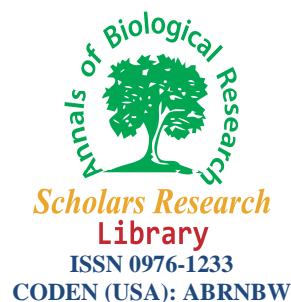




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The study of medicinal plants usage trough urban green space

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ABSTRACT

There are defferent climates in Iran so the diversity of medicinal plants is also much. Using theses species in the green space increase the diversity of them and their ecotypes (in terms of color, form, size and consistency), increase the success factor of projects and flexibility of design. Medicinal plants essence in the green space is the sign of the high ability of climate and cultural features of the region. Planting herbs in green space causes that people know them and get some information about them. Dedicating Green space of educational environments such as schools, colleges, universities and research departments to the medicinal plants' cultivation improves researching on medicinal plants' features that shows the compatiability of these plants. One of the effective ways in controlling soil erosion is overlaying the remnants of Medicinal Plants before their fallows. Thus, medicinal plants are also very capable on giving ecological services. Some herbs have good tolerance to salinity, drought and alkaline of soil, intense solar radiation conditions, marshy y land, and pruning and so on...

Key Words: Green Space, Medicinal Plants, Economic, Adaptation.

INTRODUCTION

The purpose of urban green space is a kind of urban land surface covered by manufacturing plant that also has social and ecological efficiency. Industry and population growths in cities lead to the utilitarian construction. These manufactures have been done without paying attention to the at least light and air condition in urban space. Meanwhile, needs for new urban spaces and housing due to the population growth gradually reduce the green space and gardens which has been caused environmental pollution. Urban green spaces as pulmonary respiratory of cities not only lead to the beauty of city and social effects but also they effect on moderating climate, increasing humidity, reducing noise pollution, increasing soil permeability, reducing the level of stagnation, improving bioclimate conditions in the city and attracting dust. Quality of urban environment has a direct connection with green spaces facilities. Traditionally nothing wrong or does not exist only for beauty but also is usefule and necessary. Medicinal plants which are used in the construction of public gardens in Iran are Acacia, salix aegyptiaca, oleander, hyssop, sea-buckthorn, meadowsweet, chamomile, foxglove, barberry, hollyhock, passionflower, raised, borage, always spring, safflower, saffron and so on. Plants like Acacia, salix aegyptiaca, Nerium oleander, Ephedra distachya, camomille, Passion flower, Calendula officinalis and Berberis are been planted in the green space of other countries.

1. Usually herbs in a short time cover the soil surface and create a special beauty due to their short height and green color.
2. These plants are not expectable in reaching nutrients and more water.
3. Also some of them are soil salinity resistant and have much durability and compatibility .

1. THE ADVANTAGES OF USING MEDICINAL PLANTS IN GREEN SPACE

1. Increasing diversity in the green space: there are different climates in Iran so the diversity of medicinal plants is much. according to compatibility and abilities of medicinal plants (in terms of color, form, size and consistency)

which are mentioned in this paper emphasise the usages of them in the green space becomes successful and increases the design flexibility.

2. Maintaining germplasm of medicinal plants: If a plant community can be supported by human they may be under less environmental changes so they may lose their consistent genes (during these changes) but in medicinal plants these changes lead to maintaining and keeping these genes for future.

3. Amending some part of the cost: by planting medicinal herbs in urban space we are able to amend some parts of costs including transporting, watering, spraying and so on.

4. providing educational, research and tourism purposes: using these plants not only can be useful in research institutes but also can be led to be known for tourists, students, teachers and all who are eager to know more about their environment indeed these plants and their features and effects on their lives.

5. Controlling Wind erosion: in the areas where the severe wind is blowing or water is flowing using perennial herbs such as hyssop, Achillea, lavender and thyme can be very effective in controlling erosion. Planting herbs like Acacia and Eucalyptus in the vicinity of desert are suitable in preventing deserts' progress. And Alhagi maurorum and Citrullus colocynthis are compatible in a sandy land.

2. IMPORTANT NOTES ON USING HERBS IN GREEN URBAN SPACE CONSTRUCTION

A) Plant adaptation: each plant has special ecology amplitude. In the other hand the best growth rates is in the certain climatic conditions. Studying on the autochthonous herbaceous cover of each region can be a useful guide in plant selection. Medicinal Plants of Iran are generally autochthonous stock because no genetic processes and even selection have been done on them. So their ecology amplitude is relatively wide. The optimal adaptation of medicinal plants in designing green space are as follow:

1. Tolerating drought, salinity and alkalinity of soil: medicinal plants such as Acacia, Eucalyptus, Datura, Elaeagnus, Rosmarinus Officinalis, Lavender, Rosa Damascena, Castor (Red) and Hollyhock have relatively good tolerance in salinity, drought and alkaline of soil.

2. Tolerating sun hard radiation: Plants like Rosa damascena, lavender, yarrow and Acacia have much tolerance near the asphalt and pavement surfaces which reflect much sun radiation whereas other plants break up their chlorophyll and eventually lead to the plant's death.

