

Comparative economic study of production and marketing of *Rosmarinus officinalis* (Rosemary) between Arabic Republic of Egypt and India

Shabbara M. H. M., Heba Y. AbdEL-Fatah, Karima A. Mohamed and Haitham B. A. Hassan

Department of Agriculture Economics, National Research Centre, Egypt

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ABSTRACT

Egypt has a lot of ingredients that help the booming cultivation of medical and aromatic plants. The research aims to study the situation of production and marketing for Rosemary crop in the study area in El-Sharqiya in Egypt in comparison with the study area in Champawat state in India. The results showed that the return on capital invested in India reached about 0.99 while it was about 0.54, for the average during the first two years of agriculture, in Egypt. This high return is attributed to marketing efficiency of the crop in India and the existence of an institution that helps the farmers in producing and marketing the crop in the absence of monopoly or middlemen. So, the study recommend 1- Encouraging scientific research institutions and centers to work on improving local and new varieties, aromatic and medicinal plant varieties, improving production and trying to devise early varieties of maturity or having short season so that Egypt can meet the export requirements in a timely manner. 2. Providing cooperative associations that include producers and exporters in order to market and export the products of its members scientifically. 3. Cooperating societies to train farmers to convert them to skilled workers. 4 - Increasing the number of qualified guides in the areas of planting Rosemary. They must urge farmers to use the best varieties recommended in agriculture, with the use of modern methods of fertilization, and statement the best time, the best irrigation methods and the number of irrigations required to achieve the desired goal of the production process. Thus, to obtain the highest net return of the farmer and not only reduce the costs to the minimum by limiting the different stages of marketing, in parallel with removing the crop completely from grasses, and packing the product by good modern packaging to be exported abroad. 5 - Developing rules for loans and subsidies provided to farmers with the speed and flexibility to get the greatest benefit from them.

Key words: Rosemary, production, marketing, return on capital, Egypt, India.

Introduction

The interest in medicinal and aromatic plants has been increased at the heels of the First World War, when make sure that synthetic chemical compounds are not crashing into bodies of Living organisms which leads to their accumulation in various organs, causing health damage. Thus, there is a strong need to move away globally from such vehicles and the tendency to use living organisms including medicinal and aromatic plants (Lambert *et al.*, 1997).

Egypt has a lot of ingredients that help medical and aromatic plants to be flourish, such as climate and the availability of productive factors such as manpower, proper soil and availability of reclaimed land areas (Mostafa, 2016).

Search problem:

Despite all the environmental conditions and the elements necessary for the production of non-traditional agricultural products, such as medicinal and aromatic plants as a promising export crops, which can achieve competition in foreign markets, these kind of crops didn't receive enough attention to each Of the farmers and the State (Al-Bahnasawi, 2016).

Aim of search:

This search aims to study the situation of production and marketing of Rosemary in Egypt and compare it with India to stand on different experiences of States and improve productive mode and

Corresponding Author: Shabbara M. H. M., Department of Agriculture Economics, National Research Centre, Egypt.

catalog in Egypt.

Study area:

To achieve the aim of research two study areas were selected; El-Sharqiya province (30°42'–31°20'N) in Arabic Republic of Egypt, and Champawat state (29°26'–31°28'N) in India. Both are closely similar in climate. The average temperature for the year in El-Sharqiya is 22.1 °C, the warmest month, is July with an average temperature of 28.8 °C and the coolest month is January, with an average temperature of 13.7 °C while in Champawat temperatures are about 24.6, 32.1 °C and 14.3 °C respectively (Phondani *et al.*, 2011).

Method and data sources:

The search was relied on both descriptive and quantitative analysis plus using some statistical methods to economic efficiency measurements.

Data was collected on random basis through personal interviews, structured questioners and group discussions with farmers in the study area in El- Sharqiya Province in 2014.

Results and Discussion

It is thought that the original region of Rosemary crop is native to the Mediterranean, the coasts of North Africa and South Africa (Agriculture, forestry, 2012). Spain, France, Tunisia, Morocco, Lebanon, Balkan countries and America are considered the most important producing countries of this crop. While, Rosemary cultivation was recently started in limited extent in both Egypt and India. It is not popular herb in India. It was limited only in cool places and hill stations.

This crop is exported as dry leaves or fresh grass, but the essential oil extracted from the local variety is not desirable commercially for increasing the proportion of terpenes. Dry leaves are used as basic spices in European kitchens and restaurants. While the essential oil enters in the medicines of urine, to break up and exit stones from the kidneys and increase the secretion of bile and ulceration and osteoarthritis, (Zhang, 1996) As well as, rosemary is used in many food industries, such as keeping meat and fish to get the taste and smell and keep them from the mold as it enters into Manufacture of cosmetics, perfumes, wines and soap.

Rosemary is growing in most types of land, especially limestone, reclaimed and moderately brackish land. This crop has been planting in two periods; the first is in winter during October and November months and the second is in summer during February and March of each year. But winter planting is more favorable to ensure greater success and quickly rate of forming both vegetative and radical system for internodes.

Both production and costs data, in addition with marketing problems were collected by using structured questioners and group discussions with farmers in the study area in El-Sharqiya Province in 2014.

Table (1) shows the production costs for producing one acre of Rosemary. It shows that, production requirements (seeds, chemical and organic fertilizers and irrigation) were around 9000 pounds representing about 60% of total variable costs, while the total cost of service operations (plowing, planning, employment, cultivate, fertilize, irrigate, Pest Control, spraying) were around 4000 pounds representing about 26.7 % of total variable costs. Also, total costs of transport and marking and processing were about 2000 pounds representing around 13.3% of total variable costs of approximately 15000 pounds per an acre plus acre rent during the growing season which was about 3000 pounds.

