

## STUDIES REGARDING PRODUCTION AND USE OF ORGANIC MEDICINAL AND SPICE PLANTS

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**Key words:** organic, agriculture, medicinal, spice, plants

**Abstract:** Romania has tradition and a great potential to improve its production of medicinal and spice plants. Whether this important potential is used within the organic farming system, this will create new opportunities for small farmers.

Medicinal and spice plants grown within the organic farming system could have a significant contribution to the following aspects: clean agriculture, new technologies, healthy products, environmental protection and conservation of the natural resources.

In Romania, there are possibilities to produce and obtained organic medicinal and spice plants products.

### INTRODUCTION

Medicinal and spice plants have been into attention of the humankind even since the beginning of its existence, because of their healing power, widespread on every meridian of the planet, easiness of harvest and therapeutic use. These plants began to be cultivated since the ancient times, and because of the high demands in raw plant matter, growing the medicinal plants has become a necessity lately (Bojor O., O. Popescu, 2001).

Production and use of medicinal and spice plants in an organic farming system is an alternative to the conventional agricultural production by promoting clean agricultural technologies which exclude chemical synthesis substances, but also by promoting healthy agricultural products that ensure the consumer's welfare, environmental protection and natural resources conservation (Ion V, et al., 2004; Bășa A.Gh. et al., 2007).

Organic farming system is especially important when it is related to the production of medicinal and spice plants, which themselves are intended mainly to ensure the consumers' health, and by definition, these plants should be free of synthetic chemical residues (pesticides and chemical fertilizers) (Ion V, et al., 2004; Bavec F., Bavec Martina, 2007).

Medicinal and spice plants have particular importance from the economic point of view, as they contribute to the development of sustainable agriculture in countries whose natural resources are devalued and population is increasing continuously. The poverty in urban and rural areas can result in healthy problems that can be treated by the help of the medicinal plants. The high content in different active substances of these species (such as essential oils, natural antioxidants etc.) is a natural source for human health.

### MATERIAL AND METHODES

Our researches have started from the statistical databases belonging to the Ministry of Agriculture and Rural Development regarding the production of medicinal and spice plants in Romania. Further we carried out a national market analysis concerning the purchase and use

of medicinal and spice plants, this been consisting of 515 respondents in 32 counties, plus the city of Bucharest. The market analysis is a quantitative method of collecting information, the questionnaire used been an instrument of investigation.

The most significant share of our research was recorded by the respondents of Muntenia (79% of all persons interviewed), followed by those in Transylvania, Moldova and Oltenia regions. Of all persons interviewed, respondents from the urban areas represented 59% and those in rural areas 41%.

Our reasearch included people aged between 14 years and over 55 years, with different levels of education (elementary education, high school or university) and different occupations (pupils/high-school and university students, workers, civil employees in state / private entrepreneurs, pensioners, disabled households, unemployed persons).

## RESULTS AND DISCUSSIONS

Because of its geographic position, the varied relief and the climate favorable to the development of a very rich spontaneous flora, Romania displays one of the most characteristic flora of the European continent. The territory of our country is the meeting point of the Central European, Mediterranean and Euro Asiatic flora, which explains why in Romania there are known over 3700 species by their phyto-therapeutic action, out of which 800 species have renowned phyto-therapeutic properties, 370 species are acknowledged as having pharmaco-dynamic effects, and 50 species are cultivated (Istudor Viorica, 1998).

In 1950, the cultivated area with medicinal and spice plants was 0.1% of the arable area of the country, reaching 0.2% in 1956. From 1400 hectares cultivated with medicinal and aromatic plants in 1950, the area increased to 38500 hectares in 1978.

In 1989, the assortment of medicinal and spice plants cultivated included 65 species. The areas grown with medicinal and spice plants decreased significantly, from approximately 45000 hectares before 1989, at approximately 9529 ha in 2003, 80% of this area being cultivated with coriander.

Currently, the most medicinal and spice plants grown in Romania are coriander, cumen, anise, white mustard, milk thistles, fennel, balm, pot marigold, mint, sage, artichoke, basil, hyssop, heliotrope, chamomile, garden mallow, lavender, and French marigold.

In Romania, the cultivated area with medicinal and spice plants has been fluctuating over the past few years, rising from 5138 hectares in 2001 to 10766 hectares in 2007. In 2008, according to the spring crops sowing record, medicinal and spice plants are present on 5294 hectares (after Ministry of Agriculture and Rural Development).

In 2006, according to the Ministry of Agriculture and Rural Development, 926 hectares were cultivated with medicinal and spice plants in an ecological system, out of which 47 hectares with tamarisk, mint, milk thistles, sage, garden mallow and mint. Also in 2006, the collection of medicinal and spice plants organically certified out of the spontaneous flora covered an area of 39000 hectares.

