

ARGENTINEAN PRODUCTION, EXPORTS AND IMPORTS OF CITRUS ESSENTIAL OILS 1992-1996

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Abstract

An analysis and updating of Argentinean statistics on production, exports and imports of lemon, orange, mandarin, grapefruit and bergamot essential oils for the period 1992-1996 is presented. With information obtained from INDEC, FEDERCITRUS and Anales de SAIPA, quinquennial averages and percentual participation of each product both in volume and in value, were carefully elaborated. For lemon essential oil, main buying countries and last 20 years production and exports values are considered.

Results obtained showed a strong predominancy of lemon essential oil – more than 90% of total - with an average production in 1992-96 of 1770 metric tons, and exports for 1620 metric tons, for an amount exceeding 28.7 million dollars, that doubles the amount for the 1987-91 period. For 1992-96, the main buyers were USA (58%) and United Kingdom (25%).

During the quinquennium imports have attained an average of 154 metric tons of essential oils per annum – basically orange (107 mt), lemon (16 mt) and lime (14 mt) with an average value of 2 million dollars. Therefore, the commercial balance was always favorable to Argentina, and outstanding for 1995 with 35 million dollars.

1. Introduction

The last two decades several works on Argentinean statistics of aromatic plants, including production and trade of citrus essential oils were published (Ishikawa *et al.* 1982, 1987, 1989; SAIPA, 1995).

Among citrus essential oils outstands particularly lemon oil, produced mainly in Tucumán province, as a consequence of a continuous and sustained development of the citrus processing industry. This expansion is responsible for the first place Argentina occupies in the world production and exports of lemon essential oil (Delfini *et al.* 1994; Martí Klyver *et al.* 1995).

Taking into account the above mentioned, and the importance at world and southern hemisphere levels of lemon essential oil, an evaluation of the last quinquennial statistics on production, exports and imports of citrus essential oils, besides the variation in exports of lemon oil for the period 1977-1996, was done.

2. Methodology

With the yearly information on exports and imports of each essential oil obtained from the Instituto Nacional de Estadística y Censos (INDEC, 1992-1996) and on production from Federación Argentina del Citrus (FEDERCITRUS, 1992-1996); Anales de la Sociedad Argentina para la Investigación de Productos Aromáticos (SAIPA) and private estimates, quinquennial averages and percentages for each item were elaborated, taking volumes in metric tons and values in U.S. dollars, and presented as tables. For lemon oil

exports only, volume and values for last 20 years were determined, as well as the main buying countries for the last five years. All values were put together in a table of Argentinean commercial exchange in citrus essential oils in 1992-1996.

3. Results and discussion

Average production of citrus essential oils in the quinquennium 1992-1996 was around 2330 tons per year, with an approximate annual value of 35 millions of dollars, where lemon represents about 91% of the total. Between 1975 and 1995, production of lemon grew about 500% (1700 tons). Argentine exports on the period 1992-1996 increased in the order of 10 million dollars (40% up) owing mainly to increases in USA purchases.

Comparing exports of the period 1977- 1996, a steady increase can be observed, reaching 30 million dollars; in this historical series the value for 1980 was exceptionally high, owing to a price (34.8 US\$/kg of lemon oil) nearly twofold higher than normal.

Regarding to imports, striking is lime oil, with a quinquennial average of 440,800 dollars per year.

The total Argentinean exchange shows a very favorable balance, with an average for the period 1992-1996 of nearly 28 million dollars per year, 1995 being the best year with about 35 million dollars.

On the basis of this analysis, perspectives for the citrus sector are interesting, especially for lemon essential oil from Tucumán province, providing its excellent possibilities for exports to the United States and the United Kingdom.

