

*Review scientific paper*

## **SOCIOPSYCHOLOGICAL RESEARCH ON THE HOBBY BREEDING OF ORNAMENTAL PLANTS AND ITS THERAPEUTIC EFFECTS IN THE AREA OF KLIS SETTLEMENT**

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### **Abstract**

Today, citizens are required to be active participants in the protection of nature and the environment, and their contribution can result through the greening of various private spaces with ornamental plants. In addition, ornamental gardens can also be therapeutic, and therapeutic horticulture allows every person to work and acquire new knowledge and relaxation. Most residents in the Mediterranean also grow fruit trees, medicinal and aromatic herbs, and vegetable crops in their ornamental gardens.

The aim of the study was to investigate perceptions and attitudes about the hobby breeding of ornamental plants and its therapeutic effects in the area of the Klis settlement („Klis” is one of nine settlements located in the municipality of Klis). When preparing this study, a survey conducted in the first half of 2021 in the area of the Klis settlement was used.

Based on the above, the following results were obtained: 40% of respondents occasionally engage in hobby breeding of ornamental and other plants on outdoor green areas or in the garden. Hobby work with ornamental plants is interesting and enjoyable for them, especially during the flowering and fruiting period. Most of them prefer ornamental shrubs, and among flowering species, perennials and bulbous flowering species. More than 50% of respondents stated that working with potted plants and ornamental plants in the garden or on a green area has positive health and mental effects.

**Key words:** *hobby breeding, ornamental plants, attitudes and perceptions, horticultural therapy, Klis settlement*

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## INTRODUCTION

Gardens have always been the basis of life and the closest living space for humans, providing security and a pleasant stay (Jurčić, 1997). Today, humans must be active participants in the protection of nature and the environment, and they can make their contribution through the greening of various private spaces (Kraljičak et al., 2013). According to professional rules, garden space should be divided into smaller, separate spaces with different contents. Spaces with sharp corners should be designed with trees, shrubs and perennials (Vujković and Došenović, 2013). A country house, similar to a city single-family house, is characterized by a pronounced structural and social alienation from the immediate environment (Aničić, 2003).

When designing various green areas, the selection of suitable trees is very important because in most cases, trees determine the appearance of the open space. It is also necessary to take into account the ornamental value of the species during the calendar year. Some deciduous trees can also show their decorative characteristics during the winter period (Dorbić et al., 2018).

In an ornamental garden, annual and biennial flower species are indispensable, for example, Škorak (2016) in a study in the Varaždin County stated that the most common traditional flower species in the gardens studied were: Turkish carnations (*Dianthus barbatus*), peonies (*Paeonia* sp.), marigolds (*Calendula officinalis*), black cumin (*Nigella damascena*), marigolds (*Tagetes* sp.), hyacinths (*Antirrhinum majus*) and ornamental lupines (*Lupinus polyphyllus*).

A large number of the listed species are also used in the Dalmatian region. Today, some of our indigenous medicinal species are increasingly used in Mediterranean gardens, which do not require large amounts of water, nutrients, and maintenance.

Vegetable crops have always been a part of the ornamental garden. They give the space a certain casualness, usefulness, and orderliness if they are properly integrated into the garden (Dorbić et al., 2020).

Gardening is a process of therapy in the therapeutic situation of the garden. Strictly speaking, it is not the garden that heals, but gardening. The therapeutic effect of gardening is called horticultural therapy (Dujmović, 2015, In: Rubić and Gulin Zrnić (eds.) (2015)). Therapeutic gardens are specially designed gardens with the intention of strengthening motor, sensory, cognitive, affective, alimentary, spiritual, and social potentials in order to achieve a harmonious and healthy life. Therapeutic gardens and therapeutic horticulture enable every person to work and acquire new knowledge and relaxation (Dujmović, 2016).

The American Horticultural Therapy Association [AHTA] holds the lead in the development and popularization of horticultural therapy (Kuharić et al., 2010). In the Republic of Croatia, it is implemented only as part of occupational therapy in certain health institutions (Kuharić et al., 2010).

As previously emphasized, most people also grow some vegetable crops for food in their ornamental gardens.

In some studies, most gardeners emphasized the importance of fresh vegetables and fruits grown without the use of chemicals. The latter is not surprising, as many similar studies conducted around the world indicate the importance of access to safe food for gardeners (Turner 2011; Armstrong 2000; Evers and Hodgson 2011, according to, Slavuj Borčić et al., 2015, In: Rubić and Gulin Zrnić (eds.) (2015)). Hobby gardening in the area of the Klis settlement has been present for many years, and as the pace of life has accelerated and citizens are exposed to increasing stress, the number of hobby gardeners has also increased. In this paper, the emphasis is placed on social horticulture (as a therapeutic program of horticultural therapy) which, in addition to social interactions, also includes horticultural activities. It is essentially a recreational activity for free time. The focus is on dealing with plants and working in the garden, and there are no defined goals (Židovec et al., 2015).

