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MARKET AND PRODUCTION OF AGROECOLOGICAL SEEDS

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Abstract

In recent decades, agriculture has been changing mainly in terms of organic production, consumption and market. This increase is due to people's interest in pesticide-free products that meet all environmental, cultural and social issues, presenting itself as a highly competitive and lucrative market niche. For this reason, this bibliographic review aims to describe the market scenario and the production of agroecological seeds, in addition to characterizing the production of organic seeds and evaluating the potential of this market niche, which is increasingly the target of investments and demand for food. , but it is important to have more studies about it, as well as specific legislation for organic seeds.

Keywords: market; consumer; organic; technology; agriculture.

MERCADO E PRODUÇÃO DE SEMENTES AGROECOLÓGICAS

Resumo

Nas últimas décadas, a agricultura vem mudando principalmente em termos de produção orgânica, consumo e mercado. Esse aumento se deve ao interesse das pessoas por produtos livres de agrotóxicos que atendam a todas as questões ambientais, culturais e sociais, apresentando-se como um nicho de mercado altamente competitivo e lucrativo. Por esse motivo, esta revisão bibliográfica tem como objetivo descrever o cenário de mercado e a produção de sementes agroecológicas, além de caracterizar a produção de sementes orgânicas e avaliar o potencial desse nicho de mercado que é cada vez mais alvo de investimentos e demanda por alimentos, porém é importante que se tenha mais estudos a respeito, bem como uma legislação especifica para sementes orgânicas.

Palavras-chave: mercado; consumidor; orgânico; tecnologia; agricultura.

Introduction

Organic agriculture emerged between 1925 and 1930 from the composting and organic fertilization work carried out by Albert Howard in India, where studies showed that soil health depended on a complex biological chain that could not be achieved simply through mineral fertilizers (HOWARD, 2017).

Therefore, this system is part of the comprehensive concept of alternative agriculture, which also involves other currents, such as natural agriculture, biodynamic agriculture, organic agriculture, ecological agriculture and also permanent culture (PARRA FILHO *et al.*, 2018).

All these currents adopt similar foundations that have in common the basic principle of using crop rotation, green manure, manure, crop stubble, straw and other vegetable and animal residues, as well as the natural control of pests and diseases (NASCIMENTO, 2020).

Over time, there has been a growing interest in this topic, as a result of consumer demand for healthy food, produced through an environmentally correct and socially fair system. But many challenges remain, such as establishing a balance between animals, plants and other existing beings (NASCIMENTO *et al.*, 2020).

From this study, it was possible to verify that market growth will depend on some factors, since the viability of the organic seed production chain depends on overcoming the contradictions and gaps left by the legislation (FORTES NETO, 2018). Thus, it will reach and will reach a level of full development and independence from the conventional sector of agriculture.

Intense communication and mutual commitment between producers, traders and government institutions are necessary for a “clearer” and truly effective production (NASCIMENTO *et al.*, 2020).

The objective of this bibliographic review is to describe a brief report on the current situation of the market and production of agroecological seeds.

Methodologies

The methodology used in this bibliographic review arose from studies carried out between the months of June and July of the year 2021, which includes the consultation of scientific publications that allow outlining the concept of organic agriculture and the characteristics of this process in Brazil, focusing on seed production.

This in turn brings research and information on how to produce organic, development, market, certification in organic agriculture, standards for organic agriculture. According to (PEREIRA *et al.*, 2018) when preparing a literature review, the results of some discovery, experience carried out, describing a case, describing some phenomenon that has occurred are being reported.

Discussion

To produce organic food, the producer must be part of a management plan, that is, an action plan, which helps how to manage production and follow the path towards sustainability, following principles, organic standards that are safe, healthy and preserving the environment that respects and favors the working conditions of man in the field.