4. References

- Delfini A.A, Martí Klyver M.B. and Catalán C.A.N., 1994. Actualidad y perspectivas de la industria cítrica (limón) en Tucumán. *Anales de SAIPA* 12: 15-25.
- FEDERCITRUS, 1992. La actividad cítrica argentina. *Información Estadística Anual*. Buenos Aires.
- FEDERCITRUS, 1993. *Ibidem*.
- FEDERCITRUS, 1994. *Ibid*.
- FEDERCITRUS, 1995. *Ibid*.
- FEDERCITRUS, 1996. *Ibid*.
- INDEC., 1992. Comercio Exterior, Exportación e Importación, Informe Estadístico Anual. Buenos Aires.
- INDEC., 1993. *Ibidem*.
- INDEC., 1994. *Ibid*.
- INDEC., 1995. *Ibid*.
- INDEC., 1996. *Ibid*.
- Ishikawa R., 1987. Estadísticas argentinas de producción, exportación e importación de especies aromáticas y aceites esenciales. *Anales de SAIPA*, 8: 33-44.
- Ishikawa R., Mizrahi I., Juárez M.A. and Lafourcade H.W., 1982. Estadísticas argentinas de producción, exportación e importación de especies aromáticas y aceites esenciales. *Anales de SAIPA*, 4: 58-78.
- Ishikawa R., Juárez M.A. and Mizrahi I., 1989 Estadísticas argentinas de producción, exportación e importación de especies aromáticas y aceites esenciales. *Essenze Derivati Agrumari*, 59(3): 248-265.
- Martí Klyver M.B., Dip J.D., Delfini A.A. and Catalán C.A.N., 1995. Características del aceite esencial de limón producido en Tucumán, año 1992. *Anales de SAIPA*, 13: 21-34.

SAIPA., 1995. Estadísticas argentinas de producción, exportación e importación de especies aromáticas y aceites esenciales. Anales de SAIPA, 13: 275-286.

Table 1 - Production of citrus essential oils (MetricTons/year)

	1992	1993	1994	1995	1996	Average	
						MT	%
Lemon	1,700	1,625	1,580	2,050	1,910	1,773	76.5
Orange	400	400	500	500	400	440	18.3
Grapefruit	85	85	100	125	85	96	4.1
Mandarin	20	25	20	25	25	23	1.0
Bergamot	2	2	2	2	2	2	0.1
Total	2,207	2,137	2,202	2,702	2,422	2,334	100.0

Table 2 - Mean Value of Essential Oils Production (1992- 1996)

	million US\$	%
Lemon	31.7	90.6
Orange	0.7	2.0
Grapefruit	1.9	5.4
Mandarin	0.7	2.0
Total	35.0	100,0

Table 3 - Variation in the production of citrus essential oils between 1975 and 1995 (Metric Tons/year)

	1975	1980	1985	1990	1995
Lemon	350	530	1,200	1,400	2,050
Orange		120	150	160	500
Grapefruit	35	40	50	65	125
Mandarin	10	10	20	20	25
Bergamot	-	-	1	1	2
Total	495	700	1,421	1,646	2,702

Table 4 - Argentinean exports of citrus essential oils (MetricTons/year)

	1992	1993	1994	1995	1996	Average	
						MT	%
Lemon	1,547.7	1,476.8	1,437.2	1,894.9	1,736.2	1,618.6	93.4
Orange	47.2	61.1	119.5	44.3	41.3	62.7	3.6
Bergamot	1.3	1.6	1.6	1.2	1.6	1.5	0.1
Grapefruit + Mandarin	21.0	61.9	60.3	60.0	44.9	49.6	2.9
Total	1,617.2	1,601.4	1,618.6	2,000.4	1,824.0	1,732.4	100,0

Table 5 - Argentinean exports of citrus essential oils (Thousand dollars/year)

	1992	1993	1994	1995	1996	Average US\$ x 1000	%
Lemon	24,217.8	25,311.0	25,121.5	35,962.8	33,051.4	28,732.9	96.3
Orange	76.6	147.7	172.6	225.1	184.2	161.2	0.5
Bergamot	138.4	151.3	45.4	52.5	64.8	90.5	0.3
Grapefruit+Mandarin	321.9	833.8	676.8	1,317.4	1,047.7	839.5	2.9
Total	24,754.7	26,443.8	26,016.2	37,458.1	34,348.1	29,824.1	100.0

