

Citrus in Argentina:

Kurt Nordman

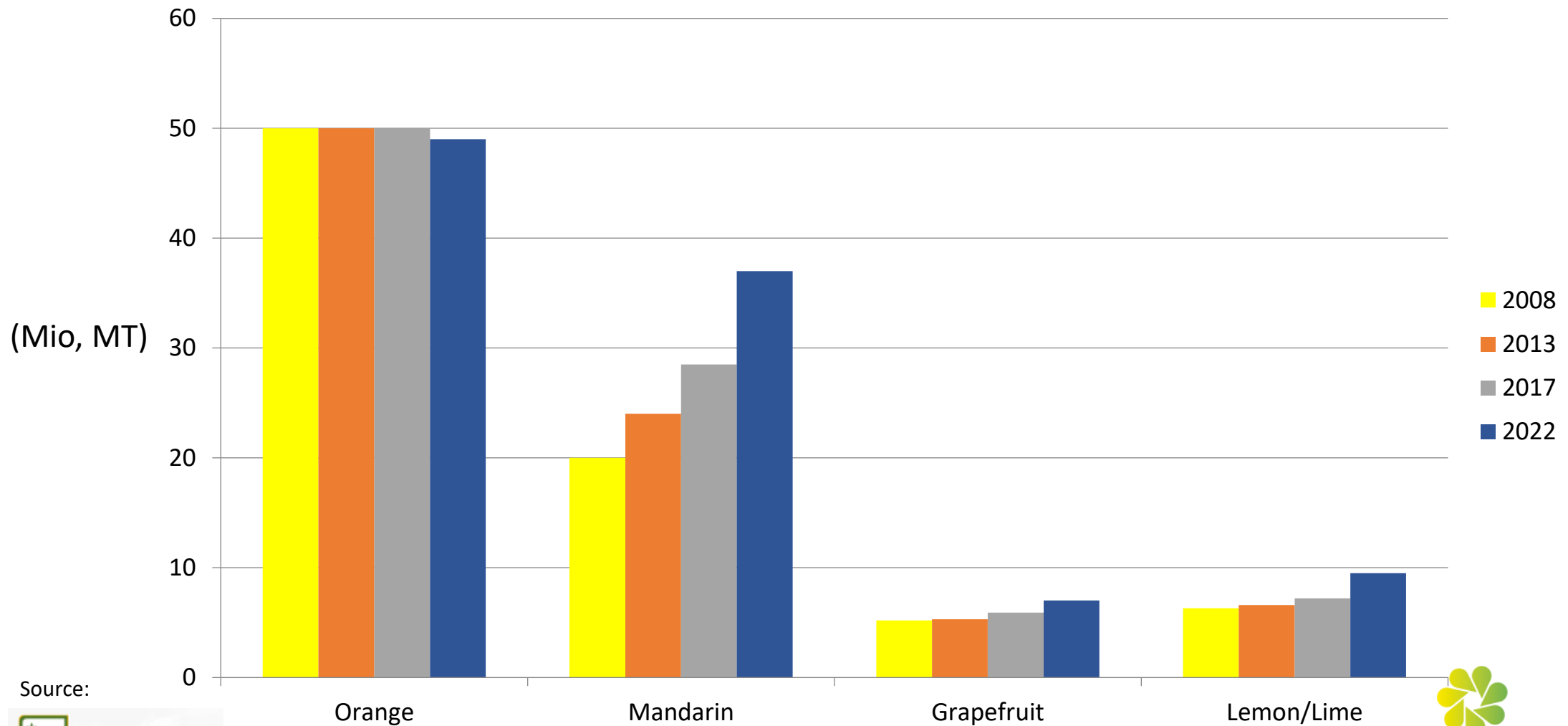
September 21, 2022



Presentation Highlights

- Global Citrus Production Figures
 - Northern Hemisphere
 - Southern Hemisphere
- Argentina Citrus Production Figures
 - All Citrus
 - Lemon
- Processing Plant
- Sustainability