3. Tolerating marshy conditions: in the places where the subterranean water level is high some plants like Eucalyptus grow perfectly and have a fundamental role on reducing the subterranean water level and searing the water of saturated soils. Pennyroyal and Peppermint are plants that can tolerate the marshy conditions.

4. Tolerating pruning: Plants like Rosa damascena, lavender and cinnamon are protean so they are been protopoditeed proportionate to the aim and place of their usages.

5. Compatible with slope surfaces: in highways or mountain parks that have slope surfaces medicinal plants like can boil, Alhagi maurorum, Cotoneaster frigidus species and genus Hypericum perforatum can be used. Also for covering the concrete walls of highway that are used for staying the slope we can use plants like barberry, Rosa damascena, laurel, sumac and use search.

6. Compatibility with industrial and urban environments pollution: a group of medicinal plants has well tolerance against air pollution, dust, UV light and noise pollution. Roses like damask fix the sulfur dioxide (SO₂) in their tissues. Acacia and hazelnut in reducing the severity of noise pollution are very effective and Roses and datura plants are compatible in aluminum factories and absorb the fluoride produced by the factory. Tilia cordata is sustained to ozone (O₃). And Ginkgo biloba has compatibility in air pollution.

B) The effect of plants on human health: Plants such as eucalyptus, pine, willow, maple and ash by producing chemical materials (Phytoncids) and scattering them in space cause loss of fungi, bacteria and harmful insects, and also create relaxation and ecstasy in humans. Sometimes, these organic materials are called climate vitamins. Chamomile, Rosa damascena and salix aegyptiaca scatter lovely fragrance and sedation in space.

C) Beauty of plants: plants' diversities in form, size and color of each one can be beautiful. Medicinal plants which are suitable for green space are as follow:

1. Growth duration: one-year types (chamomile), two-year and perennial (borage and Rosa damascena)

2. The color of mud, branches and leaves: medicinal plants have blue flowers (Rosa damascena, lavender), yellow flowers (Hypericum perforatum), yellow and orange flowers (safflower, Calendula officinalis) white, purple, pink flowers (hyssop, Rosa damascena) and any other colors of flowers (hollyhock). the Color of aerial in olives, yarrow, lavender and are gray foliage and in Achillea are green grass. Jujube leaves have shiny green.

3. Size: medicinal plants in terms of their size are classified in 3 groups such as short plant (*Hypericum perforatum*) medium (*Rosa damascena*) and high (jujube and eucalyptus)

D) Ease of use: maintenance and cultivation of plants used for green space should be easy. Most of the medicinal plants proliferate through seeds, cuttings, grafting couch and Rhizome. By comparing with other plants they have less disease .

3. IN SELECTION AND EVALUATING NEW SPECIES OF PLANT THESE FACTORS SHOULD BE CONSIDERED

1. Compatibility: Compatibility of the plants mentioned in this paper with region climate characteristics of these plants causes increasing growth ability, propagation and finally survival of species.
2. Beauty and decent appearance: Lack of suitable usage of a plant in a place not only may reduce the beauty of that place but also can make some problems, for example using clump bushes in the margins of the streets and sidewalks may reduce the drivers' see and they can not be able to pay attention to the pedestrians waiting to pass through the street and this is caused an accident.
3. Physiological and morphological characteristics of plants: sometimes gum of tannins and other essential of plants cause some problem on people especially on children. because children are out of curiosity so they contact with the plant and even eat some part of the plant like leaf, flower and even root so they may be threatened by some toxin, and for being safety paying attention to this is important.
4. Feeling relaxation in visitor: making relaxation in visitor, attracting professionals and enthusiasts due to the variety in the green space in the way that supply alls' demands.
5. Avoiding uniformity and using combination of species: urban green space has been covered by industrial, wild trees such as sycamore, elm, ash, and Lawn for a long time, while most of allergy has been occurred by these plants. And we should pay attention that in drought situation water shortage plants like lawn which needs lots of facility for it's' growth and cultivation has been removed from green space. Although the importance of Medicinal Plants in the medical and pharmaceutical properties is obvious to all but using these plants as green space plants has became important for a long time.

CONCLUSION

Urban green space effects on urban ecology especially on climate, soil, subterraneous water and animal community. The most important effect of green space in cities is environmental function that significant city as a human society. Nowadays, sociologists, psychologists and doctors believe that green space not only has important role in air condition and residential places hygiene but also has a possitive effect on the health of citizens. Always there are climate limitation, drought, wind, excessive sun exposure, etc in herbaceous diversity in urban green space which cause the reduction of herbaceous diversity. Finally, we are reminded of the diversity of geographical environment and climatic conditions which differe from one region to another region in our country, causing a variety of plant community growth. some herbs such as *Rosa damascena*, lavender, yarrow, hollyhock, eucalyptus, *Cordia myxa*, oleander, *Calendula officinalis*, laurel, locust, red castor, more or less green space in the country are cultivated, but other groups such as *Alhagi maurorum*, oxtongue, chamomile, yarrow, hyssop, rue, *salix aegyptiaca*, jujube and sumac, Logging have capabilities in green space and can be enter to the green space but have not been considered seriously yet.

Acknowledgments

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