The production and marketing of medicinal and spice plants has developed into a large economic activity, which is a source of income for producers, traders and various processors.

In 2006, in Romania there were 8 medicinal and spice plants processing units, out of which 3 processors of cultivated medicinal and spice plants, and 5 processors of spontaneous medicinal and spice plants.

In the year 2007, there were 23 registered producers of medicinal and spice plants cultivated in an organic farming system. Most manufacturers of medicinal and spice plants cultivated in an organic farming system are located in the following counties: Constanța

(7 producers), Tulcea (2 producers) and Vâlcea (2 producers), followed by other counties such as: Ialomița, Călărași, Olt, Argeș, Hunedoara, Arad, Cluj, Mureș, Harghita, Bacău, Vrancea and Bucharest.

Our research recorded high frequency of consumption of medicinal and spice plants, i.e. 99% of the total respondents. Medicinal and spice plants are consumed by all family members. The rural area noted an increased consumption of medicinal and spice plants in comparison with the urban areas.

The interviewed respondents buy medicinal and spice plants, but also they are gathering the plants from the spontaneous flora and / or from their own garden. The urban respondents choose to purchase medicinal and spice plants, while the respondents in rural areas are using medicinal and spice plants particularly from the spontaneous flora and their own gardens (figure 1).

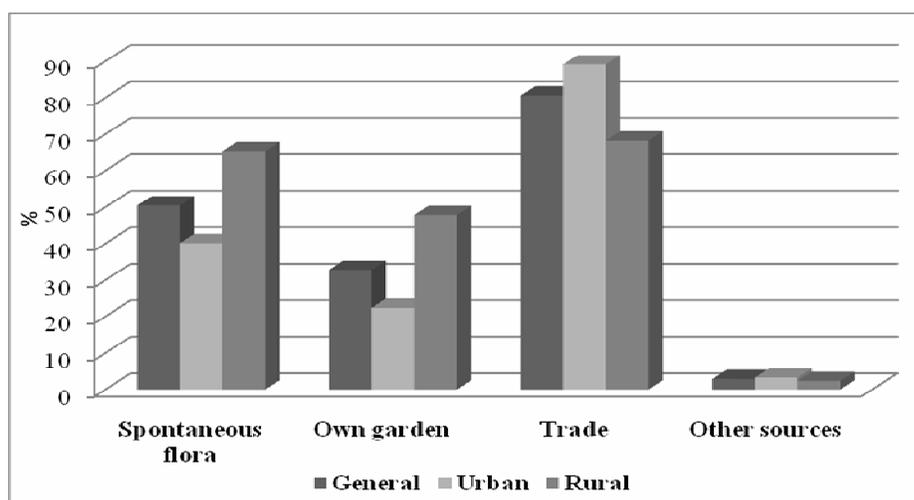


Fig. 1 – Source of medicinal and spice plants

If medicinal and spice plants are purchased from commerce, then they are bought from pharmacies and specialised stores, shops, supermarkets and agrifood markets (about 20%). Only 8% of respondents buy products from organic shops (figure 2).

In more than 55% of cases, the purchase of medicinal and spice plants from commerce is done once a month or, in a rate of 20%, once a week (figure 3).

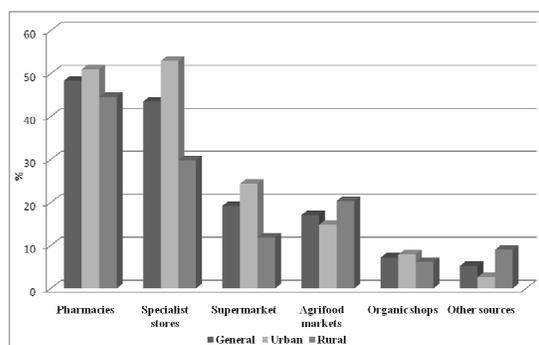


Fig. 2 – Buying of medicinal and spice plants

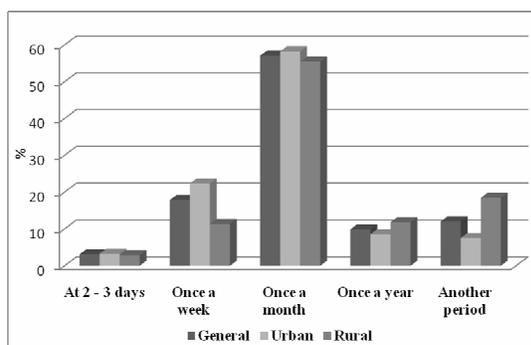


Fig. 3 – Frequently buying of medicinal and spice plants

The medicinal and spice plants are mainly used as infusion (90%), ointments (40%), tinctures - decoction (30%), plus other forms, and also as macerates, volatile oils, medicinal wine, cataplasms, etc. (figure 4).

