective choosing of healthy and strong herbs from nature and instead frequency of harming genes which are removed in natural conditions increases. The way to prevent this danger is to develop herbal and wildlife communities in various climates. Since we need much more green area in order to reach the international standards, the area of required green area will be multiplied and by entering herbs into the list of green park plants we can help their distribution. Because of this variety and different climates, a lot of natural factors play their role and moreover exploiting from nature decreases as well. If herbs enter the green areas in schools, homes or rooftops, we would achieve a green revolution in this case.

3- Recompensing a part of expenses: specifying proper water and soil resources in order to build green areas which are now undeniable due to development of cities. The related expenses of Green Park are something all the citizens have to pay for their own health and environment. By planting herbs in urban areas a portion of expenses can be returned and the expenses related to transportation are also reduced due to being closed to commercial and industrial centers. Water requirement of herbs is usually less than non-native species which leads to less water consumption.

4- Educational, research and tourism goals: despite long history of using herbs and existence of different types of them in our country, unfortunately little scholars and agriculture experts are familiar with them. In order to increase familiarity with these types there should be free training for all people including students and even authorities and green area experts. Planting herbs in green parks creates this opportunity. In countries like Chile and India, incredible growth of green areas is due to public education and cooperation. In cities having tourist attractions, existence of botanical gardens and green parks can have a major effect on attracting more tourists.

5- Wind erosion control: in places in which land has been left and there are heavy winds or waters caused by rainfall, a very effective way of soil erosion is leaving the remains of crops on land. Also using herbs like *Lavandula stoechas* and *Thymus vulgaris* can help in erosion control. *Achillea millefolium* has a good sustainability against pasture. Planting herbs like acacia and eucalyptus near deserts is a good solution for preventing it from advancing. *Alhagi* and *Citrullus colocynthis* are very compatible with sharp gradients and therefore planting them in ramped lands can be an important factor for soil preservation. Herbs like eucalyptus can be used to build structures like windbreakers. Thus, herbs can be so strong in ecologic services.

Important factors related to using herbs in green parks

a) **Plant compatibility:** each herb has its own ecologic domain, i.e. the best growth can be obtained in a specific climatic condition. Evaluating native plant cover of each area can be a helpful guide for selecting the herbs. Iranian herbs are mainly native since no plant breeding has been done on them. Therefore their domain of compatibility (ecologic domain) is pretty wide. Desirable compatibilities of herbs in green park design usually contains these items:

1- **Drought, salinity and alkalinity sustainability:** herbs like acacia, eucalyptus, *Datura stramonium*, *Elaeagnus angustifolia*, Rosemary, *Lavandula stoechas*, Rose, castor and alcea have a good sustainability against drought, salinity and alkalinity of soil.

2- **Severe sun radiation sustainability:** plants like Rosemary, *Lavandula stoechas*, *Achillea millefolium*, *Santolina* and acacia have a considerable sustainability against sun radiation, while in similar conditions lots of other plants dry and eventually die.

3- **March condition sustainability:** in areas rich of underground water, plants like eucalyptus grow well and play role in reducing underground and saturated waters. Pennyroyal and mint are other herbs with similar attribute.

4- **Severe recision sustainability:** herbs like rosemary, *Lavandula stoechas* and cinnamon are easily shaped and can be formed according to the desirable surrounding area.

5- **Sustainability with gradient surfaces:** in sharp gradients of highways or in mountain parks, herbs like boil, alhagi, *Cotoneaster* and some types of *Hypericum perforatum* can be used. Also, in order to cover concrete walls which are built for stabilizing gradients, we can use *Pistacia atlantica*, Berberis, rose, Bay Laurel and sumac.

6- **Compatibility with urban and industrial pollutions:** some herbs are sustainable against air pollutions, dust, ultraviolet ray, and noise pollutions. Some types of roses stabilize Sulfur Dioxide in their textures. Acacia, tilia and hazelnut reduce noise pollution and rose absorbs the fluoride around aluminum factories.

b) **Effect of herbs on human health:** Emersion of Aromatherapy and flower therapy in today's modern medicine after reviewing innovations of our ancestors is an indication of herbs role in curing physical and mental illnesses. Herbs like eucalyptus, pine, willow, maple and Fraxinus excelsior destroy algae, bacteria and some harmful insects by emitting some chemicals and they also create a relaxing mood in human. Sometimes these organic materials are called atmospheric vitamins. Matricaria chamomilla, rose, Pussy willow and Elaeagnus angustifolia emit a desirable scent into the atmosphere.

CONCLUSION

Urban green areas are effective on urban ecology and especially the climate, air, soil, underground waters and animals. The most important impact of green parks in cities is their environmental functions which has signified cities as human society environment and is standing against negative impacts of industrializing and improper use of technology, and thus has increased life quality in cities. Recognizing native plants which can deal with the special conditions of each area is a must in most parts of country. Considering its importance in human life and that human likes variety, this factor (variety) should be considered in designing urban green parks. Proper use of trees and plant cover and building green parks requires experience, knowledge, research and recognition of different plant species in order to strengthen the ancient relationship between human and nature. There are always limitations like climate, drought, sun radiation and so on which limit the variety. Some herbs like rosemary, Lavandula stoechas, Achillea millefolium, santolina, roses, alcea, eucalyptus, Nerium, Calendula officinalis, Bay Laurel, acacia and so on are already planted in Iran's green areas, but some others like Echinacea, alhagi, borage, Matricaria chamomilla, pussy willow, Jujube and sumac have the capability of entering Iranian green parks, but have not yet attracted adequate attention.

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