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Research Article

PRODUCTION AND CERTIFICATION OF ORGANIC AGRICULTURE IN MEXICO

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Summary

A R T I C L E I N F O

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A B S T R A C T

In Mexico agriculture is one of the most important economic activities, generating value year after year, creating sources of employment and meeting basic food and nutrition needs. However, in this new era for agriculture, the health and sustainability of ecosystems must be prioritized in the face of growing agricultural expansion. Organic agriculture is an agricultural technique alternative that optimizes production, reduces costs and increases profits by eliminating expenses for fertilizers and pesticides, ensuring the protection of the environment, biodiverisity and genetic resources. To achieve organic certification in Mexico it is necessary to prepare in advance both the crop, and the producer which allows to maintain a quality standard in the product. For the following study, data were collected from office sources, statistical information from national and international governmental organizations such as: FAO,IFOAM, SENASICA, SEDECO, Chamber of Deputies, INEGI, among others.

INTRODUCTION

The agri-food market has been trending towards the diversification of organic production globally, with an average annual rate of economic growth of 14.5% (INEGI, 2014).

Organic agriculture is an economic activity with potential in the generation of employment and foreign exchange. Its adoption requires 30% more labor per hectare compared to conventional production, thus contributing to the creation of around 172,000 direct jobs (Schwentesius, Gómez, Ortigoza, & Gómez, 2018).

The FAO International Conference on Organic Agriculture and Food Security (2007) defines organic agriculture as a non-traditional food system. In addition,organic production systems are based on specific and precise production standards aimed at achieving optimal agricultural ecosystems that are socially, ecologically and economically sustainable (FAO Glossary, 2009).

One of the differences between an organic producer and a so-called conventional grower is its selection of pesticides and fertilizers. Organic farmers simply use these supplies that are listed in the Organic Materials Review Institute (OMRI), while conventional producers can use both OMRI-approved materials and any other federally approved pesticides (Bogash, Lamont, Harsh, Kime, & Harper, 2015).

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That is why this agricultural process requires strict supervision to avoid weeds and diseases that can cause serious crop losses, so proper management of approved pesticides and skilled labor is required.

In Mexico, organic production has started since the 1980s, increasing acceptance for local consumers. The trend for consuming organic products is much stronger in societies with high income levels, thus creating a demand for "green" products. In addition to the above, Vargas (2016) points out that the certifiers of organic production increase the costs, thus generating an overprice in the products, which in some cases goes from 20 to 40% compared to its conventional similar.

The growth of organic agriculture has been concentrated in the states of Chiapas, Oaxaca, Veracruz and Michoacán. The state of Tlaxcala, although organic agriculture has been promoted by Non-Governmental Organizations (NGOs) and Higher Education Institutions, through training projects and technical advice, has not had greater growth in terms of organic food production.

METHODOLOGY

For the purposes of this publication, information is collected from official sources such as the International Federation of Organic Agriculture Movements (IFOAM), The Secretariat of Agriculture, Livestock, Rural Development, Fisheries and Food(SIAP),Secretary of Agriculture and Rural Development (SADER), in relation to available literature, reports, official documents and world and national statistical data,inorder to

learn about the organic production in the world and in Mexico.In addition,the cost research of organiccertification in Mexico is carried out, to justify the overpricing paid by consumers of these products.

Organic Agriculture Worldwide

Organic producers worldwide amount to 2.9 million. According to IFOAM information, Asia is the leading continent with organic agriculture, followed by Africa and America in 2017.See chart 1.

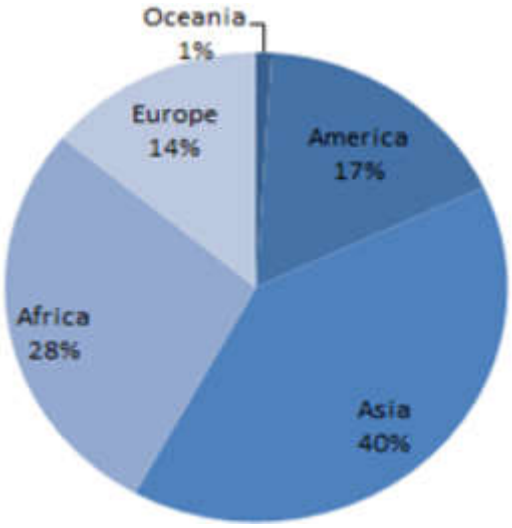

Chart 1 Global distribution of organic producers by region 2017
Source: IFOAM (2019).