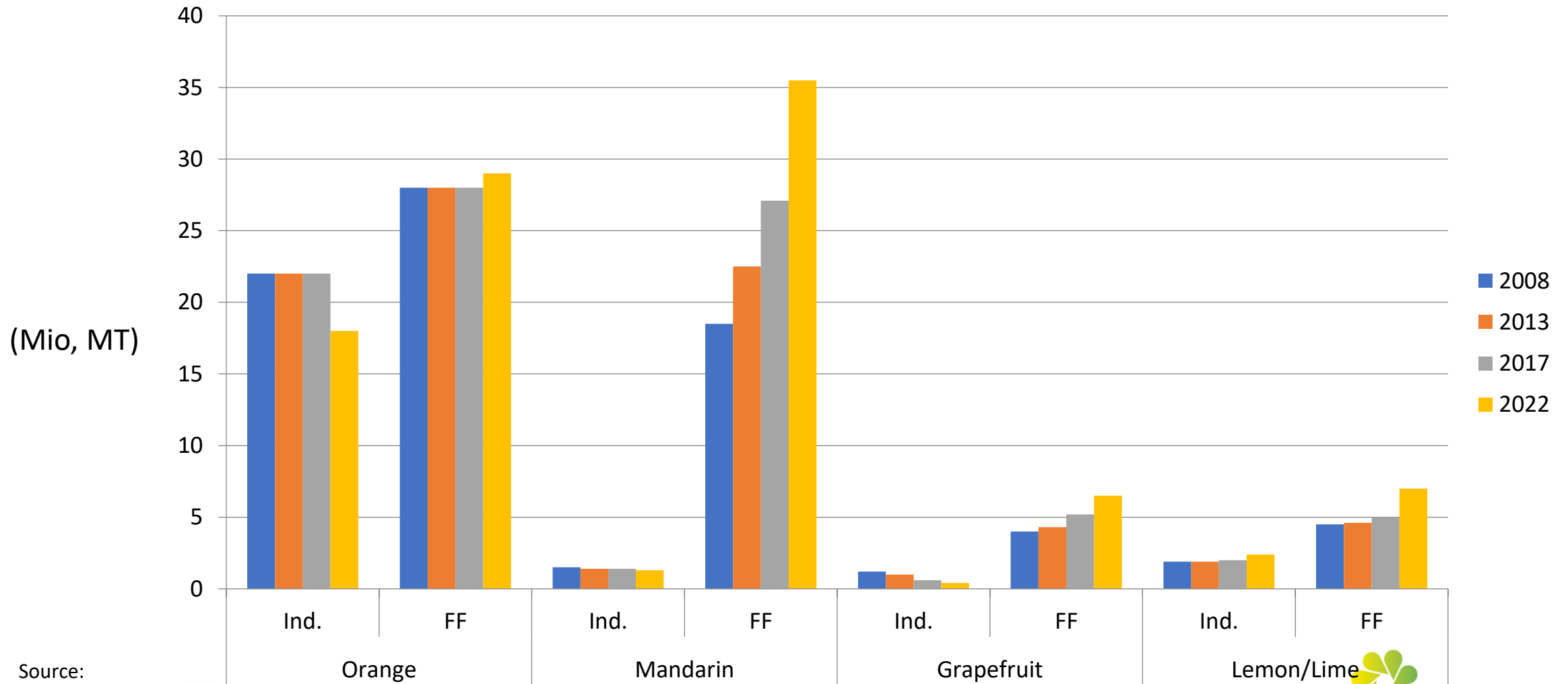
World Production by Species (Mio, MT)



Source:



Utilization of Citrus Fruit by Species (Mio, MT)



Source:



Citromax
Group

World citrus production 2010 (1,000 MT)

Country	Orange	Mandarin	Grapefruit	Lemon	Lime	Total
China	5,900	14,000	2,800			22,700
Brazil	22,603					22,603
EU	6,198	3,245	83	1,380		10,906
Mexico	4,080				2,133	6,213
USA	8,078	643	1138	835		10,694
Turkey	1,710	858	213	787		3,568
Egypt	2,430					2,430
Argentina	850	450		1,550		2,850
South África	1,428	140	406	257		2,231
India					2,100	2,100
Total aprox.	53,277 (61%)	19,336 (22%)	4,640 (5%)	4,057 (5%)	4,233 (5%)	86,295

