

PRELIMINARY STUDIES REGARDING THE DESIGN A SPIRAL OF HERBS

STUDII PRELIMINARII PRIVIND PROIECTAREA UNEI SPIRALE DE PLANTE AROMATICE

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Abstract. In the modern agriculture is a new trend, that of replacing cultivated areas with unproductive ornamental plants with productive vegetable species, using natural cultivation systems, with the purpose of educating young people, obtaining satisfaction by producing their own food, reducing (avoiding) the polluting factor and using leisure in a pleasant way. Against the background of reduced incomes or changes in the employment situation, the pandemic caused by COVID-19 caused changes in the perception of Romanians, in terms of food, housing, job, etc., a rethinking of lifestyle and a return to a minimalist and healthy life style. The new systems for growing vegetable, aromatic and spicy plants are inspired by nature. Thus, a non-conventional model for growing vegetable plants is the concept of spiral. A perfect concept to highlight a series of modern principles and ethics, based on a harmonious and efficient combination of new ideas and solutions, which can cope with economic, social and even climate change.

Keywords: unconventional cultivation systems, spiral of aromatic plants, climate change

Rezumat. Există o nouă tendință în agricultura modernă, aceea de a înlocui spațiile cultivate cu plante ornamentale neproductive cu specii productive de legume, folosind sisteme naturale de cultivare, în ideea educării tinerilor, obținând satisfacții prin producerea hranei proprii, reducând (evitând) factorul poluant și utilizarea timpului liber în mod plăcut. Pe fondul reducerii veniturilor sau schimbării situației ocupaționale, pandemia produsă de COVID-19 a determinat modificări în percepția românilor, în ceea ce privește alimentația, locuința, job-ul etc., o regândire a stilului de viață și o reîntoarcere la un stil de viață minimalist și sănătos. Noile sisteme de cultivare a plantelor legumicole, aromatice și condimentare se inspiră din natură. Astfel, un model nonconventional de cultivare a plantelor legumicole, îl reprezintă conceptul de spirală. Un concept perfect pentru a pune în valoare o serie de principii și etici moderne, bazate pe o îmbinare armonioasă și eficientă de idei și soluții noi, ce pot face față schimbărilor de natura economică, socială și chiar climatică.

Cuvinte cheie: sisteme neconvenționale de cultivare, spirala de plante aromatice, schimbări climatice

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INTRODUCTION

Unconventional agricultural systems have emerged as an alternative to conventional agricultural systems, inspired by philosophical concepts, aimed at obtaining "clean" vegetable products, stopping the processes of erosion and pollution of agricultural ecosystems, and their regeneration (Davidescu and Davidescu, 1994; Stoleru, 2013).

The spiral of aromatic plants is a concept, which combines a two-dimensional pattern (spiral) with a three-dimensional pattern (lifting - earthenware), forming a living "construction" with a pleasant and useful appearance, in which several microclimates are present, which generates a series of synergistic effects (Hazelip, 2014).

The soil is a living organism, and the matter of which it is composed is animated, dynamic and complex, which hosts bacteria, fungi and a huge number of invertebrates and vertebrates (Munteanu and Stoleru, 2012).

Today, we are on a new path, in this long history of humanity. It is good to be aware of what brought us in the current situation, in order to radically change our behavior and habits, to be able to participate in the development of a different way of life and a different culture.

In a natural landscape, we will meet a sophisticated and complicated network of connections and energy flows. If we try to create landscapes using a strictly objective point of view, we will awkwardly and non-functionally design, because all living systems are more than the simple sum of their parts (Hemenway, 2015; Holmgren, 2014; Mollison, 1979).

MATERIAL AND METHOD

The construction of a spiral of aromatic plants is done by exploiting the sun exposure, depending on the requirements of the plants for light and soil quality. Determining the place for the spiral of herbs is important, taking into account that herbs have different needs, in terms of the amount of light, the chosen place should be partly in the sun and partly in the shade (Hazelip, 2014).

The dimensions of a spiral of aromatic plants vary between 1.5-1.8 m to 2 m in diameter (6-9 m linear) and about 1-1.5 m high.

The shape of the spiral creates favorable microclimate areas and offers the possibility of a different sun exposure. It is often inspired by patterns found in nature, such as: snail shell, ram's horns, the shape of a galaxy, etc. The wavy shapes, the circle and the curves, have a very pleasant appearance and also surprising in the cultivated gardens (Hazelip, 2014; Ross, 2005).