The settlement of Klis („Klis“ is one of nine settlements located in the municipality of Klis), which was founded at the foot of a medieval fortress, is 9 km from Split and has a Mediterranean climate. The configuration of the terrain in the settlement of Klis is very specific due to the large difference in altitude. In addition to the above, the specificity is also in the architecture of the houses, older buildings and the extremely dense occupancy of the space with residential buildings where a large number of family houses do not have gardens. Precisely because of the above, the population is largely focused on growing ornamental potted plants. Existing gardens with ornamental species are of different sizes and design characteristics. Aničić (2017) states that due to the semi-humid climate, the Mediterranean garden is paved and lacks vegetation compared to the continental garden.

In the continuation of the paper, the results of the research of perceptions and attitudes about the hobby cultivation of ornamental plants and its therapeutic effects in the area of the Klis settlement are given.

### **Materials and methods**

When preparing this paper, a survey was used as a source of primary data, while various professional and scientific papers, publications, etc. were used as secondary data. The survey was conducted in the first half of 2021 with sample of 40 respondents (men and women) from Klis settlement area („Klis“ is one of nine settlements located in the municipality of Klis). The age gras of the sample were follows: 20-35 years (42.5% of respondents), 35-50 years (20% of respondents), 50-65 years (30% of respondents), 65 and over (7.5% of respondents). In terms of education level, the sample structure was as follows: secondary education (52.5%), higher education (15%) and higher education (27.5%). The processed data are expressed in percentages (%). Statistical data processing was performed in the SPSS 16 program for the Windows interface.

Table 1. Attitudes and perceptions about the hobby breeding of ornamental plants of residents in the area of the Klis settlement - general data (according to, Mrčela, 2021.)

O. No.	Question	Potential Answer	Resultes (%)
1.	Are you familiar with the term hortitherapy?	a). poor b). good c). extremely	a). 77.5 b). 20 c). 2.5
2.	Does the residential building you are staying in have outdoor green areas or a garden?	a). yes b). no c). dont know	a). 85 b). 15 c). 0
3.	Are you engaged in hobby breeding of ornamental and other plants in outdoor green areas or in the garden?	a). rarely or never b). periodically c). offten	a). 42.5 b). 40 c). 17.5
4.	Are you a hobbyist in growing potted plants for outdoor and indoor spaces?	a). rarely or never b). periodically c). offten	a). 28.2 b). 48.7 c). 23.1
5.	From which sources do you get information about the breeding and care of ornamental plants?	a). web b). friends, neighbors, relatives c). professional books, professional/ popular magazines	a). 52.5 b). 40 c). 7.5
6.	Do you use the services of professionals (agronomists, foresters, etc.) when growing ornamental plants as a hobby?	a). yes b). no c). sometimes	a). 12.5 b). 75 c). 12.5
7.	Do you find hobby work with ornamental plants interesting and enjoyable?	a). poor b). is satisfactory c). exceptional	a). 32.5 b). 42.5 c). 32.5
8.	How much time do you set aside during the week to work in the garden or in the green area?	a). 1-3 hours b). 3-6 hours c). 6 and more hours	a). 80 b). 15 c). 5
9.	Where do you get ornamental plants for your needs?	a). garden centers b). agricultural pharmacies. c). other	a). 70 b). 17.5 c). 12.5

According to Table 1., it is clear that more than 80% of the respondents own a residential building with outdoor green areas or a garden. 40% of the respondents occasionally engage in hobby breeding of ornamental and other plants on outdoor green areas or in the garden. Slightly less than half of the respondents occasionally engage in hobby breeding of potted plants for outdoor and indoor spaces. A large number of respondents are not familiar with the term horticulture and do not use professional services for hobby breeding. Information about the breeding and care of ornamental plants is mostly obtained (over 90%) via the Internet, friends, neighbors and relatives. Hobby work with ornamental plants is interesting and enjoyable for the majority of respondents. During the week, the majority of them (80%) set aside 1-3 hours for working in the garden or on a green area. Ornamental plants for personal needs are mostly purchased in garden centers.

40% of respondents occasionally engage in hobby breeding of ornamental and other plants on outdoor green areas or in the garden, and more than 80% of respondents own a garden. Slightly less than half of them occasionally engage in hobby breeding of potted plants. Hobby work with ornamental plants is interesting and enjoyable for most respondents, and they spend 1-3 hours in the garden per week. A large number of respondents are not familiar with the term hortithrapy.

Table 2. Perceptions and attitudes about ornamental plant breeding, horticulture and social relations of residents in the area of the Klis settlement (according to, Mrčela, 2021.)

