Mini Review

Agribusiness of Pará floriculture

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Received: 15 September, 2018. Accepted: 07 December, 2018
First published on the web May, 2019
Doi: 10.26545/ajpr.2018.b00032x

Abstract

This work has as general objective to make a bibliographical review on the agribusiness of floriculture in the North region with emphasis in the state of Pará, seeking to analyze the cultures of major importance, production and marketing. The Brazilian floriculture has been growing and demonstrating enormous expression in the national and international market, being considered one of the main segments of the contemporary agribusiness. The northern region is the most recent region of flower and ornamental plants in the country. The largest regional producer of flowers and ornamental plants is the state of Pará, which develops a floriculture based on the exploitation of tropical foliage and flowers for cutting, as well as an expressive production of ornamental plants for gardening and landscaping. The municipality that has most stood out in the cultivation of flowers is Benevides, with a production of 50 thousand bundles of zinia, rose, clove, heliconia, emperor baton, among others per year.

Key-words: Benevides, Flowers, Production

Introduction

Floriculture, in its broadest sense, covers the cultivation of flowers and ornamental plants for various purposes, including cutting flowers or tree saplings. Flowers and ornamental plants are all species cultivated for their beauty, and can be used in the outdoors architecture and landscaping (Silva, 2009).

Ornamental plants were selected by humans from visually appealing features such as showy, colorful and fragrant flowers and inflorescences, distinct color and texture foliage, stem shape, or general appearance (Silva, 2009). The presence of flowers in people's lives goes back to the beginnings of human existence. Colorful and cheerful, they embellish and perfume, contributing to significantly alter environments (Vieira et al., 2006).

The commercial floriculture, understood as the professional and business activity of production, commerce and distribution of flowers and plants cultivated for ornamental purposes, represents one of the most promising segments of contemporary Brazilian agribusiness (Junqueira and Peetz, 2011).

In Brazil, as in the world, the consumption of flowers of the most varied types grows. In this way, the expansion of flower agribusiness becomes a reality, as this economic sector experiences a strong penetration potential in national and international consumption baskets (Vieira et al, 2006).

In this context, this work has as general objective to make a bibliographical review on floriculture in the North region with emphasis on the state of Pará, seeking to analyze the cultures of major importance, production and marketing.

Floriculture in the world

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In the international scenario, floriculture is an activity in the agricultural sector, called ornamental horticulture, because its production process resembles to the vegetables and medicinal plants (Oliveira and Brainer, 2007).

The world market for plants and ornamental flowers is extremely dynamic, moving billions of dollars per year and involving a large number of producing and consuming countries of various floriculture products. This type of market is present all over the world, although countries such as Latin America, the Netherlands and Europe stand out for their relevance in the volume of commercialization. In addition, these countries also show high domestic demand, which makes them important importers (Neves and Pinto, 2015).

The world floriculture occupies an estimated area of 424 thousand hectares, with an approximate movement of US $ 100 billion per year. The segment of cut flowers is the most expressive, followed by that of live plants, bulbs and foliage. The world trade in flowers and ornamental plants is concentrated in the European Union, the United States and Japan. Also noteworthy are Colombia, Ecuador and Costa Rica in Latin America and China in Asia (Buainain and Batalha, 2007).

For Buainain and Batalha (2007) the European Union represents the main world market of flowers and ornamental plants. The largest supplier of flowers and foliage in this market is the Netherlands, in addition it dominates the world flower market, and it is the largest exporter and importer of floriculture products. The Netherlands is a major supplier to the United States of cutting flowers for bouquets, which are also purchased from Canada, Israel, New Zealand and Peru. Considered the largest flower market in Asia, Japan is one of the countries of major importance in this field. Almost all of its consumption is of products produced in the country. Despite the importance of domestic production and the imposition of taxes and non-taxes barriers, Japan relies on imports to meet domestic demand.

Colombia is the second largest exporter of flowers after the Netherlands. Its flower exports to the US have grown rapidly since the initial shipments 50 years ago. Currently, the American market is by far the main market for Colombian flowers accounting for 75% of its exports. Russia is the second largest customer, although far behind, with 5% of exports. The Colombian flower trade is considered a model of economic cooperation between Latin America and the US (Gianchandani et al., 2016).

Ecuador stands out in the world scenario as an important exporter of cut flowers, mainly in the trade of roses. The third largest exporting country in Latin America is Costa Rica. The main crops are foliage, largely produced by North American companies located in that country and responsible for marketing in the United States and Europe. Brazil has a large domestic market and consumes almost everything it produces. Although it cultivates a large area, it generates a small flow of products for the international market. It is noteworthy that, in the last five years, Brazilian exports have practically doubled (Buainain and Batalha, 2007).

