

# **Mexican floriculture at the dawn of the twenty-first century: its position and dynamism in international markets**

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**Abstract:** In last decades of the 20th century, in Mexico there were looked economic profitable activities inside the agricultural sector, due to the fact that the traditional plantations with low productivity do not stimulate an improvement of the conditions of rural zones. The flower growing, in the south of the State of Mexico, Morelos, Puebla and Distrito Federal, it was promoted by the intention of increasing the income of the producers commercializing inside and out of the country. The growth of the international trade of the flower growing has been reduced so there is exported about ten per cent of the harvested plants. The aim of the present document is to analyze the position and the dynamics of the Mexican flower growing on the international markets in the first years of the present century. The theoretical frame in the international trade is based on the analysis of the activity of the Mexican flower growing on the international trade on topics of economic opening and concentration of the trade. The methodology consists of the calculation of indicators to determine the situation and the changes of Mexico on the international market of the flower growing. The results indicate that there exists a moderate level of economic opening of the sector and exists high concentration of the Mexican trade with United States (it reflects a low diversification). One concludes that the international trade of the Mexican flower growing is slightly relevant on the international market and is concentrated in The United States, to medium term there might be a scene of permanent deficit given the components of the commercial scale.

**Keywords:** MEXICO, FLOWER GROWING, INDICATORS OF INTERNATIONAL TRADE

## **1 INTRODUCTION**

In Mexico, the flower growing is considered to be one of the activities of the agricultural sector, which is generating of high income in comparison to traditional plantations with low productivity. Both the different levels of government and the producers (associations or individually) have established policies and programs of promotion of the activity (already it is production or commercialization), this way, to increase the activity of the sector. In spite

of having policies and programs of promotion, the international trade is not so dynamic as the governmental speech manages to affirm, then, the intention of this document is to analyze the position and the dynamics of the Mexican flower growing on the international markets in the first years of the present century.

## 2 WORLD MARKET OF FLOWERS AND MEXICAN PARTICIPATION

There are zones or countries that have a long and deep history in production, trade or consumption of flowers, but in the recent years there have emerged new producers who are gaining market, especially the new producers and with minor increase the new consumers are.

The products of the flower growing are flowers and other plants of ornament, but to simplify in the harmonized system of the international trade this item remains expressed as alive plants and products of the flower growing.

The income from the flower growing is in some countries an important source of resources provided that other activities in the primary sector it does not generate them, whose reasons are diverse. In the recent years traditional countries in flower growing, some Europeans, realize strong investments in new regions, principally Africa, for example Kenya. The international trade of the flower growing shows percentage annual relatively high variations. The fluctuations are marked so the positive variations manage to be of more than one digit and are more frequent, while, the negative variations are fewer appellants and minors (Table 1).

**TABLE 1**  
**Exports and world imports: alive plants and products of the flower growing**  
**Percentage annual variation**

Year	2002	2003	2004	2005	2006	2007	2008
Exports	12.5	22.6	8.0	6.9	14.0	11.3	8.9
Imports	12.1	13.9	13.9	5.7	6.2	13.9	8.0
Year	2009	2010	2011	2012	2013	2014	
Exports	-6.0	13.9	8.0	-3.1	4.6	0.7	
Imports	-4.7	2.9	13.5	-7.5	3.6	2.1	

Source: Own elaboration based on UN COMTRADE statistics

In the trade worldwide great quantity of countries they take part, already be like importers or as exporters, nevertheless, the majority does not have a relevant paper in the exchange given their percentage participation in the set of the trade, that means, the world market of the flower growing is concentrated. The world exports come almost the half of an alone offerer: Holland (Netherlands), in the second term Colombia is, the rest of countries that stand out are Germany, Belgium, Italy, Ecuador and Kenya (Table 2). The market is changeable, there are new offerers as Kenya, others that are relatively new as Colombia or Ecuador, but others in Europe are reducing their presence.

**Table 2**  
**Principal exporting countries: Alive plants and products of the flower growing**  
**Percentage participation in the exports of the world**