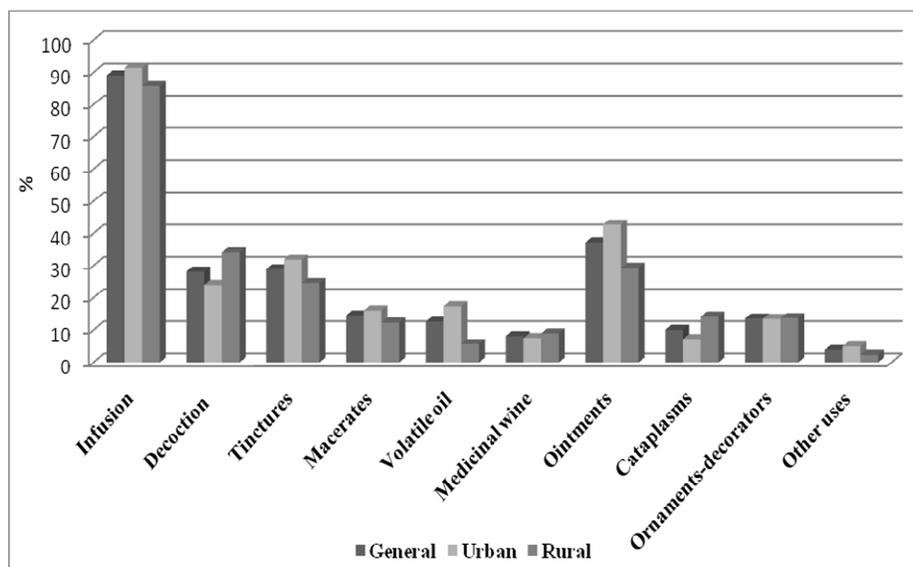


Fig. 4 – Form of using medicinal and spice plants

Of the total persons interviewed, 30% of them are consuming daily medicinal and spice herbs, 25% every 2-3 days, and 25% weekly (figure 5).

The interviewed respondents are consuming more frequently the following medicinal plants: chamomile, linden, St John's wort, mint, marigold, yarrow, and tamarisk. Also, the interviewed respondents are consuming more frequently the following spice plants: mint, thyme, basil, dill, laurel, parsley, lovage, pepper, lavender.

Respondents therapeutically assign medicinal plants to the medication in over 65% of cases. On the other hand, over 45% of the respondents are using medicinal plants only according to the doctor's prescription (figure 6).

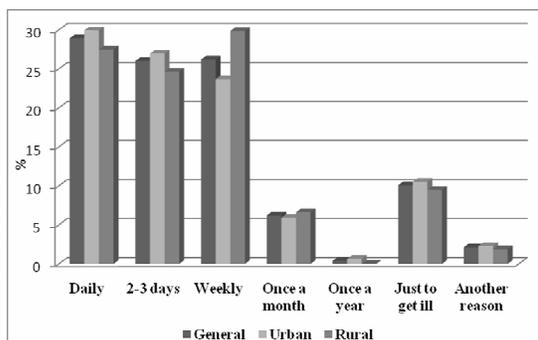


Fig. 5 – Medicinal and spice plants frequency use

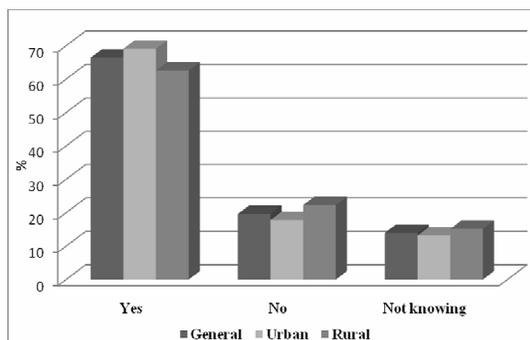


Fig. 6 – Association of medicinal plants with medication

Most respondents said they are informed of and they are interested in organic products. However, it was noted that 25% of the respondents from the rural area do not know anything about organic products (figure 7).