When starting an organic production project, some factors must be observed and considered, such as:

• Regarding the property (quantity and quality of water, respecting environmental laws;

• Selection of activities to develop, technical assistance, choice of the type of certification and the certifier;

• Follow best practices for organic production, such as soil preparation, how to maintain permanent ground cover;

• Choice of the type of fertilization;

• Prevention and control of pests and diseases;

• Control weed growth (weeds and/or weeds);

• Verify the inputs accepted for use on the organic property;

• Carry out the individual or group organic certification process;

• Market the products;

• Obtain information on machinery and equipment, legislation and technical standards;

• And last but not least, choice of seeds or seedlings.

Based on the aforementioned and on the principles related to biodiversity, seeds are responsible for the perpetuation of species in any agricultural system (SANTILLI, 2022). In organic agriculture, seeds are produced according to agroecological principles, which use germplasm adapted to local conditions and rescue the use of traditional and/or Creole crops.

Currently, the use of native seeds by family farmers is recognized, which are of great importance for the organic system to preserve a repertoire of natural selection of thousands of years, creating seed banks for storage and exchange between producers (PEDRO, 2021).

Its availability and continuity were in charge of family farming, becoming essential for the independence and food security of the peoples, keeping behind it a whole historical and cultural issue (LONDON, 2016).

- ***Developing***

We are in a modern and dynamic world, where the population is increasingly concerned about having a healthy and disciplined diet, before that, there is an expansion of the organic sector in Brazil as a result: growth in demand, by consumers, of healthier foods and natural foods (MARTINELLI *et al.*, 2019). In view of this, there is an expansion of the market related to the

production of certified organic seeds, attracting the interest of investors and entrepreneurs, an example of this model is the European countries that begin to produce and invest in this segment in Brazil (CARDOSO *et al.*, 2021).

Specialists still say that producing organic seeds in the country can be a good business, but we still have some obstacles and challenges until an environment is structured where producers support each other in some way and find organic seeds relatively easily. For this to happen, it is necessary to have more incentives for financing, investment in research and the development of materials suitable for the needs of organic production (CARDOSO *et al.*, 2021).

There is also a need to establish a more favorable regulatory framework for initiatives in this field, and in this sense, more collaborative work is needed between some sectors, such as the public sector, private initiative, in addition to the population, so that there is a regulation between the production environment and the commercialization environment, so that the rules are clearer and more obvious, for those who are going to invest or work in this segment (CARDOSO *et al.*, 2021).

- ***Market***

In recent decades, agriculture has been changing its characteristics based on the development of new technologies, due to the effort to differentiate production processes and products, with the aim of increasing market share (LOPES, 2022). Organic production has been increasing both its production and the interests of consumers and the market, considering all the environmental and social aspects it presents, as a highly competitive niche (CORDEIRO, 2020). In this sense, for Brazil to be able to serve the market for organic products, it is necessary that the production of seeds in an organic system, as well as plant reproductive materials, be available to producers inserted in this production modality, otherwise the certification of any product will be unfeasible, since these represent the beginning of the organic production chain (GUANZIROLI, 2000).

According to experts, one of the obstacles to the expansion of production is related to the divergence of the marketing concept, considering that the objective of production in organic systems aims to establish a socio-environmental balance (DEMATTE, 2017).

- ***Certification in organic agriculture***

Regarding the certification of organic products, it is necessary to create a regulation that guarantees the consumer standardized and reliable processes from the production to the commercialization of the products. In this way, the certification process in organic agriculture discusses the conformity of a production process. This organic production certification is generally a multi-tiered methodology that certifies: “the producer (the fields or facilities used in production), the production system, the processing, and the distribution system (including documentation and precautionary measures), taken to maintain the integrity of the product throughout the chain of

custody)" (NEVES, 2018). The certification and regulation processes are different from each other, the regulation is considered a government action, where inspections are carried out in order to verify fraud and adopt the corresponding legal actions. The certification, on the other hand, is an affirmative declaration of adjustment to the established standards, where the certifiers promote their inspections to ensure the follow-up, in writing, of these adopted standards (NEVES, 2018). The certified organic product is one that has characteristics of organic conformity, and can use a quality seal, authorized by the certifier or by the participatory partner system in the evaluation of organic conformity (SAMINÊZ *et al.*, 2017). In order for this product to be certified, its entire production chain, all the operators involved in the process and the points of sale must be certified to operate in compliance with the rules and regulations in force in organic agriculture, in which case several certifiers act in the certification process of different operators of the same chain (MARTINS, 2021).