Source:
fte. indexmundi.com/agriculture



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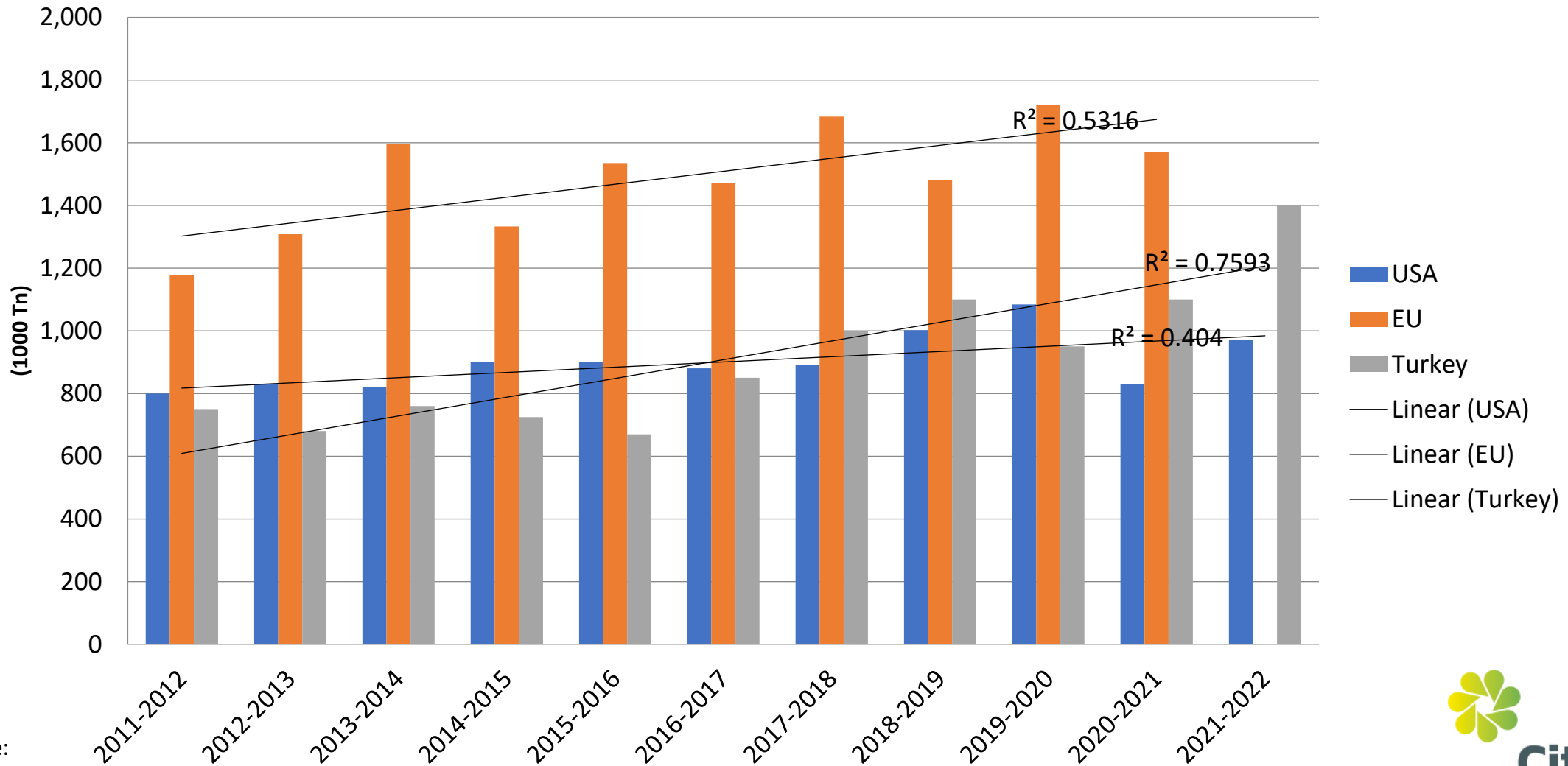
World citrus production 2021/22 (1,000 Metric Tons)

Country	Orange	Mandarin	Grapefruit	Lemon	Lime	Total
China	7,550	27,000	5,200			39,750
Brasil	16,908					16,908
EU	6,096	3,162	107	1,571		10,936
Mexico	4,280		534		3,217	8,031
USA	3,457	758	336	882		5,433
Turkey	1,750	1,810	249	1,337		5,146
Egypt	3,000					3,000
Argentina	920	400		1,900		3,220
South Africa	1,600	660	380	670		3,310
India					3,150	3,150
Total apr.	45,561 (46%)	33,790 (34%)	6,806 (7%)	6,360 (6%)	6,367 (6%)	99,014

Source:
[fte. indexmundi.com/agriculture](https://www.indexmundi.com/agriculture)