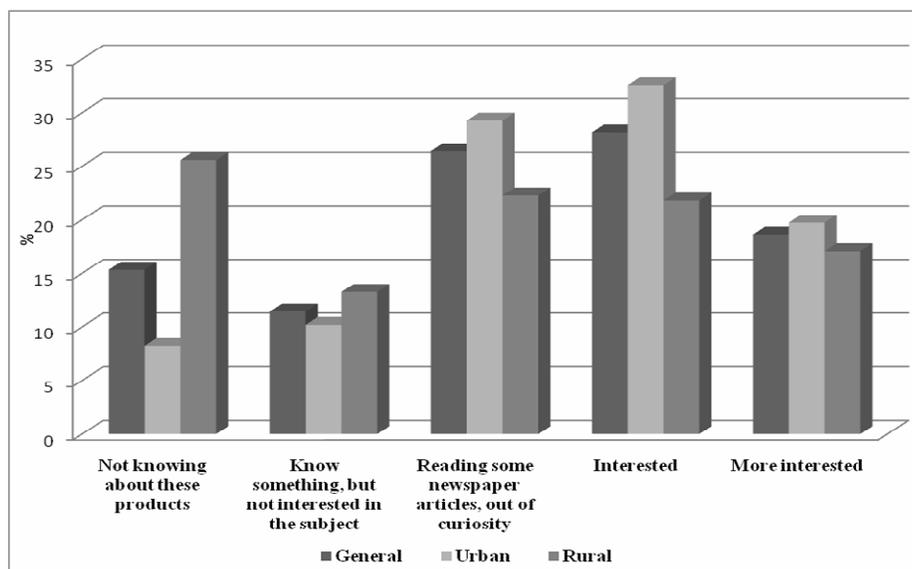


Fig. 7 – Information level of population about organic products

Over 40% of the total interviewed said that they are purchasing organic medicinal and spice plant products (figure 8).

Over 25% of the respondents are willing to pay a higher price for medicinal and spice plants that are organically certified (figure 9).

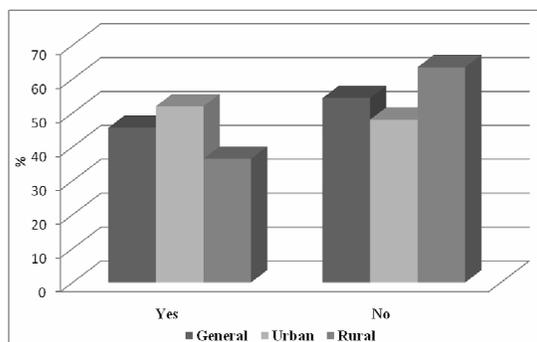


Fig. 8 – Buying of organic medicinal and spice plants products

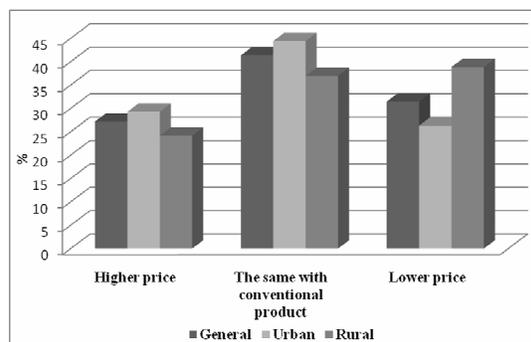


Fig. 9 – Buying price for organically certified medicinal and spice plants

## CONCLUSIONS

Because of the new ideas and practices, organic agriculture could be seen as an alternative that could solve some problems of the contemporary world.

Medicinal and spice plant production and use in an organic farming system is an alternative to the conventional agricultural production by promoting clean agricultural technologies which exclude chemical synthesis substances, and also by promoting healthy agricultural products in order to ensure the consumers' welfare, environmental protection and conservation of natural resources.

Medicinal and spice plants represent a significant natural wealth of our country, as their importance is given by their economic and social value, as well as by their therapeutic and nutritional role.

Although medicinal and spice plants are known and used since ancient times as therapeutic and food products, it is necessary to promote them, popularize and give correct information on their medicinal and nutritional value.

According to the national market analysis concerning the purchase and use of medicinal and spice plants, the following conclusions can be withdrawn:

- Of the total respondents, 99% are using medicinal and spice plants.
- In 49% of cases, all family members are using medicinal and spice plants.
- Medicinal and spice plants are purchased mainly from commerce (over 80%) and / or spontaneous flora (50.5%) and / or own garden (32.8%).
- In the case of medicinal and spice plants purchased from commerce, they are bought mainly in pharmacies and / or specialized stores.
- The frequency of family supplies with medicinal and spice plants are usually once a month.
- Medicinal plants are used in 90% of cases as infusion.
- 30% of respondents are consuming daily preparations / products made of medicinal and spice plants.
- The most commonly used medicinal plants are: chamomile, linden, St John's wort, mint, marigold, yarrow, and tamarisk.
- The most commonly used spice plants are: mint, thyme, basil, dill, laurel, parsley, lovage, pepper, lavender.
- 65% of the total respondents are associating the medicinal plants with synthetic drugs, and over 45% of them are using medicinal plants only according to the medical advices.
- Most respondents are considering that they are informed and interested in organic products, with large differences between urban and rural areas (25% of the rural respondents are saying that they have no information on any organic product).
- Over 40% of the respondents are saying that they usually purchased organically certified products resulting from medicinal/spice plants and honey bees.
- Over 25% of the respondents are willing to pay a higher price for organically certified medicinal and spice plants.

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