

EVALUATION OF THE VALUE CHAIN IN THE CULTIVATION OF MEDICINAL PLANTS WITH THE PURPOSE OF OPTIMIZING THEIR VALUE IN THE FORM OF ORGANIC TEAS

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Introduction

In the context of increasing demand for natural and organic products, the valorization of medicinal plants in the form of organic teas represents a promising direction for consumer health and sustainable development of agriculture. Ionna Plant SRL has developed an integrated production model that ensures superior quality, traceability and sustainability. The objective of this paper is to evaluate the value chain applied by the company, from the selection of seedlings to the finished certified organic product.

Material and Method

The study was conducted in collaboration with the Buzău Vegetable Research and Development Station. The methodology included:

- **Obtaining plant material:** seedlings were selected based on criteria of bioactive content, adaptability and yield.
- **Organic cultivation technology:** without the use of pesticides or synthetic fertilizers; integrated pest control and efficient irrigation.
- **Organic certification:** products are verified by an accredited body.
- **Phytochemical analyses:** the content of essential oils, flavonoids, tannin, alkaloids, glucosinolat, saponins, phenolic acids was quantitatively evaluated
- **Processing:** harvesting was carried out at the optimal time; drying and packaging were carried out in a controlled environment, to maintain quality.

Results and Discussion

Analyses have shown that plants grown and processed in an organic system retain a high content of bioactive compounds:

- **Flavonoids:** with antioxidant and antimicrobial role
- **Saponins and alkaloids:** support the nervous system, general well-being
- **Tannins and phenolic acids:** anti-inflammatory properties and blood sugar regulation

IONNA PLANT organic teas are distinguished by excellent organoleptic quality, high content of active principles, full traceability and sustainable packaging. They offer real benefits in combating oxidative stress, supporting immunity and mood. Example (Table 1)

Table 1. Nutritional analysis of the product ISOP – IONNA PLANT SRL
Comparison with values from the specialized literature for similar vegetable products.

Parameter	ISOP value	Comparable values (literature)	Conclusion
Dietary fiber	51,9 g/100 g	Bran: 43 g Psyllium: 70-80 g	very high value
Protein	17,4 g/100 g	Lentils: 25 g Quinoa: 14 g	excellent protein profile
Total sugars	3,6 g/100 g	Dried fruits: 30–60 g	low in sugars
Total fat	2,4 g/100 g	Oilseeds: 30–50 g	low in fats
Omega-3 (ALA)	1,1 g/100 g	Nuts: 9 g Flax 17 g	good non-oily content
Energy value	240 kcal/100 g	Nuts: 600 kcal Cereals: 300–400 kcal	low calorie density
Sodium	0,0012 g/100 g	Permissible limits < 0,5 g	very low content

Conclusions

The model applied by Ionna Plant SRL demonstrates the efficiency of integrating research, genetic selection, organic farming and modern processing to obtain higher value products. This approach provides a viable example for expanding organic value chains and creating functional products with real impact on health.

Hyssopus officinalis is among the richest plant products in dietary fiber, which makes it excellent for regulating intestinal transit, supporting microbiota, and reducing the risk of metabolic diseases.

Hyssopus officinalis falls into the category of functional plant products with high nutritional value, comparable to other products based on dried leaves, pulberil or prebiotic fibers. Recommended as a base in:

- food supplements;
- functional drinks;
- detoxification mixtures;
- dietary foods rich in fiber and protein, but low in calories and fat.

Selective bibliography:

1. USDA FoodData Central – for nutritional values of lentils, nuts, cereals etc.US Department of Agriculture. FoodData Central. 2019. <https://fdc.nal.usda.gov/>
2. MUNTEANU, N., et al. (2016) – Medicinal and aromatic plants – Technological guide, Ed. Ion Ionescu de la Brad, Iași – for estimated values for dried leaves.
3. Codex Alimentarius and Reg. (UE) 1169/2011 – for indicative values regarding daily intakes, sodium limits, sugars etc
4. MÎRZAN, O., et al. Research regarding the technological sequences influence on the productivity of *Lophanthus anisatus* (Lofantus) species in the central Moldova pedoclimatic conditions. 2021..

Cultivation technology – with mulch film and drip irrigation

1. **Land preparation:** deep plowing (25-30 cm), then discing and leveling.
2. **Basic fertilization:** incorporation and administration of mineral fertilizers, according to the nutritional requirements of the plant.
3. **Installation of the drip system:** placement of drip hoses in rows (check pressure, uniformity and tightness).
4. **Installation of the mulching film** (anti-weed texagril): the film is placed over the rows, with fixing on the edges. It is cut at the established planting distances.
5. **Planting seedlings:** healthy, well-hardened seedlings, planted manually in the foil cuts. Watering immediately after planting.
6. **Maintenance work:** drip irrigation, adapted to the phenophase and climate. Fertiligation, if necessary, with compatible nutrient solutions. Regular phytosanitary monitoring and gentle interventions, in accordance with standards for medicinal plants.
7. **Harvesting** (to high quality standards): is done exclusively by hand, with clean gloves, to avoid contamination of the product.
8. **Quality control:** samples are collected for analysis from each batch. A physico-chemical and microbiological analysis report is carried out, in collaboration with an accredited laboratory:
9. **Quality control:** samples are collected for analysis from each batch. A physico-chemical and microbiological analysis report is carried out, in collaboration with an accredited laboratory (moisture, volatile oil, content of active principles, purity, heavy metals, pesticides, contaminants)
10. **Drying and processing:** drying is done in clean, ventilated spaces, away from direct sunlight. Temperature controlled to preserve the active compounds. Packaging is done in certified materials, appropriately labeled (batch, harvest date, origin).