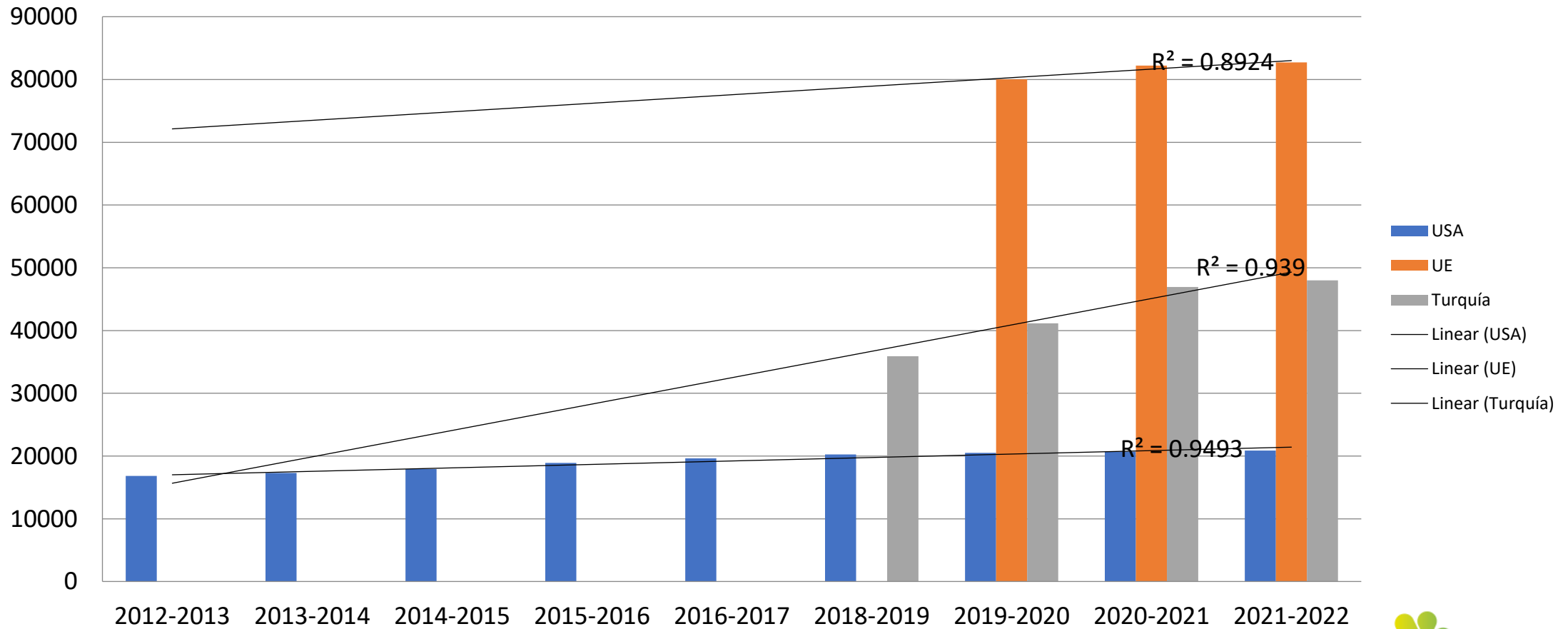
Northern Hemisphere Lemon Production (1000 tons)



Source:

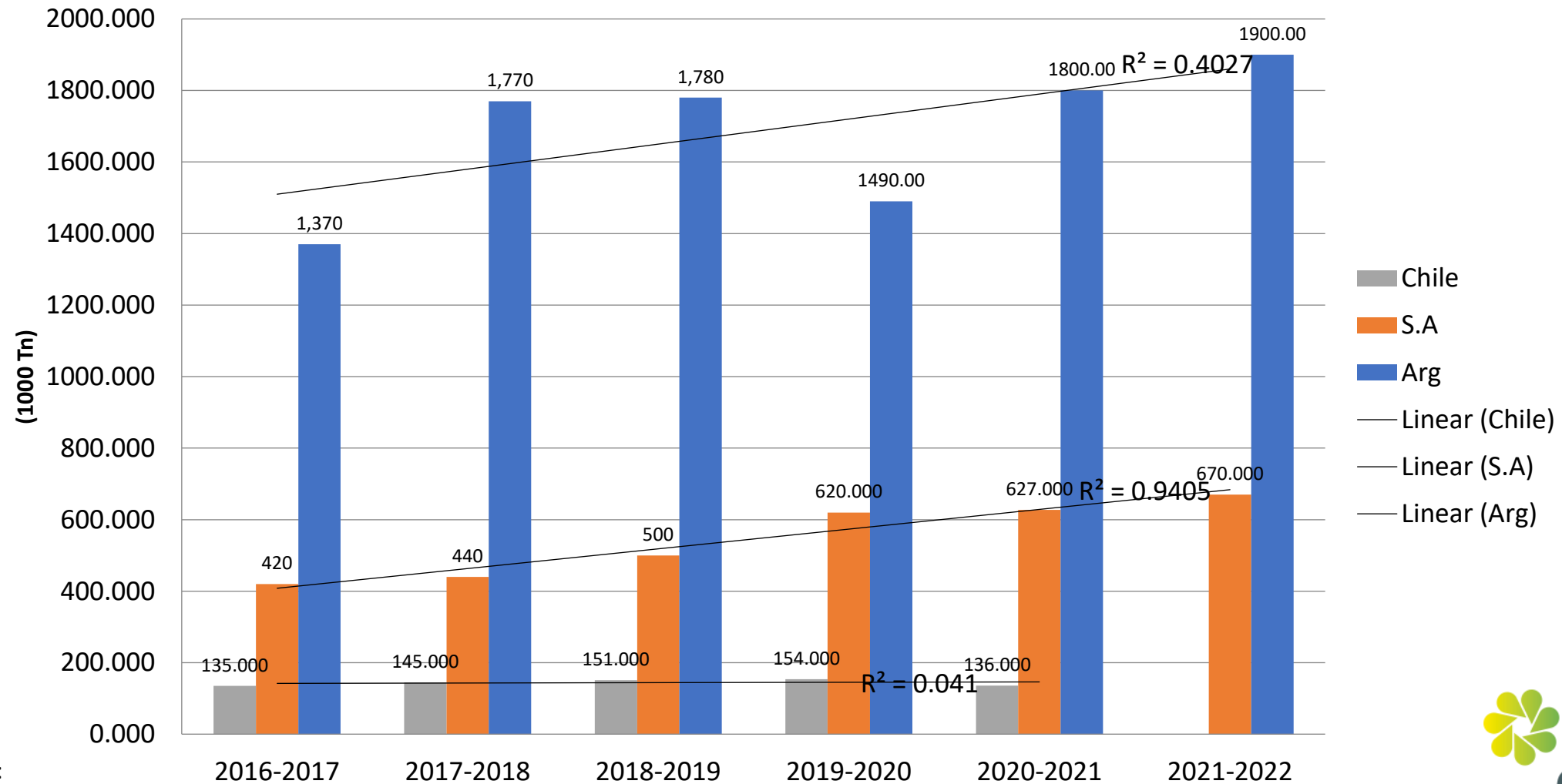


Northern Hemisphere Lemon Area (Hectares)



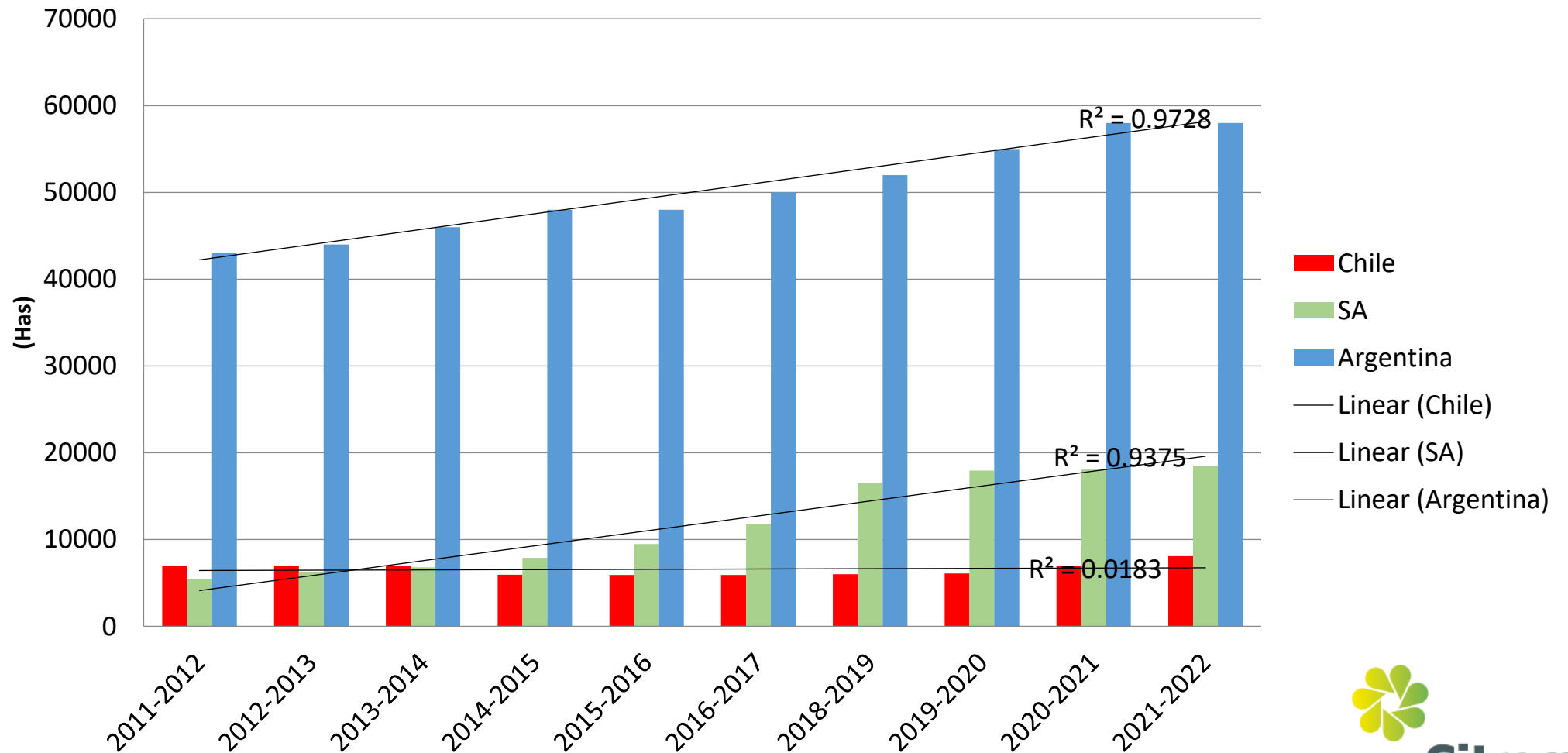
Source:

South American Southern Hemisphere Lemon Production (1,000 tons)



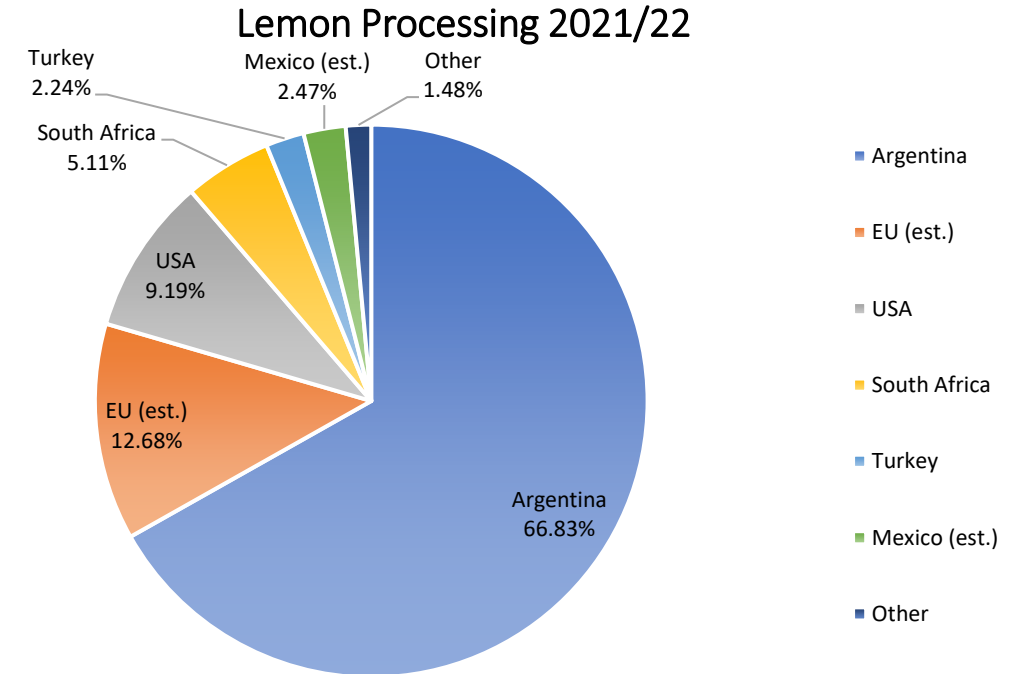
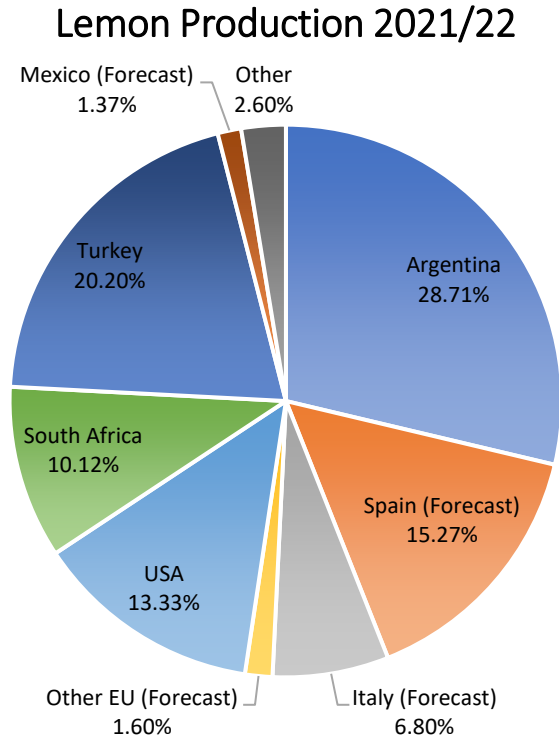
Source:

Southern Hemisphere Lemon Growing Area (Hectares)



Source:

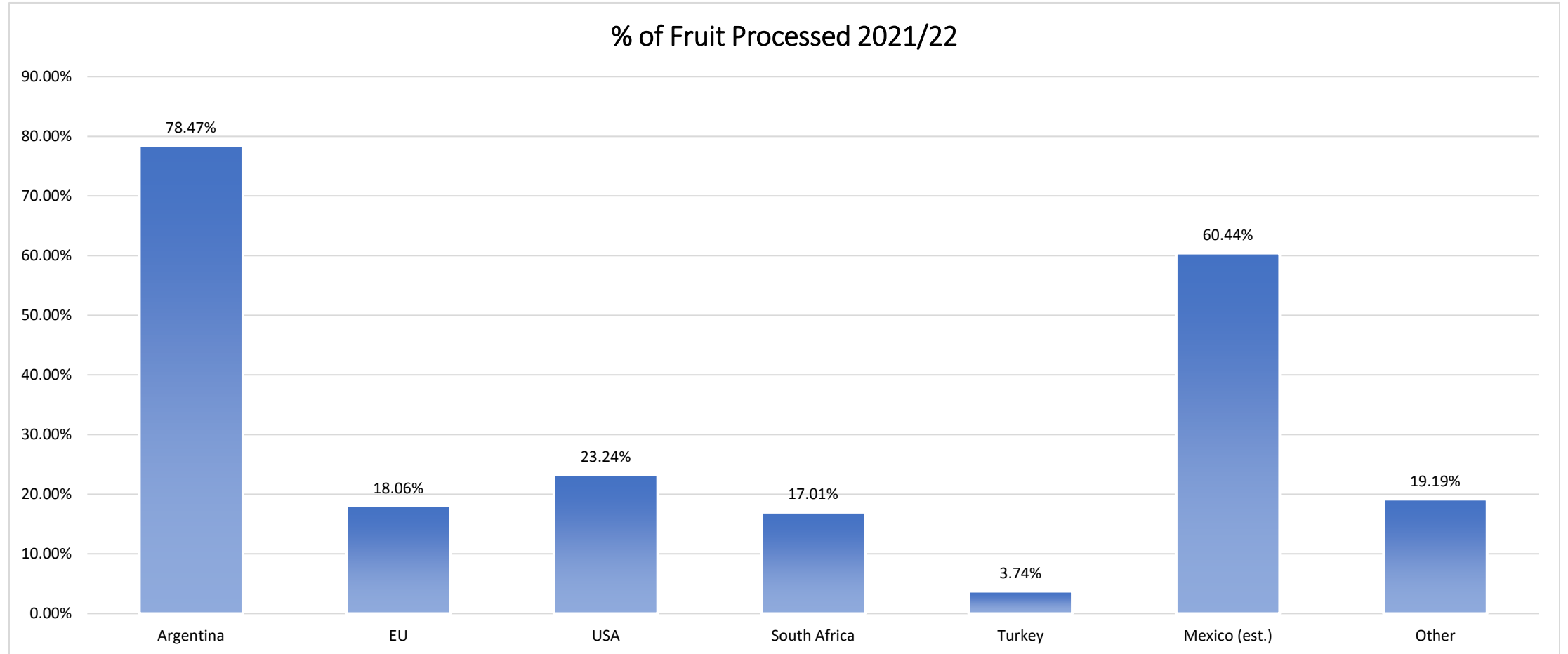
Global Lemon Producing Areas and Processing



- Only Argentina processes the majority of lemons **grown in the country**.
- Other countries mainly consume lemons as fresh fruit.

Source: USDA July 2022 Citrus: World Markets and Trade

Percentage of Fruit Processed by Country



Source: USDA July 2022 Citrus: World Markets and Trade



Fresh Fruit Exportations (MT)