Calculating return on invested capital, which is one of an efficient standards reflecting the unit efficiency in using money spent to various agricultural operations, turns out that it was about 0.3 to 0.6 for next year.

On the other hand, in terms of marketing and productivity problems that hinder crop cultivation and shortage of its revenue shows that the most important productive problems were represented in; the high level of production costs per acres, small size of holdings, intensive labour with the lack of technical skilled workforce and agricultural guides. These guides will direct farmers to select better species to be cultivated, to methods of modern fertilization, to the best date for planting, better irrigation methods and number of irrigations that must be done.

Table 1: The economics of producing one acres of Rosemary in the study area in El-Sharqiya Province in 2014.

Data	Costs/ EG pound
Production requirements (seeds, chemical and organic fertilizers and irrigation)	9000
Total service operations (plowing, planning, agricultural employment, fertilize, irrigate, Pest Control, spraying)	4000
Transfer, packing and processing	2000
Total variable costs	15000
For rent during the growing season (6 months)	3000
All total costs	18500
Productivity of acre	24000
Net profit / acre.	5500

Source: questioners made with farmers in the study area in El-Sharqiya Province in 2014.

Notice: While net revenue was about 5500 pounds per an acre during the first season, it is expected to reach to 10500 pounds in the next year where 5000 pounds will be provided for not using seeds.

The main obstacles facing Rosemary cultivation are the proliferation of monopoly, the inability of farmers to sell crops at a good price, and the fluctuation of prices and production, and the absence of marketing information. That, for the absence of cooperative societies to assist farmers and guide them on the best ways to market their products, while reducing marketing costs by reducing Different stages and fill product in attractive packages in a bid to export and compete in world markets. They are also responsible for supervising assembly and contract work for farmers, motivate and encourage them to cultivate the Rosemary crop by showing farmers the extent of net revenue to which they will gain from the lucrative cultivation. They also give loans and lucrative subsidies during the stages of production and marketing of various farmers registered with ease and speed of servicing them timely and avoiding intermediaries.

Thus, to compare production and marketing of Rosemary in Egypt with those in India, a field research conducted in India had been referred (Phondani *et al.*, 2011). This study was carried out by field research and random sampling of groups of farmers. The form included data on income and household size in order to evaluate the extent of their dependence on the cultivation of medicinal plants (Rosemary), which was cultivated on a large scale due to the ease of acclimatization to grow in the study area and for increasing demand.

Results of the Indian research showed 65% of the total number of farmers in the sample, selected to cultivate Rosemary, which was cultivated during the period from October to February. The average production of Rosemary there was 25 kg/Nali (about 20.33 kg/acres) with an increase or decrease of 2.7 kg. Table (2) shows the economic return of Rosemary agriculture, where the income was about 3375 Rs with an increase or decrease of about 1.85% and the total agricultural costs amounted to about 1700 Rs with a decrease or increase about 1.92% while the net profit was about 1675 Rs during the year with an increase or decrease of about 1.7%, and return on invested capital was around 0.99. In comparison to the Egyptian and Indian producing and marketing Rosemary in the study areas, we note the high return on capital invested in India, where it reached about 0.99 while it reached only about 0.45, as an average during the first and second seasons, in Egypt with an increase rate of about 54%.

Table 2: Production, Cost-benefit analysis and monetary benefit to local farmers in the study area in India through *Rosmarinus officinalis* Linn. (Rosemary) cultivation/Nali (Phondani *et al.*, 2011)

Data	Value
Prodction (Kg/Nali)	25±2.7 kg/Nali
Income (Rs)	3375±62.4 Rs
Agricultural cost (Rs)	1700±32.7 Rs
Net profit (Rs/year)	1675± 28.3

Note: 1 Hectare=50 Nali

This high return in India is attributed to the marketing efficiency, where Rosemary is not marketed in the study area there without having a certificate from the state government regarding cultivation of Medical and Aromatic plants to learn farming methods. Also, the presence of Herbal

Research and developmental Institute is an agency in the Indian state plays a significant role in stimulating, maintaining and growing the plants. It provides loans and grants to grow these plants and record its farmers so their crop is marketed with the help of the Institute without middlemen (Negi *et al.*, 2010). All farmers must be registered to provide services to them.

Recommendation

- 1- Encouraging scientific research institutions and centers to work on improving local varieties and breeds, importing new varieties and breeds, improving production and trying to devise early varieties of maturity or short season so that Egypt can meet export requirements in a timely manner.
- 2- The need to provide cooperative unions involving producers and exporters in order to market and export the products of its members scientifically.
- 3- Cooperating societies to train farmers to convert them to skilled workers.
- 4- Increasing the number of qualified guides in the areas of planting Rosemary. They must urge farmers to use the best varieties recommended in agriculture, with the use of modern methods of fertilization, and statement the best time, the best irrigation methods and the number of irrigations required to achieve the desired goal of the production process. Thus, to obtain the highest net return of the farmer and not only reduce the costs to the minimum by limiting the different stages of marketing, in parallel with removing the crop completely from grasses, and packing the product in good modern packaging to be exported abroad.
- 5- Developing rules for loans and subsidies provided to farmers with the speed and flexibility of providing those loans to get the greatest benefit from them.

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