India is the country with the highest number of organic producers, having a total of 835,000 as shownin chart2. Mexico is among the ten countries with the highest number of organic producers with a total of 210,000.

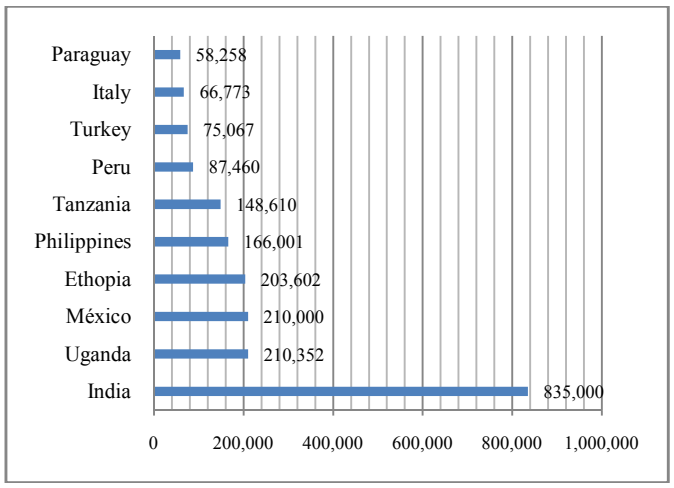

Chart 2 The ten countries with the highest number of organic producers

Source: IFOAM (2019).

For the geographical dimension,is considered the total extent of organically cultivated land, taking Argentina to be the country with the largest geographical dimension with3.39 million hectares grown, followed by China and Uruguay with 3.02 and 1.88 million hectares respectively, Mexicois located in the sixth position with a totalarea of 0.67 million hectares as shown in chart 3.

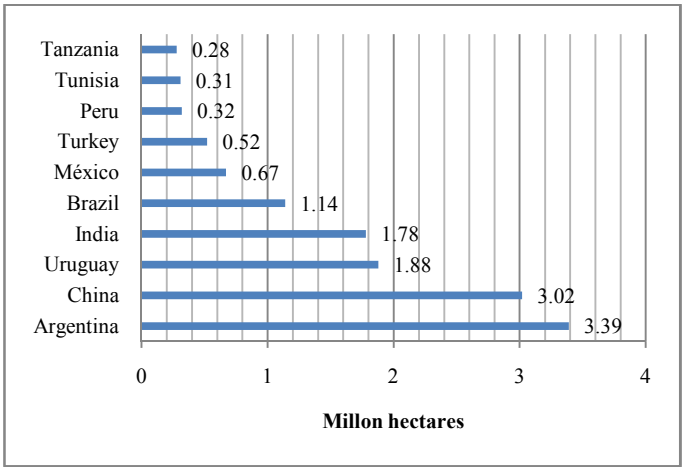

Chart 3 The ten countries with the largest areas of organic agricultural land 2017

Source: IFOAM (2019).

Top organic products in Mexico

Mexico is the third largest producer of organic food in theworld; Oaxaca, Chiapas, Michoacán, Chihuahua and Nuevo León are leaders in the area for this activity, being in the first three states together where 50% of these lands are concentrated, according to information from the Secretariat of Agriculture, Livestock, Rural Development, Fisheries and Food (SIAP, 2018). Also, more than 45 organic foodsaregrown, first of all the coffee stands out by the size of planted area, followed by safflower and avocado as seen in chart 4.