O. No.	Question	Potential Answer	Resultes (%)
1.	What is most interesting to you in working with ornamental plants?	a). plant breeding b). plant propagation c). plant care	a). 45 b). 20 c). 35
2.	Which periods of growth and development in plants are most interesting to you?	a). sprouting b). growth and development c). flowering and fruiting	a). 27.5 b). 17.5 c). 55
3.	Which groups of woody ornamental species do you prefer the most when growing?	a). trees b). shrubs c). woody climbers	a). 35 b). 50 c). 15
4.	Which groups of woody ornamental species do you prefer the most when growing?	a). annual and biennial flower species b). perennials and bulbous flowering species c). potted plants	a). 15 b). 72.5 c). 12.5
5.	Do you notice different changes in ornamental plants (growth and development, diseases and pests)?	a). rarely b). from time to time. c). often.	a). 27.5 b). 45 c). 27.5
6.	Do you respect ecological principles when growing various ornamental plants as a hobby?	a). yes b). no c). partialy	a). 32.5 b). 12.5 c). 55
7.	Have you heard of the term therapeutic gardens?	a). yes b). no c). not sure	a). 47.5 b). 40 c). 12.5
8.	Does working with ornamental plants in the garden or in a green area have positive health and mental effects on you?	a). not enough b). is satisfactory. c). exceptionally,	a). 10 b). 55 c). 35
9.	Does working with potted plants for outdoor and indoor spaces have positive health and mental effects on you?	a). not enough b). is satisfactory. c). exceptionally,	a). 12.5 b). 57.5 c). 30
10.	Would you recommend other people to deal with ornamental plants in terms of horticultural therapy?	a). yes b). no c). maybe	a). 80 b). 20 c). 0
11.	Do you think that hobby dealing with ornamental plants has a good effect on the human psyche and health, especially in the current moments of the Covid 19 pandemic?	a). yes b). no c). not sure	a). 75 b). 7.5 c). 17.5

12.	Do you think that dealing with ornamental plants has a positive effect on the overall relationship with nature and the environment?	a). yes b). no c). not sure	a). 87.5 b). 0 c). 12.5
13.	Are you a member of any horticultural associations?	a). yes b). no c). I'm planning to join	a). 2.5 b). 85 c). 12.5
14.	Do you think that hobby dealing with ornamental plants has a positive effect on increasing social interactions, especially in the area of the Klis settlement?	a). yes b). no c). not sure	a). 67.5 b). 10 c). 22.5
15.	Has the hobby cultivation of ornamental plants intensified in the area of the settlement of Klis recently under the influence of the Covid-19 pandemic?	a). yes b). no c). not sure	a). 27.5 b). 15 c). 57.5

According to Table 2, the results showed that when working with ornamental plants, the most interesting thing for respondents was growing (45%), followed by plant care (35%). Slightly more than half of the respondents found the flowering and fruiting period to be the most interesting. When growing woody species, respondents preferred shrubs (50%) and trees (30%), and perennials and bulbous flowering species (40%). Only occasionally, 40% of them noticed various changes in ornamental plants (growth and development, diseases and pests). More than half of the respondents respected ecological principles when growing various ornamental plants as a hobby. Slightly less than half of them had heard of the term therapeutic garden. 55% of the respondents stated that working with ornamental plants in the garden or on a green area had positive health and mental effects on them, and slightly more (57.5%) that working with potted plants for outdoor and indoor spaces had positive health and mental effects on them. Most respondents would recommend working with ornamental plants to other people in the sense of horticultural therapy and believe that working with ornamental plants as a hobby has a positive effect on the human psyche and health, especially during the current Covid-19 pandemic. Over 85% of them believe that growing ornamental plants has a positive impact on their overall relationship with nature and the environment. The vast majority of respondents are not members of any horticultural associations. Two-thirds of respondents believe that growing ornamental plants as a hobby has a positive impact on increasing social interactions, especially in the Klis area. More than 57.5% of respondents believe that the hobby of growing ornamental plants has recently intensified in the Klis area under the influence of the Covid-19 pandemic.

## CONCLUSION

Based on the research on perceptions and attitudes about the hobby breeding of ornamental plants and its therapeutic effects in the area of the settlement of Klis, the following results were obtained. 40% of respondents occasionally engage in hobby breeding of ornamental and other plants on outdoor green areas or in the garden, and more than 80% of respondents own a garden. Slightly less than half of the respondents occasionally engage in hobby breeding of potted plants. Hobby work with ornamental plants is interesting and enjoyable for the majority of respondents, and they spend 1-3 hours in the garden per week. A large number of respondents are not familiar with the term hortitherapy.

In working with ornamental plants, the respondents are most interested in their breeding (45%). Species are especially interesting to them during the flowering and fruiting period. Of ornamental trees, they prefer ornamental shrubs, and of flowering species, perennials and bulbous species. More than half of them respect ecological breeding principles. More than 50% of respondents stated that working with potted plants and ornamental plants in the garden or on a green area has positive health and mental effects on them. They believe that hobbyist dealing with ornamental plants is positive for the human psyche and health, especially in the period of the Covid-19 pandemic, as well as for increasing social interactions.

## REMARK

*This paper is partially based on the seminar work of the graduated student Darinka Mrčela, whose contribution has been acknowledged and cited in the references.*

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