In the case of wholesale sales, as organic quality is not proven by the characteristics of the final product, but by the control of the production and processing areas, it is necessary that a certificate accompany commercial transactions. Some tests carried out on the final product serve exclusively to identify non-organic products, such as contamination by substantial residues of non-permitted products, in this case pesticides (NEVES, 2018).

The certification document issued by a third-party attest, through the application of instruments such as tests, trials, among others, that the requirements demanded by the market and the constant rules and regulations were met. The credibility of the certification process is assured by the fact that this procedure is carried out by an organization that is not involved in the production and commercial processes. Therefore, certification is a declaration of conformity of a product with a reference and must be carried out by an independent body (MEDAETS; FONSECA, 2015).

The certification of organic products becomes essential for the progress of the productive units, the growth of regional trade and the guarantee to consumers, in relation to the monitoring processes, it confers the identification and differentiation of certified products through their quality, adding value, credibility and recognition. In the case of farmers, this system guarantees the quality of their products, keeping them in national and international markets (MARTINS, 2021).

As for consumers, the certification provides a guarantee of product differentiation, since it protects them from possible fraud and facilitates the expansion of local trade through the creation of cooperatives and greater participation of family farmers (MEDAETS; FONSECA, 2015).

- ***Rules for organic farming***

The standards for organic agriculture are achieved through certification and recognition that the product has been produced in accordance with organic production standards. In the case of organic agriculture, these standards can be instituted by producer associations that present a

certification system with norms and procedures and, through their standards, certify associated producers (NEVES, 2015).

However, these standards, considered private, must comply with the official regulation of organic production established by their country, being able to add some special procedures or even adopt activities of private standards or official standards, or also internationally accepted standards, such as those established by Codex Alimentarius (2001) as long as it respects the standards of the countries where the product will be marketed, since this certification is a consumer-oriented message.

- ***Brazilian legislation on organic seeds and seedlings***

The first seed and seedling laws were created in the last century, in the United States and Europe, which dealt with regulations on the production and marketing of plant propagation materials. Between 1960 and 1980, international organizations put pressure on developing countries to create standards to guarantee farmers access to good quality seeds and seedlings, and thus increase agricultural productivity and, consequently, the supply of food. This time was marked by an intense creation of seed laws around the world (LONDON, 2016). Countries began to institute specific legislation for organic products, but as this could create barriers to international trade, an International Directive was enacted giving due guidance to countries in their regulations. Therefore, Brazilian legislation is similar to that of many countries, but with its particularities (SAMINÊZ *et al.*, 2017).

In the case of seed legislation, this was greatly influenced by an agricultural period of great modernization and standardization, influenced by the Green Revolution, adopting the use of high-yield, homogeneous, stable and dependent on external inputs (SANTILLI, 2022).

With the entry of organic products in the market, the need arose for the elaboration of a new regulation, which would guarantee to the consumer a standardization of all processes, from production to commercialization, and thus, giving them complete confidence in these products. At this moment, another important milestone in organic agriculture takes place, the creation of the certification mentioned above in the text (PEDRO, 2021).

Conclusion

Being the current challenge to guarantee food security, with healthy foods and the supply of the necessary inputs for the economy in a socially fair manner and without compromising the environment and future generations, it is necessary to have specific legislation for organic seeds without gaps as well as the current legislation, which translates into the stagnation of the development of this system.

Organic seeds are rustic, adapted to local conditions, therefore they already meet the criteria to be "organic" by law, for example, native seeds. The legislation, by imposing that these seeds go through a classification and certification process, eliminates this purity of the seeds, when they are subjected to the processes of genetic improvement and certified as genetic seeds.

Given this scenario, it is important that in the future there is specific legislation for organic seeds with more information and studies giving greater emphasis to the topic addressed.

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