Traditional, temperate flowers, including roses, are the most outstanding species in the world market. The space of tropical flowers is still small, but has been growing, winning the hearts of new consumers and promoters. In addition to presenting beauty and profusion of special colors, tropical flowers have other advantages, such as less perishability and greater resistance in transport over long distances (Oliveira and Brainer, 2007).

**Floriculture in Brazil**

The Brazilian floriculture has been growing and showing enormous expression in the national and international market, being considered one of the main segments of the contemporary agribusiness. The great expression in the market of flowers is due to the fact that the country presents a great amplitude and diversity of climates and soils allowing the cultivation of numerous species of exotic and native ornamental flowers and plants with potential to compete with the international market (Kiyuna et al., 2004).

At the beginning of the 1990s Brazil exported only 10% of its production of flowers and ornamental plants. In 1999 and 2000, Brazil ranked 31st and 32nd in the international scenario in the ranking of exporting countries (Almeida and Aki, 1995). In 2003, foreign trade in Brazilian floricultural products was very favorable, reaching US $ 20 million in total exported value, with a performance of more than 30% compared to 2002. In 2013, the total value traded by Brazil was US $ 23.81 million, which is 8.43% lower than the amount traded in 2012 (Junqueira and Peetz, 2014).

Floriculture has been consolidating in Brazil as a relevant economic activity, but the main aspect of
this segment is its social aspect. The agribusiness of flowers and ornamental plants is an activity that is being dominated by small rural producers which contributes to a better distribution of income (SEBRAE, 2014b).

The floriculture is an activity with remarkable development in Brazil, with economic importance for several Brazilian states, led by São Paulo, with emphasis on the city of Holambra, one of the main poles of floriculture in the country. National production of flowers and ornamental plants in 2013 was concentrated in the Southeast region (83.02%), followed by the Northeast (9.92%), South (2.90%), North (2, 62%) and MidWest (1.54%) (Table 1) (Junqueira and Peetz, 2014).

Brazil, despite having a long tradition in the export of flowers and ornamental plants, does not respond by physical volumes or relevant values. In fact, the country participates with only 0.2% of the commercial transactions of flowers and plants between sellers and buyers, in addition to being strongly focused on international trade in plant propagating materials, especially bulbs, seedlings, rhizomes and similar ones. The sector is led by exports of chrysanthemum stakes (Chrysanthemum), followed by other rootless or bare-root seedlings, such as violet seedlings (Saintpaulia ionantha), begonias (Begonia elatior), spathophile (Spathiphyllum sp.) and I'm invincible (Dieffenbachia sp.), among others (Junqueira and Peetz, 2011).

Table 1: Percentage share of the geographical regions in the market of the different segments of the flower and ornamental plants market in 2013.

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<thead>
<tr>
<th>Regions</th>
<th>Sectors (%)</th>
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<tr>
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<td>Cut flowers and foliage</td>
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<td>Southeast</td>
<td>83.02</td>
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<td>South</td>
<td>2.90</td>
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<td>MidWest</td>
<td>1.54</td>
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<tr>
<td>Northeast</td>
<td>9.92</td>
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<tr>
<td>North</td>
<td>2.62</td>
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<td>Total</td>
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Surveys carried out in 2013 by the Brazilian Institute of Floriculture (IBRAFLOR), there are currently 8 thousand producers dedicated to the cultivation of flowers and ornamental plants with a production covering more than 350 species with about 3 (three) thousand varieties. The quality of the flowers, the growing competitiveness and the growth of the segment are perceived when it is observed that many states of the country started to have a significant production of flowers in the last years (SEBRAE, 2014a).

The flower market in Brazil has great importance for the economy, due to the increasing professionalization of the sector and the billing that is in the house of annual billions. Data from the Brazilian Institute of Floriculture (IBRAFLOR), in 2012 the billing was R $ 4.8 billion, already in 2014 reached R $ 5.7 billion (Silva and Reis, 2015).

The domestic market for ornamental flowers and ornamental plants should be understood in the context of consumption patterns in developing countries, where they predominate: low per capita consumption; market with a relatively small number of frequent buyers; shopping centered on very traditional products and strong seasonal concentration of demand on special dates and holidays, such as Mother's Day, All Souls Day, Valentine's Day, among a few others (Junqueira and Peetz, 2008).

The first half of the year focuses on the two main dates of flower consumption in Brazil: Mother's Day (on the second Sunday of May) and Valentine's Day (June 12th). On both occasions, consumers preference rests on bouquet of roses. In the last five years, these products have represented between 16% and 19% of gifts for mothers and between 12% and 18% of those exchanged between valentines (Junqueira and Peetz, 2011).