Year	Exporting countries	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
1	Holland	46,1	46,7	50,7	51,6	49,3	47,1	49,8	48,7	52,7	52,4	52,3	50,4	49,6
2	Colombia	7,2	7,0	5,8	5,6	6,7	6,3	6,5	5,9	5,4	6,2	5,8	6,1	6,2
3	Germany	2,8	3,1	3,1	3,2	3,5	3,5	3,6	4,2	4,5	4,4	4,9	4,8	5,1
4	Belgium	4,6	4,5	4,5	4,8	4,6	4,0	4,1	4,1	4,1	4,3	4,2	4,2	4,6
5	Italy	5,2	5,2	4,9	5,6	5,1	4,8	5,1	5,1	4,1	4,4	4,4	4,3	4,1
6	Ecuador	2,7	3,1	2,5	2,7	2,7	2,8	2,4	3,0	2,8	3,1	3,2	3,7	3,9
7	Kenya	1,8	1,3	1,9	2,2	2,1	2,3	2,6	3,1	2,5	2,3	2,4	3,2	3,3
8	Denmark	5,0	5,0	4,8	4,5	3,8	3,9	3,5	3,5	3,2	3,0	3,1	3,1	3,0
9	United States	3,3	2,8	2,5	2,5	2,5	2,5	2,4	2,4	2,1	2,1	2,0	1,9	1,9
10	Spain	2,3	2,2	2,0	2,1	1,8	1,6	1,7	1,7	1,4	1,4	1,4	1,5	1,6
31	Mexico	0,6	0,5	0,4	0,3	0,3	0,5	0,3	0,3	0,3	0,3	0,2	0,3	0,3

Source: Own elaboration based on UN COMTRADE statistics

In the imports, one finds a different scene, since it is not too much concentrated as the exports. The principal buyer is Germany that it represents about the double of the following countries: The United States and Holland, United Kingdom and France. The dynamics is less changeable as for the buyers, they continue being the traditional ones, with exception of Russia that presents high growth in his world market share (Table 3).

**Table 3**  
**Principal importing countries: Alive plants and products of the flower growing**  
**Percentage participation in the imports of the world**

Year	Importing countries	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
1	Germany	18,6	18,3	17,5	17,1	18,1	16,9	15,5	15,9	20,6	20,5	19,3	20,0	17,9
2	Holland	8,9	9,0	9,2	8,7	8,5	9,0	9,3	9,9	8,9	8,0	8,8	9,4	10,3
3	United States	15,0	13,1	12,7	12,3	11,8	11,8	10,9	9,7	9,2	9,6	8,8	9,9	9,9
4	United Kingdom	10,7	13,0	12,4	13	11,8	11,6	11,4	9,9	8,6	9,6	8,9	8,1	8,8
5	France	8,8	9,0	9,8	9,7	9,2	9	8,6	8,9	9,0	8,4	6,8	6,7	6,7
6	Russia	0,8	0,9	1,0	1,4	1,8	2,5	3,9	4,2	3,9	4,2	4,5	5,3	5,0
7	Belgium	3,1	3,1	3,3	3,4	3,3	3,2	3,4	3,4	3,8	3,7	3,6	3,4	3,8
8	Japan	4,2	3,7	3,6	3,5	3,4	3,3	3,1	3	3,2	3,5	3,3	3,8	3,3
9	Switzerland	3,7	3,6	3,7	3,5	3,3	3,3	3,1	3,2	3,1	3,1	3,1	3,3	3,3
10	Italy	4,2	4,2	4,0	4,7	4,6	4,5	4,2	4,0	3,9	4,2	3,9	3,6	3,3
23	Mexico	0,5	0,5	0,5	0,4	0,5	0,5	0,5	0,5	0,4	0,4	0,5	0,6	0,6

Source: Own elaboration based on UN COMTRADE statistics

In the trade balance, the superávits are major that the deficits. Holland has the major superavit followed of Colombia in minor magnitude, with minor size there are Ecuador, Denmark,

Belgium and Kenya (Table 4). The trend is that the superavit is major in Holland and in emergent countries as Kenya, Ethiopia and Ecuador.

The situation of Mexico on the international market of the flower growing is slightly outstanding, due to the fact that he is a small participant on the market, the volumes that he handles and his percentage participation are minor. In the list of the exporting countries Mexico takes place 30, its participation represents almost a third part of a percentage point of the world market.

On the other hand, in the list of the importers, Mexico has its participation in almost half percentage point and takes place 23. In the trade balance of the Mexican flower growing is observed a trend to grow of the deficit, first balance happens from a superavits moderated to deficits from 2004, this year presents a deficit of 13 million dollars, for 2014 it had almost be quadrupled coming to a negative balance of 56 million dollars (Table 2, 3 and 4).

**Table 4**  
**Principal countries participants on the international market:**  
**Alive plants and products of the flower growing. Trade balance**  
**Thousands of dollars**