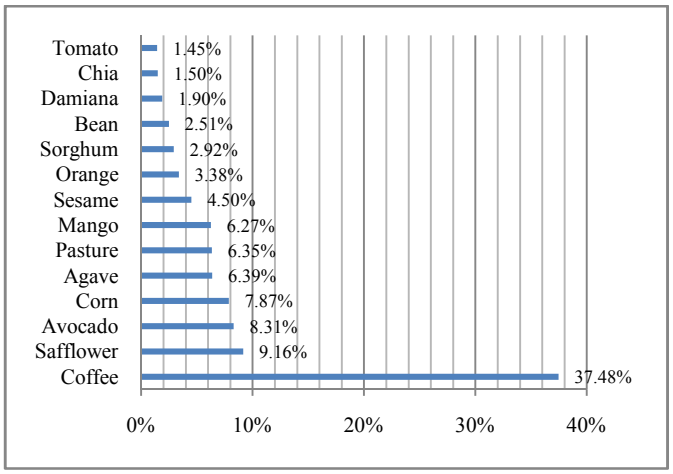

Chart 4 Percentage of major crops by area planted in Mexico
Source: Atlas Agro-food SIAP (2018).

In the case of organic nopal producers they seek to introduce the product nationally and internationally. This is due to increased demand as an edible product. Per capita consumption in Mexico is 6.4 kilograms per year. In general, demand intensifies during the Lent period (SIAP, 2018).

The market and consumption of nopal vegetables in Mexico is mainly focused on four regions that are the following 50% in the central region, with per capita consumption of 6.72 kg per year.22% in the northern region, with a per capita consumption of 5.27 kg per year. 15% in the southern region, with an annual per capita consumption of 3.66 kg.13% in the West Region, with an annual per capita consumption of 5.87 kg. The main markets for nopal vegetables in the country are Mexico City, Guadalajara, Monterrey, Puebla, San Luis Potosí, Cuernavaca,

Morelia,Torreón and Guanajuato.(Inter-American Institute for Cooperation on Agriculture, 2017)

The profit margins of the nopal, are very fluctuating in relation to the seasonality of the production. That is why the cultivation of organic nopal in controlled atmospheres greenhouses provides greater economic opportunities for producers, by maintaining higher annual productivity, significantly improving the quality of the product by avoiding climate damage, pests and contamination of the product, soil and water.

Organic certificationin Mexico

The International Federation of Biological Agriculture Movements (IFOAM), a non-governmental organization that promotes organic agriculture at the international level, has established guidelines that have been widely adopted for production and organic processing. These guidelines are considered as "minimum standards", which leave room for more detailed requirements, depending on regional or local situations.(FAO, 2001)

Mexico has the Organic Products Act (LPO) established in February 2006, which promotes and regulates the criteria and/or requirements for the conversion, production, processing, preparation, conditioning, storage, identification, packaging, labeling, distribution, transportation, marketing, verification and certification of organically grown products.(LPO, 2006)

Certification costs are determined by each Organic Certification Agency (OCO) which is defined according to the characteristics of the project; the size and characteristics of the production unit, soil and product analysis. If you are looking to certify a group of producers, a sample of the producers is analyzed; therefore, the cost and inspection time depends on the sample size defined.

The process to be followed to comply with the "SAGARPA Organic Seal" certification is shown in Figure 1.

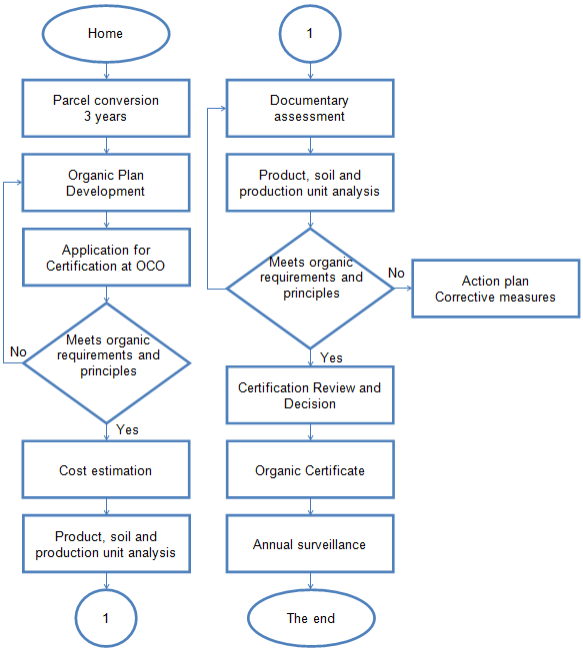

Figure 1 SAGARPA Organic Certification Process for an Agricultural Product
Source: own elaboration from four Organic Certification Bodies approved by SENASICA