Mother's Day is considered one of the most important dates for retail sales in general, surpassed only by Christmas. For the flower and ornamental plants sector, it represents one of the main periods of the year for greater commercialization of these products (Junqueira and Peetz, 2009).

Another important date in the consumption of flowers at regional level is the Círio de Nazaré religious festival that occurs every year in the city of Belém. Florists in the Metropolitan Region of Belém (PA), especially in the years 2007 and 2008, introduced, in an intentional and strategic way, the tropical flowers and foliage produced regionally in the decoration of the berlin that carries the image of the Holy Mother of Jesus during the Círio de Nazaré religious festival (Junqueira, 2009).
The consumption of flowers in Brazil is characterized by strong seasonality at peak dates: International Women's Day, Mother's Day, Valentine's Day, All Souls Day, Christmas, etc. The months of greatest commercialization are: March, May, June, November, and December. Funeral homes, as well as decorating and event companies, have a uniform demand throughout the year. Consumers are composed directly by natural people individuals, or with the intervention of hotels, buffets, decorators and companies. Rose is preferred by individual consumers, the main consumers of chrysanthemum are funeral homes and flowers and potted foliage are intended for domestic use (Oliveira and Brainer, 2007).

The average Brazilian per capita consumption of flowers and ornamental plants is currently estimated at R $ 20.00, with ornamental plants for landscaping and gardening accounting for 48.6% of this value, followed by cut flowers (29.9%), flowers and potted plants (20.0%) and cut foliage (1.5%).

These tables are still low compared to those observed in a large part of the countries with more developed markets and, thus, signal to a potential future expansion of the consumer market (Junqueira and Peetz, 2008).

**Floriculture in North Region**

In the Legal Amazon, the northern region of the country is probably the one with the greatest potential for expansion of Brazilian floriculture, which can expand both exotic and tropical flower production (Buainain and Batalha, 2007).

The northern region is the most recent region of flower and ornamental plants in the country, but still occupies the last position, with a 2.47% share in the total value of Brazilian floriculture production. Its role is decreasing in the period, falling from 2.72% in 2008 to 2.2% in 2013 (Junqueira and Peetz, 2007). Part of the decreasing participation in Brazilian floriculture is related to the reduction of exports of tropical floriculture and also the lack of certification of free area of black Sigatoka (*Mycosphaerella fijiensis* Morelet), which is one of the fungi that attack ornamental plants such as heliconia, causing foliar spots and even death of the plant. These factors inhibited exports to other states as well as to the international market.

The largest regional producer of flowers and ornamental plants is the state of Pará, which develops a floriculture based on the exploitation of tropical foliage and flowers for cutting, as well as an expressive production of ornamental plants for gardening and landscaping, which acquires a strong economic expression in the supply of other states of the region (Junqueira and Peetz, 2006).

In second place is the state of Amazonas, with production of tropical species. The other states have still incipient but promising floristry when focused on the self-supply of ornamental plants for landscaping and gardening, tropical cut flowers and foliage and potted plants (SEBRAE, 2015).

**Floriculture in Pará**

The floriculture in the State of Pará has been presented as a viable alternative to agriculture, since the increase in the demands related to decoration, together with the diversity of flowers found in the Amazon, has made the flowers present themselves as a business opportunity (Santos and Sena, 2006).

Floriculture agribusiness of Pará has been growing more and more, generating employment and income for small and medium farmers, especially cooperatives. The importance of floriculture in the state is reflected in the largest regional event in the sector: Flor Pará, which is held in conjunction with the International Chocolate and Cocoa Festival, in September in Belém at the Hangar Convention Center. In 2012 the fair handled two million of Brazilian money in business, adding the productions of chocolates and flowers. As early as 2015, only the flowers sector generated a flow of three million and the expectation is that this importance will grow even more in 2017 (Andrade, 2016).

Pará floriculture is an activity that has been developed to a greater extent by small farmers demonstrating that the production of flowers and ornamental plants assumes great socioeconomic importance in a broader context of income generation and occupation of labor force (Santos and Sena, 2006).

The main producers of tropical, temperate and ornamental flowers in Pará are concentrated mainly in the municipalities of Ananindeua, Barcarena, Belém, Benevides, Marituba, Santa Bárbara, Castanhal, Santa Isabel, Benfica and Santa Izabel. The municipality of Santarém has also been outstanding with the production of the "Rose of the Desert" (Andrade, 2016).
The municipality that has most stood out in the cultivation of flowers is Benevides, with a production of 50 thousand bundles of zinia, rose, clove, heliconia, emperor baton, crystal and alpine per year in addition to seedlings and ornamental plants of pots or for gardens (Junqueira and Peetz, 2006).