Countries	2002	2004	2006	2008	2010	2012	2013	2014
World	-463,357	-345,749	855,425	747,145	122,958	2,046,569	2,180,772	
Holland	3,572,647	5,410,618	5,981,114	7,325,096	6,952,587	8,656,865	8,722,029	8,909,263
Colombia	655,143	684,199	950,792	1,081,162	1,225,882	1,248,640	1,317,005	1,357,535
Ecuador	282,450	331,827	423,589	544,682	600,050	764,277	826,361	
Kenya	121,672	263,866	343,285	564,717	444,089	651,805	710,813	
Belgium	116,483	166,311	143,437	152,911	189,080	227,855	268,043	215,149
Denmark	286,571	307,855	330,536	270,273	309,679	342,871	260,426	288,737
Italy	83,211	91,282	77,775	231,063	124,072	203,055	250,006	253,559
Ethiopia	-433	-3,012	2,396	88,214	160,198	180,947	182,041	195,183
Israel	183,581	-	218,368	248,559	240,090	176,420	173,252	
Taiwan China	45,243	47,052	58,075	88,272	127,847	174,139	165,703	181,733
Spain	36,345	31,974	-26,719	30,874	57,231	117,026	145,127	153,630
Costa Rica	139,756	153,680	169,506	182,689	159,158	149,915	142,164	
Malaysia	27,932	37,404	55,213	78,805	120,089	151,612	123,194	121,725
China	10,122	12,947	35,658	57,693	101,587	119,539	102,061	218,640
Mexico	38	-13,772	-253	-34,227	-21,620	-49,643	-54,790	-56,895

Source: Own elaboration based on UN COMTRADE statistics

Trade balance of the flower growing has two scenes, initially of the period it presents superavit until 2001, later an increasing trend of trade deficit. In the first scene, the superavit of cut flowers is bigger than the deficit of the rest of the fractions, the superavit for sale of final product covers the purchase of inputs.

Into the second scene it changes the situation, the inputs show intensive growth, like that trade deficit the magnitude of the negative balance of both grows about 4 times. In

counterpart, the superavit (cut flower) is kept almost in the same levels during the whole period of analysis. The superavit for sale of final product does not cover the purchase of inputs, every time it is the major above mentioned negative balance.

**Table 5**  
**Exports and Mexican imports: alive plants and products of the flower growing**  
**Dollars**

Year	Exports	Imports	Trade Balance
2000	52,498,748	43,876,172	8,622,576
2001	51,600,748	47,094,474	4,506,206
2002	49,490,868	49,450,110	40,694
2003	43,850,701	56,982,196	-13,131,542
2004	43,503,406	57,269,538	-13,766,176
2005	46,803,611	65,509,851	-18,706,282
2006	76,296,866	76,549,581	-252,797
2007	58,126,619	83,564,392	-25,437,829
2008	58,423,543	92,650,681	-34,227,153
2009	53,426,110	72,385,670	-18,959,486
2010	55,618,271	77,238,457	-21,620,206
2011	53,710,169	105,760,115	-52,050,031
2012	58,253,993	107,896,954	-49,642,918
2013	60,468,685	115,258,706	-54,790,025
2014	67,152,000	124,047,974	-56,896,000

Source: Own elaboration based on INEGI

### **3 INDICATORS IN THE INTERNATIONAL TRADE**

In the international trade, there are to analyze a wide set of topics exists, from them they derive the construction o instruments as the generation of diverse indicators relating to its situation, trends, structure, interrelationships between others.

Based on Durán and Álvarez, (2011a and 2011b) it is possible to group the topics of international trade in blocks:

- a) commercial position,
- b) commercial dynamism and
- c) relative dynamics of the trade intrarregional.

For effects of this investigation it centres on the analysis on the second point, this way the topics to considering: economic opening and exporting diversification.

#### **3.1. Coefficient of economic opening (CEO)**

The coefficient of opening (CEO) is a relative indicator of the international trade that measures the degree of opening or internationalization of an economy especially. This

indicator allows to estimate the evolution of the volume commercialized by a country in relative terms (Durán and Álvarez, 2011a).

### 3.2. Index of exporting diversification (Index Herfindahl - Hirschman, IHH)

It is possible to measure the degree of diversification / concentration of the exporting basket or of the commercial destinations of a country from the calculation of Hirschman-Herfindahl's Index (IHH), measure that has the property of weighting the weight of every product and country in the total of its trade, so that if the exported value is reduced, it has a small influence in the final indicator, and vice versa. This is controlled on having taken the square of the participations of every country (Durán and Álvarez, 2011a).

## 4. DISCUSSION OF RESULTS

In the analysis of the economic opening 2 coefficients were estimated, one corresponding to the economic opening with base in the total of the commercial, different exchange based on the exports and a third respect of the imports.

It is observed that the economic opening of the Mexican flower growing has a trend to be every time a minor (analyzed with any of 3 coefficients) since across the time the above mentioned opening diminishes almost to the half. In the contrast between exports and imports, the coefficient of economic opening of the imports of the flower growing is major that that of the exports. It is possible to classify the opening in general under low levels (values near to zero).

