

Argentinian Citrus Essential Oils 1992-1996^a

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Over the last two decades several reports have been published on the production of essential oils in Argentina, particularly the citrus oils.¹⁻⁴ Among the citrus oils, lemon is the dominant product. It is produced in large amounts in Tucumán province and it alone has sustained the Argentinean citrus processing industry.

Over the years, production of lemon oil has increased to the point where Argentina is now the largest producing country.^{5,6} Annual exportation and importation statistics on citrus oil were obtained from the Instituto Nacional de Estadística y Censos⁷ and the production statistics were obtained from the Federación Argentina del Citrus.⁹ Additional information was obtained from the Anales de la Sociedad Argentina para la Investigación de Productos Aromáticos and private estimates of quinquennial averages and percentages of each oil. Using all of these data, the export volumes and value for lemon oil over the past 20 years have been determined. Further information was also obtained from the major importing countries for the last five years for the other citrus oils. The resulting information has been collated and tabulated for lemon oil, orange oil, grapefruit oil, mandarin oil and bergamot oil for the years 1992-1996.

Table 1 shows the production statistics for the years 1992-1996. The mean value of production of each of the

citrus oils is shown in Table 2. To put this in perspective, the variation of citrus oil production over the period 1975 to 1995 can be seen in Table 3. Because all of the citrus oils produced in Argentina are not exported, a summary of the exportation statistics for Argentinean citrus oils is shown in Table 4 with the value of these oils summarized in Table 5.

The specific countries that have imported lemon oil from Argentina over the 1992-1996 period can be seen in Table 6 and the dollar value of these imports can be seen in Table 7. Again, to put this in perspective, the exportation statistics for Argentinean lemon oil between 1977 and 1996 are shown in Table 8.

Although Argentina produces and exports citrus oils, it also imports some oils. A summary of the amounts and dollar value of Argentinean imports of citrus oils can be seen in Tables 9 and 10, respectively. Finally, the trade balance between imports and exports of citrus oils (in millions of US\$) can be seen in Table 11.

Examination of the data presented in Tables 1-7 reveals that the average production of citrus oils in Argentina over the quinquennium 1992-1996 was around 2,330 tons per year at an approximate value of US\$35 million, with lemon oil value accounting for approximately 91%. Between 1975 and 1995 lemon oil production increased approximately 500% (1,700 tons). Over the period 1992-1996 Argentinean citrus oil exports increased approximately US\$10 million (40% increase) owing mainly to increased US purchases. A

^aAdapted from a paper presented to the Second World Congress of Medicinal and Aromatic Plants for Human Welfare (WOCMAP II), November 10-15, 1997, Mendoza, Argentina

Table 1. Production of citrus oils (Metric tons/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 citrus oil 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 oils between 1975 and 1995 (Metric tons/year)

	1975	1980	1985	1990	1995
Lemon	350	530	1,200	1,400	2,050
Orange	100	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

comparison between the lemon oil exports over the period 1977-1996 (Table 8) reveals that there has been a steady increase in oil production. It should be noted that the exceptional high price of lemon oil in 1980 (US\$34.80 per kg)—a nearly two-fold increase in value over other years—was caused by a world shortage of the oil.

The importation statistics shown in Tables 9 and 10 reveal that, on a value basis, the major citrus oil imported into Argentina was lime oil, with a quinquennial average value of US\$440,000 per year. Nevertheless, the value of

Table 4. Argentinian exports of citrus oils (Metric tons/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. Argentinian exports of citrus oils (Thousands US\$/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. Argentinian exports of lemon oil (Tons/year)

	1992	1993	1994	1995	1996	Mean	
						tons	%
United States	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. Argentinian exports of lemon oil (Thousands US\$/year)

	1992	1993	1994	1995	1996	Average	
						US\$ x 1000	%
United States	14,591.8	14,974.4	12,712.6	17,334.4	21,323.8	16,187.4	56.3
United 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. Argentinian exports of lemon oil 1977 to 1996

Year	Metric tons	US\$ x 1000	Year	Metric tons	US\$ x 1000
1977	299.1	3,654.3	1987	855.6	12,271.5
1978	475.0	5,728.8	1988	1,015.5	12,673.9
1979	518.6	10,255.7	1989	469.4	5,900.9
1980	713.9	24,807.0	1990	1,374.6	19,080.8
1981	650.4	12,740.3	1991	1,360.5	20,708.4
1982	453.7	6,758.0	1992	1,547.7	24,217.8
1983	758.0	7,017.3	1993	1,476.8	25,311.0
1984	479.8	5,423.4	1994	1,437.2	25,121.5
1985	795.4	10,126.8	1995	1,894.9	35,962.8
1986	1,076.0	13,847.8	1996	1,736.2	33,051.4

Table 9. Argentinian imports of citrus oils (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

exports compared to the value of imports reveals a favorable balance for Argentina with an average of almost US\$28 million for the quinquennium 1992-1996. 1995 was the best year, with a favorable balance of US\$35 million.

We believe that on the basis of this analysis of Argentinean citrus oil production and value, the future looks very promising, especially for the possibilities of producing and exporting more lemon oil to both the United States and the United Kingdom.

References

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Table 10. Argentinian imports of citrus oils (Thousands US\$/year)

	1992	1993	1994	1995	1996	Average US\$ x 1000	%
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. Argentinian trade of citrus 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

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