Table 6 - Argentinean exports of lemon essential oil, by countries (Metric tons/year)

	1992	1993	1994	1995	1996	Mean MT	%
U. S. A	946.9	895.1	749.2	962.0	1136.8	938.0	58.0
United Kingdom	376.8	344.6	445.1	484.0	373.3	404.8	25.0
Mexico	70.6	128.3	84.4	155.6	29.5	93.7	5.8
Netherlands	27.3	30.3	63.0	108.5	73.3	60.5	3.7
Ireland	-	-	11.4	53.5	76.4	47.1	2.9
Switzerland	30.8	43.2	35.0	36.0	-	36.3	2.2
Total	1452.1	1441.5	1388.1	1799.6	1689.3	1580.4	97.6

Table 7 - Argentinean exports of lemon essential oil, by countries (Thousands dollars/year)

	1992	1993	1994	1995	1996	Average US\$ x 1000	%
U. S. A	14,591.8	14,974.4	12,712.6	17,334.4	21,323.8	16,187.4	56.3
Un. Kingdom	5,980.7	5,661.9	7,390.1	9,014.7	6,992.7	7,008.0	24.4
México	1,158.4	2,134.4	1,404.1	2,905.9	559.5	1,632.5	5.7
Netherlands	453.0	511.7	1,146.5	2,314.4	1,591.8	1,203.5	4.2
Ireland	-	-	226.8	1,053.1	1,400.0	893.3	3.1
Switzerland	746.8	1,107.8	998.1	1,122.1	-	993.7	3.5
Total	22,930.7	24,390.2	23,878.2	33,744.6	31,867.8	27,918.4	97.2

Table 8 - Argentinean exports of lemon essential oils from 1977 to 1996

Year	Metric Tons	US\$ x 1000
1977	299.1	3,654.3
1978	475.0	5,728.8
1979	518.6	10,255.7
1980	713.9	24,807.0
1981	650.4	12,740.3
1982	453.7	6,758.0
1983	758.0	7,017.3
1984	479.8	5,423.4
1985	795.4	10,126.8
1986	1,076.0	13,847.8
1987	955.6	12,271.5
1988	1,015.5	12,673.9
1989	469.4	5,900.9
1990	1,374.6	19,080.8
1991	1,360.5	20,708.4
1992	1,547.7	24,217.8
1993	1,476.8	25,311.0
1994	1,437.2	25,121.5
1995	1,894.9	35,962.8
1996	1,736.2	33,051.4

Table 9 - Argentinean imports of citrus essential oils (Metric Tons/year)

	1992	1993	1994	1995	1996	Average MT	%
Orange	93.8	48.1	122.6	110.9	157.5	106.6	69.0
Lemon	8.0	6.3	2.7	28.8	34.0	16.0	10.4
Lime	27.1	15.5	6.2	12.4	9.2	14.1	9.1
Bergamot	0.5	0.2	0.1	0.2	0.3	0.3	0.2
Others	9.8	18.1	33.4	22.7	3.1	17.4	11.3
Total	139.2	88.2	165.0	175.0	204.1	154.4	100.0

Table 10 - Argentinean imports of citrus essential oils (Thousands dollars/year)

	1992	1993	1994	1995	1996	Average US\$x1000	%
Orange	176.2	142.1	419.5	546.6	515.0	359.9	18.8
Lemon	185.5	141.3	167.5	503.0	576.4	314.7	16.4
Lime	823.1	429.2	227.5	388.8	335.6	440.8	23.0
Bergamot	44.9	25.0	12.0	12.6	14.0	21.7	1.1
Others	140.3	862.4	1468.4	1116.2	304.3	778.3	40.6
Total	1370.0	1600.0	2294.9	2567.2	1745.3	1915.5	100.0

Table 11 - Argentinean Trade of Citrus Essential Oils (Millions US\$)

	1992	1993	1994	1995	1996	Average
Exports	24.8	26.4	26.0	37.5	34.4	29.8
Imports	1.4	1.6	2.3	2.6	1.7	1.9
Balance	23.4	24.8	23.7	34.9	32.7	27.9