**Table 6**  
**Coefficient of Economic Opening of Mexico: Alive plants and products of the flower growing**  
**Percentage terms**

Year	Coefficient of Economic Opening of Mexico	Coefficient of Economic Opening. Exporter	Coefficient of Economic Opening. Importer
2003	25.37	10.96	14.40
2004	22.90	9.86	13.05
2005	22.13	9.28	12.85
2006	25.71	12.78	12.93
2007	17.54	7.00	10.54
2008	18.87	7.10	11.77
2009	16.77	7.18	9.59
2010	12.03	5.03	7.00
2011	15.40	5.07	10.33
2012	18.73	6.57	12.15
2013	13.49	4.61	8.88

Source: Own elaboration based on INEGI

Phenomena like that of interest appear:

- 1) The economic opening of the Mexican flower growing is low
- 2) The economic opening of this one is every time a minor
- 3) The importing sector is more opened that the exporter

The analysis of the exporting diversification (or exporting concentration) of the producing sector of flowers based on the Index Herfindahl - Hirschman, IHH. The Mexican exports of the flower growing according to principal countries of destination appear on parts, this expressed as percentage participation of every country inside the total of the exports of Mexico (Table 7).

It is observed that the exports realized towards United States concentrate between 70 and 80 per cent of the total, Holland reduces his participation, while, Germany and Canada preserve it. The values of the IHH are high places near to one, for such a reason it is possible to establish that:

1. There is high concentration in the Mexican exports of products of the flower growing towards a market: the American.
2. The concentration on an alone market tends to diminish moderately.
3. The relative diversification (reduction of concentration) is very atomized so is not perceived where the exports have destination.

**Table 7**  
**Index of Concentration Herfindahl-Hirschman.**  
**Participation in the value of the exports of Mexico towards the indicated countries:**  
**alive plants and products of the flower growing**  
**Value between zero and one**

Exporters Year	United States	Holland	Canada	Germany	Panama	IHH
2001	0.79	0.08	0.05	0.05	0.01	0.80
2002	0.78	0.09	0.05	0.06	0.00	0.77
2003	0.76	0.01	0.05	0.06	0.00	0.74
2004	0.78	0.01	0.03	0.05	0.00	0.77
2005	0.75	0.01	0.05	0.05	0.00	0.71
2006	0.83	0.01	0.04	0.03	0.00	0.85
2007	0.74	0.02	0.05	0.38	0.00	0.87
2008	0.76	0.01	0.05	0.05	0.00	0.72
2009	0.73	0.02	0.05	0.04	0.00	0.68
2010	0.73	0.01	0.05	0.05	0.00	0.68
2011	0.72	0.01	0.05	0.05	0.01	0.66
2012	0.71	0.02	0.06	0.04	0.00	0.63
2013	0.70	0.02	0.06	0.03	0.01	0.62

Source: Own elaboration based on INEGI

## **5 WHY DOES NOT THE PARTICIPATION OF MEXICO GROW?**

The characteristics of the commercialized products are in function, at least partly, of the form of production that complements itself with the conditions of commercialization. In general, the production of flowers in Mexico presents identified characteristics, though not quantified well (ASERCA, 2006 y SAGARPA y GCh, 2005):

1. Low productivity.
2. Low quality (for the international standards).
3. Few innovation (in any item).
4. Lack of capital investment, therefore, lowers modernization.
5. Resistance to associate.
6. Almost void research and development.
7. Preference to the internal market.
8. Illegal use of seeds and material of spread.
9. Ignorance of the requirements to export.
10. In general, the producers lack it of training.
11. Infrastructure of transport and obsolete refrigeration.

In the domestic commercialization of flowers, about 90 per cent of the national output is destined to the domestic markets and the rest is sent to the international markets. The principal characteristics are (SAGARPA and GCh, 2005):

1. Absence of quality indexes that are sufficient and efficient.
2. In the managing he post-harvests the flowers they are tied or deposited in boxes and moved in disclosed vehicles, together with other products, reverberating in the life of shelf of the product.
3. The commercialization of the flowers is realized of different forms according to the type of producer and the product.
4. In general, the small producer comes to the wholesale markets as Mexico City, in Tenancingo at market flowers, where they sell the product to intermediaries and wholesalers of different cities of the Mexico, being the most important: Guadalajara, Monterrey, Culiacán, Cancún, Acapulco.
5. The packing and refrigeration is deficient or does not exist.

## **6 CONCLUSIONS**

The world market of the flower growing is in general with a trend of growth. Nevertheless, it is different what happens in the exporting and importing sector, the first one has concentrate in an exporter almost the half of the market in addition he presents new offerers with high pace of expansion, the second one supports the traditional buyers. For its part, Mexico has very low presence on this market, so the percentage participation of the exports and imports of the Mexican flower growing represent less half a point.

The Mexican trade balance of the flower growing shows a trend that it has changed into the time, first he presents superavit, but the trend is majority is increasing.

The commercial dynamics presents a situation of worsening in general terms. The economic opening of the Mexican flower growing is low, diminishes every time and the importing sector is more opened that the exporter. One presents high concentration of the Mexican



exports of the flower growing towards the market of the United States, though it tends to diminish moderately.

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