Each of the steps involved in obtaining the certification is detailed below:

Implement organic practices: Conversion of the farm in a period of two to three years eliminating the use of pesticides and chemical fertilizers. Soil fertility is carried out through the cultivation of legumes, plant fertilizers or deep root plants in an appropriate multi-year crop rotation program; livestock derivatives, such as farm manure, can be used if they come from farms whose production conforms to these guidelines (FAO, 2001). Plates are mechanically controlled with traps, light or sound; removal of weeds with fire; coating with greenhouses or natural predators. Only in case of imminent threat of pests are authorized chemicals used. The seeds to be used must be organic.(FAO, 2001)

Organic plan: The producer must document and detail all the activities carried out on the farm, planting and harvesting since the beginning of his transition period; you must register inputs or payments and identify the personnel performing the activity.

Contact an Organic Certification Agency (OCO) approved by SENASICA: Simultaneously with the conversion period and organic plan, producers who wish to grow, certify and market their products as organic should approach an OCO approved by SENASICA, which in turn will guide them through the certification process.

Certification of organic products: once the above points have been covered, the selected OCO will carry out at least one organic inspection verifying compliance with the steps, in case no observations found, they will issue the corresponding certification for the use of the SAGARPA Organic Seal.

Factors influencing the cost of certification

To carry out organic certification in Mexico, producers must consider certain costs to achieve accreditation, which vary according to the OCO as shown in Table1.

Table 1 SAGARPA Mexico Organic Seal Certification Costs

Costs	Description
Application review	A one-time cost is considered for new customers
Travel	These are the transportation and meal costs of the inspector so the price fluctuates according to the area.
Farm inspection	It is considered as a fee per day in an 8-hour day
Certification	For national certification only
Water and soil analysis	Such analyses are not carried out by the OCO and are directed to an external laboratory
Certificates of Inspection and Transaction	Grants the right to one of the SAGARPA Organic Seal
Administrative expenses	It is an expense for the coordination, management and annual monitoring of the certification

Source: own elaboration from four Organic Certification Bodies approved by SENASICA

A certification cost willbe performed, which is considered for a group of 10 small producers, with land less than one hectare, for the state of Tlaxcala. Certification prices are obtained from four OCOs approved by SENASICA and which range from 1,500.00 to 2,000.00 USD, considering each of the above points.

CONCLUSION

Organic agriculture is an opportunity to help improve producers' incomes and thus reduce the poverty rate in the rural sector with the guarantee of a fair price. This thanks to the opening of new local and international markets, with a certified and quality product.

It is observed that several countries are introducing to organic agriculture, increasing the conversion of certified plots, helping to conserve soil fertility, ensuring crop rotation and preserving food quality.

Recommendations

Certification costs vary according to project characteristics, location and parcel size, as well as consideration by a production unit or a group of producers seeking common certification where a random sample of products and parcels would be taken with the approval if such sample is approved and the certification will be issued to the entire group.

For small producers it is advisable to carry out certification through cooperatives or peasant organizations, this in order to cover the costs of certification and to obtain support from government institutions for training or technical advice.

To expedite the certification process it is recommended to maintain documentary evidence of the growing process, agricultural practices, organic inputs and to maintain close communication with the OCO regarding possible pests that may affect the crop.

During the certification process, non-compliances can be found in the certification scheme, if the producer wishes to correct and continue the process will have to develop a plan ofaction, take corrective measures which are evaluated before issuing the certification. The time limit for carrying out corrective action is determined by the OCO. In case these actions do not correct the finding, a new deadline for its correction may be possible. Continuing such non-compliance will deny certification.

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