The plant species that can be used to create a spiral of aromatic and spicy plants must be compatible plant species, such as: rosemary (*Rosmarinus officinalis*), sage (*Salvia officinalis*), lavender (*Lavandula angustifolia*), thyme (*Satureja hortensis*), majors (*Origanum majorana*), oregano (*Origanum*

vulgare), hyssop (*Hyssopus officinalis*), tarragon (*Artemisia dracunculum*), nasturtium (*Traste) majus*), hypericum (*Hypericum perforatum*), parsley (*Asclepias / Parsley Hortense*), dill (*Anethum graveolens*), chervil (*Tentsio chervil*), basil (*Ocimum basilicum*), melissa (*Melissa officinalis*), mint (*Mentha piperita*), valerian (*Valeriana officinalis*), borage (*Borago officinalis*), caraway (*Carum carvi*), etc. (Hazelip, 2014; Hemenway, 2015; Stan et al, 2003).

This present scientific study has many objectives:

1.To promote the concept of spiral of herbs, among young people in particular and especially among the students studying about this field at specific universities.

2.To suggest alternative ideas of designing and reorganizing theown gardens, parks and unused spaces of cities.

3.To promote a healthy lifestyle and mentality, providing enough food to sustain the population's needs and using unconventional agricultural systems (synergic agriculture).

4.To provide a framework for relationships with other people, in order to create sustainable communities.



Fig. 1 Spiral of herbs

(<https://chinapdv.com/amenajare-a-teritoriului/spirala-din-plante-se-construieste-imagini/>)

RESULTS AND DISCUSSIONS

A spiral of herbs teaches us to master a model that brings benefits and it is important to understand the relevance of organic, seemingly irregular patterns in nature, which can be inspiring, proposing solutions for human systems.

The combination between the two natural models - the spiral and the earth mound - has a number of advantages, among which we mention (Hazeliş, 2014):

- Vertical plant stratification saves space, if you do not have too much surface;

- It is easy to maintain: the stones accumulate heat during the day, and pass it on to the plants at night;

- The soil becomes rich in organic matter and nutrients;

- It ensures a good development of perennials;

- Harvesting is easy: the high structure makes harvesting and caring for plants less demanding;

- Plants grown in association with other compatible plants have shown better "defense" and, as a result, better resistance to disease and pests compared to monoculture (Fortier, 2018);

- A diversity of plants ensures balance through a different consumption of nutrients from the soil (Howard, 1984; Munteanu and Stoleru, 2012);

- A diversity of microorganisms creates food chains, which ensure the prey-predator balance, having positive effects;

- The conservation of species, the encouragement of the use of local species, diversified in associated cultures can be easily put into practice in a spiral of aromatic plants.

The recommendations, regarding the construction of a spiral of aromatic plants, refer to some practical indications (Hazeliş, 2014; Hemenway, 2015):

- Construct the spiral of herbs in a clockwise direction, taking into account the cardinal points, N / S exposure.

- Insert a bowl of water on the N side to attract beneficial birds, animals and insects.

- Use plants that you use very often.

- Combine aromatic plants with: salad, flower-tagetes, medicinal plants, etc.

- Use recyclable materials, which you have at hand: stone, wood, bricks, bottles, etc.

- The land will be mulched with straw, wood chips, etc.

CONCLUSIONS

A good design depends on a free balanced relationship with nature, in which the careful observation and interaction provides inspiration for the project. This way we can wearily design with a solution of reduced energy.

It tempts us to create landscapes using a strictly objective point of view, so these designed systems become non-functional.

It is important to understand the relevance of organic, seemingly irregular patterns in nature, which can be inspiring, proposing solutions for human systems.

We must learn to save and preserve energy on a long term so that the future generations could enjoy a decent life, too.

Man is a specific consumer of energy, guiding himself by the most important yet non-renewable sources of energy on Earth.

The waste resulted from an activity (process) turns into resource for another activity, recycling. Sources of renewable energy are: the soil, the water, the trees, the seeds etc.

The issue of biodiversity is also a hotly debated topic by researchers, leading to a rapid public recognition of the loss, at a rapid pace, of biodiversity, largely caused by the human factor.

We are trying to fundamentally redesign it, in order to create strategies for conserving biodiversity, so that it becomes a precious and functional part of the world in which we live.

We conclude by saying that we must understand change, using it deliberately and creatively. We must have the ability to design, intervening beyond what we have under control, reacting and adapting to change.

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