Surveys carried out by Emater-PA with Benevides flower growers in 2016 in partnership with AFLORBEN (Benevides Flower Growers Association), there are 44 producers in the municipality, including family farmers and business producers, of which 41.2% are men and 52% are women. However, the production of flowers in Benevides, although it is gaining prominence, mainly in relation to the production of tropical flowers, is still lacking more investments in the sector, so that the production can increase (Santos and Sena, 2006).

Benevides largest producer of flowers in the region is a municipality relatively close to the capital, which facilitates the commercialization to the great center. However, proximity is not enough, it is necessary that there are sufficient relations to commercialize, that is, it is essential that floricultures, that non-primary flower traders know of the production of the municipality and its quality. In addition to local marketing, the municipality is looking at exports. (Santos and Sena, 2006).

Belém is the largest consumer market for Benevides flowers. Sales are made in flower shops, supermarkets, landscaping companies and gardening, in events such as Flor-Pará, Agrifal and EXPOFLORBEN and for decorators. Although most producers produce to export to the capital, there are still non-profit farmers (Nunes et al., 2007).

In the metropolitan area of Belém, the expansion of the production of flowers and tropical ornamental plants is a relatively recent process and it is mainly associated with the growth of domestic demand for products for ornamentation and landscaping resulting from the consolidation of urban areas (Santos and Sena, 2006).

The commercialization of flowers is still mainly done at the members’ home, followed by supermarkets, free markets and, finally, by the middleman. According to this information, the production and commercialization of flowers in Belém needs to be better planned and distributed, since the commercialization in the same residence demonstrates that the floriculture in the municipality is not yet on a large scale, or does not yet have a more industrial structure, demonstrating its still artisan character (Santos and Sena, 2006).

According to Sebrae (2016), 80% of the species produced in the country are tropical, which denotes a possible niche market, with high potential for growth, given the productive barriers that other countries would have to produce tropical flowers.

Tropical species such as heliconia, alpine, emperor baton, muses, costus, sorbitan and anthurium are the main species cultivated in the Pará region, there are also cultivation of subtropical and temperate species such as orchids, chrysanthemum and roses. The fact that the region produces more tropical species is related to the optimum potential for the development of these plants, because in these regions there is no climatic risk of low temperature, combined with the presence of water and good soil conditions to complete its cycle (Lamas, 2004).

It is important to note that consumer markets are changing and that these trends are irreversible. In this way, producers, wholesalers, retailers and suppliers will have to adapt to a market of continuous pressure for the reduction of prices and general increase of the quality, presentation standards, distribution logistics and value aggregation to the final product. In addition, it will require great potential for innovation, diversification and permanent incorporation of new items in the offer of products and in the provision of services, in the quality of service and in the relationship with the clientele (SEBRAE, 2015).

Main difficulties of flower agribusiness

For Buainaine and Batalha (2007), the main difficulties for the expansion of the flower agribusiness and ornamental plants in Brazil are related to the low per capita consumption. Flower consumption by the majority of the population is still very restricted to celebratory dates and certain events, as special as birthdays, weddings, engagements, funerals, among others, and special holidays such as Christmas and New Year.

Changing this habit requires aggressive marketing to stimulate consumption and the adoption of new creative forms of product trade.

Another factor that inhibits consumption is the lack of expressiveness of large distribution platforms for floriculture products. The reduced number of flower shops distributed in the country is another constraint, without considering that the existing flower shops do not adequately organize their space
in order to better present their product (Buainain and Batalha, 2007).

The production of flowers in Pará, despite being a recent sector, is quite prosperous, but presents some difficulties for its greater growth, mainly in relation to investment in dissemination of local products for export and specialized labor (Nunes et al, 2007).

Several authors point out that the main problems with the tropical floriculture of Pará are related to the lack of knowledge of the species by the consumers, who still consume temperate flowers as a priority and also the lack of investments in the producers for the development of this type of production that has increasingly leveraged the country's economy.

The flower agribusiness needs to improve more and more mainly in relation to the process of professionalization and qualification of the producers, in order to increase the competitiveness of the national floriculture. In addition, it is also necessary to implement new technologies in order to improve the quality of the product, since most producers still use rudimentary technology in production.

**Closing remarks**

The floriculture agribusiness in Brazil gains quality, competitiveness, branches in the states and consolidates itself as an important economic activity in every country (Buainain and Batalha, 2007).

In order for the business of ornamental plants and flowers to expand, it is necessary for the municipal, state and federal public authorities and the private sector to adopt measures necessary to overcome the various obstacles in production, mainly related to the expansion of flower consumption by Brazilians and improvement in logistics and marketing for the sector.

**Conflict of interest:** All authors declare no conflict of interest.

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Cite this article as:
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