IS THE CULTIVATION OF PLANTS FOR TEXTILE FIBERS A PROFITABLE BUSINESS FIELD?

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Abstract: *In traditional Romanian culture, hemp is one of the main plants from which fibers are obtained, along with flax. Flax and hemp have been part of the dowry of the Romanian people since the most distant times when they were cultivated and processed in the household system as almost every peasant family made their own clothes. In the last 30 years, the area cultivated with plants for textile fibers has registered a sharp decline. If in 1990 the area occupied by hemp culture was 16,629 ha, in 2020 hemp culture occupied only 1,191 ha, even though hemp has many uses, including obtaining construction materials, paper, food, medicine, cosmetics. In 2021, the cumulative turnover of the 13 companies active in the field of plant cultivation for textile fibers was 6,088,910 lei (1,237,482 euros), registering an average increase in the last 10 years of 204.73%.*

Key words*: business, hempt, profit, turnover*

INTRODUCTION

According to definition given by FAO, fibre crops are those annual crops yielding vegetable fibres which are utilized by the textile industry to obtain first thread and yarn, and, from these, innumerable fabrics or manufactures [12].

Fiber crops represents an important group of economic crops who produce fiber as raw materials for diverse uses. To attain the economic side, fiber crops need to produce high quantities of cellulose which can be easily extracted for downstream processing. According to United Nations Food and Agriculture Organization data, Asia and America own the majority of areas covered by fiber crops, America produces arround 50% of the world total production and Asia arround 33% [5,7,8].

Depending on the part(s) of the plant from which fibers are extracted, fiber crops can be classified as: seed fiber (cotton, coconut husk coir, kapok, milkweed, and luffa), bast fiber (flax, hemp, kenaf, jute, nettle, and ramie), leaf fiber (sisal, abaca, yucca, phormium, bowstring hemp, and henequen), grass fiber (silver grass, reed, and bamboo), palm fiber (windmill palm, Palmyra palm), and woody fiber (jarrah) (Table 1) [2,4,8].

While technological advances over the past two centuries have led to man-made fibers replacing a significant proportion of natural plant fibers for human use, due to our increased recognition of their environmental and human health benefits, there is renewed interest in natural fibers in many quarters of the world [1,3].

Table 1.

Major types of commercial fiber crops and their distributions around the world

Group	Crop	Distribution	Applications
Seed fiber	Cotton (*Gossypium hirsutum*)	China, USA, India, Brazil, Mexico	Textiles, cottonseed oil
	Sponge gourd (*Luffa cylindrica*)	China, Japan, Korea, India (Kerala, Andhra Pradesh)	Used as a bath or kitchen sponge and food
Bast fiber	Hemp (*Cannabis sativa*)	China, Canada, USA, Europe, East Asia, Nepal	Textiles, hempseed oil, prescription drug
	Ramie (*Boehmeria nivea*)	China, Brazil, Philippines, India, Vietnam, Laos, Cambodia	Textiles, soil and water conservation, medicine
	Flax (*Linum usitatissimum*)	France, Russia, Netherlands, Belarus, Belgium, Canada, Kazakhstan, China, India	Linen, flax yarn, flax seed, linseed oil
Leaf fiber	Sisal (*Agava sisalana*)	Brazil, Tanzania, Kenya, Madagascar, China, Mexico, Haiti, Venezuela, Morocco, South Africa	Making rope, twine, paper, cloth, wall covering and dartboards
Grass fiber	Silvergrass (*Miscanthus sinensis*)	China, Japan, Korea, USA	Ornamental plant, bioenergy production
	Reed (*Phragmites australis*)	Northern Hemisphere	Used in phytoremediation, protecting shoreline from bank erosion, and serving as a food source or habitat protection for arthropods, birds and mammals.
Palm fiber	Windmill Palm (*Trachycarpus fortunei*)	China, Japan, India, Burma	Making rope, coir raincoat, brown bandage, carpet, brush and filling material for sofa, medicine, ornament
Woody fiber	Jarrah (*Eucalyptus marginata*)	Australia	Structural material for bridges, wharves, railway sleepers, ship building and telegraph poles, medicine

Source: Fiber Crops, available on https://encyclopedia.pub/entry/1229

Flax and hemp have been part of the dowry of the Romanian people since the most distant times when they were cultivated and processed in the household system as almost every peasant family made their own clothes. [10,13,15] In the last 30 years, the area cultivated with plants for textile fibers has registered a sharp decline [14]. In 1990 the area occupied by hemp culture covered 16,629 ha. Currently, the areas cultivated with textile plants in Romania are reduced, if we take into account the country's history regarding the cultivation and processing of textile plants. (Table 2)

Table 2.

The area cultivated with textile plants in Romania (thousand ha)

	2018	2019	2020
Total textile plants	1.5	1.4	1.2
Flax	0.1	-	-
Hemp	1.4	1.4	1.2

Source: Anuarul Statistic al României 2021, Institutul Național de Statistică

According to the data provided by the Romanian Institute of Statistics, in 2020 the area cultivated with textile plants was 1.2 thousand hectares, and the total production recorded was 3.0 thousand tons (2,467 kg/ha). (Table 3)

Table 3.

Total production of textile plants in Romania (thousands of tons)

	2018	2019	2020
Total textile plants	2.9	3.2	3.0
Flax	0.1	-	-
Hemp	2.8	3.2	3.0

Source: Anuarul Statistic al României 2021, Institutul Național de Statistică

The purpose of the article is to present the evolving Romanian businesses related to the cultivation of plants for textile fibers in terms of financial performance in the period 2012-2021.

MATERIALS AND METHODS

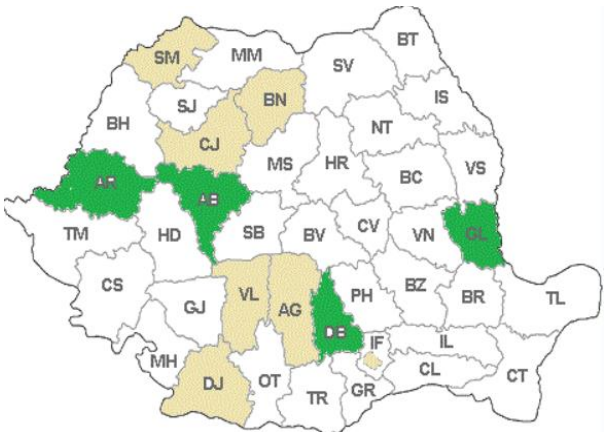
Establishing the article's aim, choosing and researching the relevant specialized literature, evaluating statistical reports, analyzing and interpreting the data, and drawing conclusions are the procedures that went into its production.

The article's authors employed statistical observation as a research technique to carry out the suggested purpose. The data from the statistics reports and the specialized literature listed in the bibliography were analyzed and interpreted to produce the information offered in the article. The development of textile plant culture and financial performance indicators were presented graphically.

RESEARCH RESULTS

In Romania, the cultivation of hemp is allowed only with the authorization of the Ministry of Agriculture and Rural Development and only of 12 species that appear in the Official Catalogue of Cultivated Plant Varieties in Romania.

In 2021, 13 companies whose activity was the cultivation of plants for textile fibers were registered in Romania. Regarding their spread on the territory of Romania, as can be seen in figure 1, the companies whose activity is the cultivation of plants for textile fibers are in counties such as Alba, Arad, Argeș, Bistrița-Năsăud, Cluj, Dâmbovița, Dolj, Galați, Satu-Mare, Vâlcea and Bucharest, but only those from Arad, Alba, Dâmbovița and Galați counties recorded financial results [9,11].



Companies with revenue:
Alba – 5,405,293
Arad – 251,485
Dâmbovița – 366,867
Galați – 65,265

Companies without revenue:
Argeș
Bistrița-Năsăud
Cluj
Dolj
Satu Mare
Vâlcea
București

Figure 1. Distribution by counties of companies whose activity is the cultivation of plants for textile fibers

Source: processed after data provided by Sectorial Study. Cultivation of plants for textile fibers, 2021

According to the data provided by Sectorial Study. Cultivation of plants for textile fibers, 2021, the number of companies whose activity is the cultivation of textile plants, the number of employees and the average number of employees has not registered major changes in the last 10 years. (Figure 2)

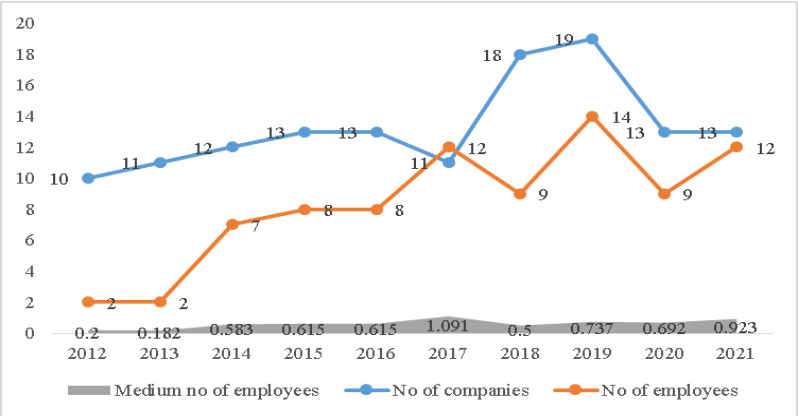


Figure 2. Evolution of Romanian businesses related to cultivation of plant for textile fibers

Source: processed after data provided by Sectorial Study. Cultivation of plants for textile fibers, 2021

Regarding the evolution of the main financial indicators (turnover, net profit and profit margin) between 2012 and 2021, an increase in the turnover after 2014 and a fluctuating evolution of the net profit and net profit margin can be observed, in most years its value being negative. (Figure 3)

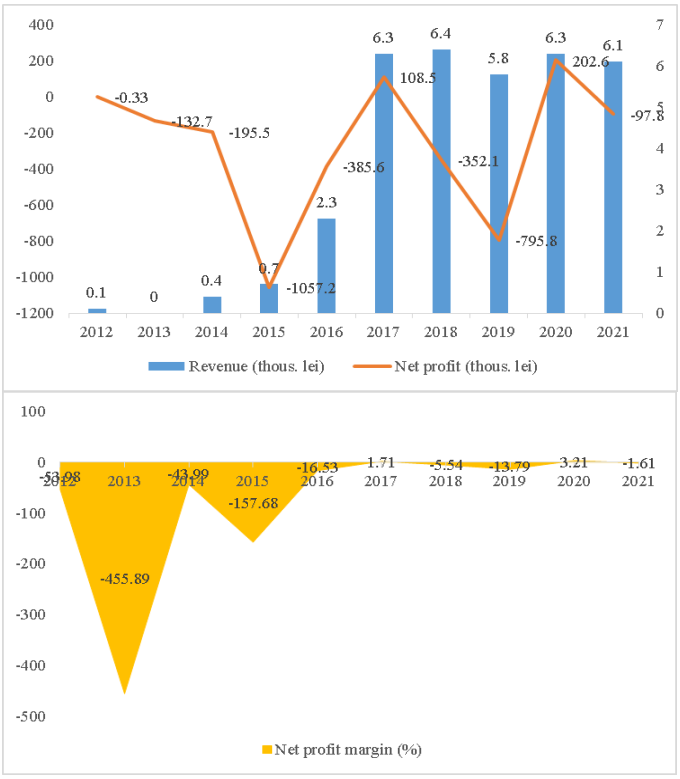


Figure 3. Evolution of main financial indicators

Source: processed after data provided by Sectorial Study. Cultivation of plants for textile fibers, 2021

With a profit margin of -1.61%, an average rating of 4.4 in 2021, according to estimates the field of growing textile plants will register an increase in turnover of 36.39% in the year 2022 compared to the year 2021.

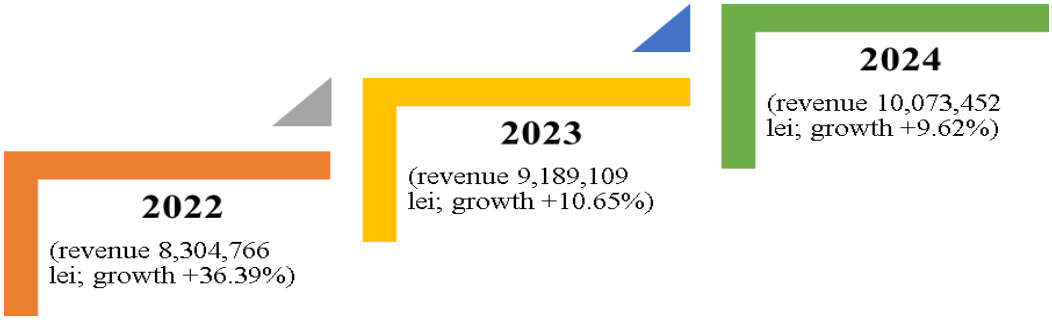


Figure 4. Forecasts of turnover and annual growth

Source: processed after data provided by Sectorial Study. Cultivation of plants for textile fibers, 2021

According to the forecasts, the turnover of the companies whose activity is the cultivation of textile plants will also increase in the coming years. Although the turnover has registered increases, according to the information regarding the financial results, the cultivation of textile plants is not proving to be a profitable business.

CONCLUSIONS

Given the many advantages in agriculture, health, economics, and environmental impact, emphasis can be made on more extensive cultivation of plants for textile fibers.

The creation of items that the market currently needs can greatly simplify labor, improve health, and benefit the environment. The relationship between the growth of the entrepreneurial sector in the regions where hemp-based goods are produced is another significant aspect. Currently, certain items are welcome on the Romanian market, and there is the potential to export specialized hemp-based goods to other nations.

The business of growing plants for textile fibers is in a shadow cone, with the hemp crop caught in a legislative "entanglement" thanks to its controversial relative, marijuana.

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