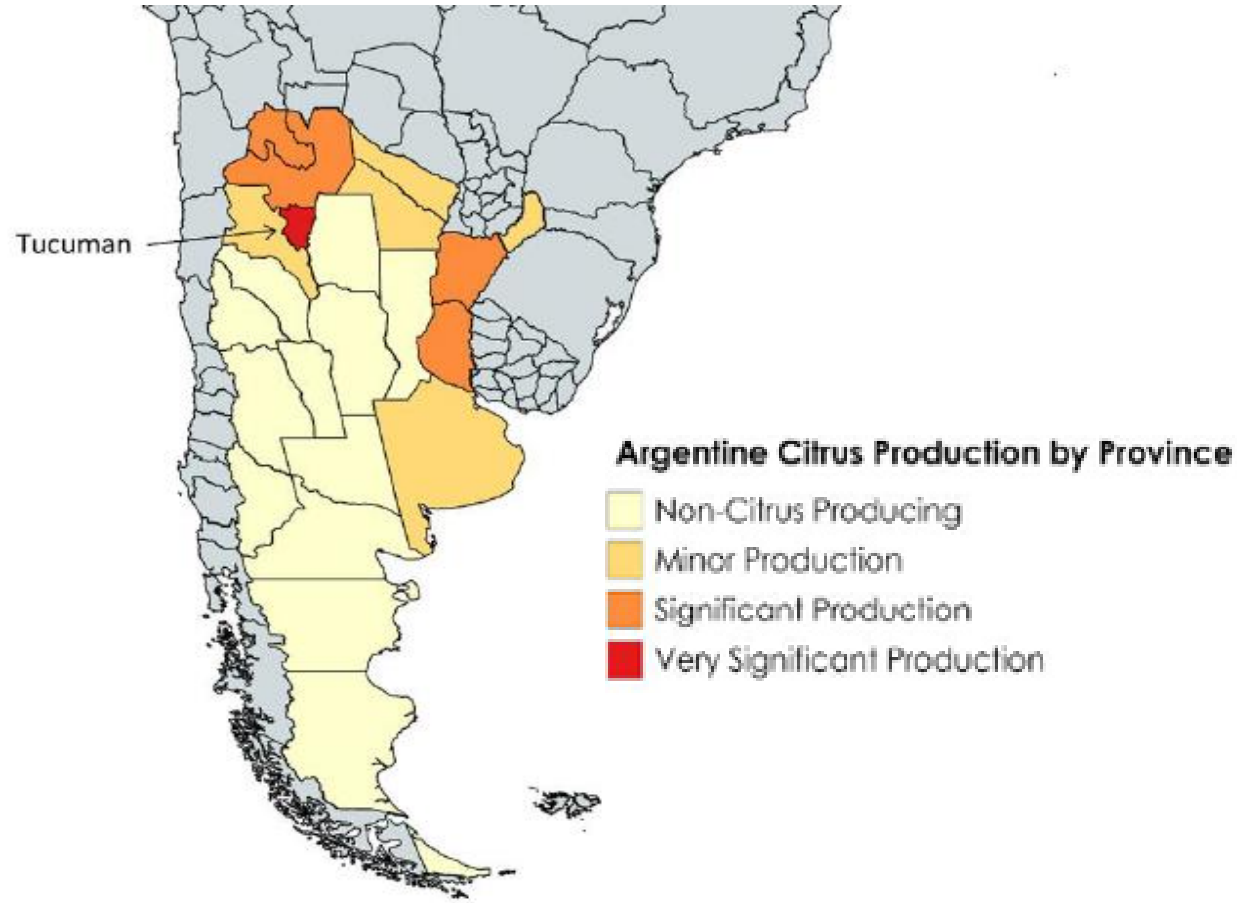
Country	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Mexico	523,000	519,000	610,000	662,000	731,000	729,000	751,000	798,000	795,000	798,000
EU	77,000	101,000	106,000	69,000	165,000	144,000	172,000	174,000	155,000	150,000
USA	110,000	127,000	114,000	110,000	112,000	97,000	96,000	93,000	85,000	90,000
Argentina	280,000	150,000	185,000	279,000	241,000	272,000	234,000	256,000	264,000	265,000
Chile									96,606	101,996
South Africa	165,000	220,000	246,000	237,000	299,000	315,000	350,000	458,000	490,000	510,000
Turkey	369,000	426,000	433,000	434,000	495,000	536,000	576,000	382,000	620,000	775,000

South Africa +3.1% increase in exportation
 Turkey +2.1% increase in exportation

Source:



Argentina Citrus Growing Regions



Created with mapchart.net ©

Sourced from USDA Foreign Agricultural Service
Citrus Semi-annual Report June 17, 2022
Buenos Aires, Argentina

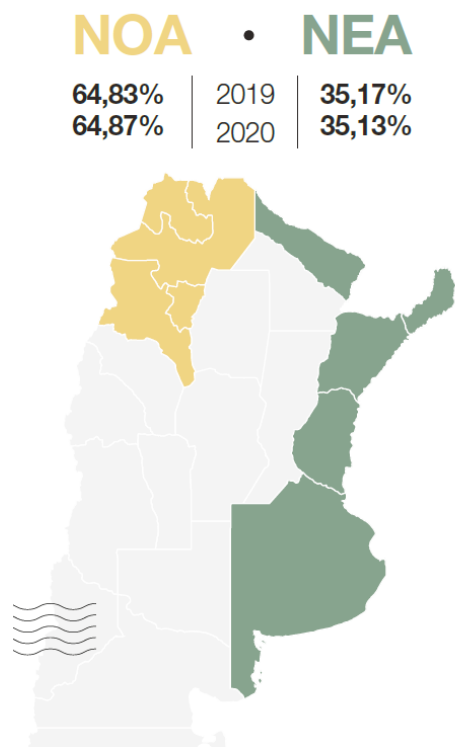


INFLUENCIA REGIONAL | REGIONAL INFLUENCE

Fuente/Source:

Localización de la producción cítrica Argentina Distribution per province of the Argentine citrus production

Informas regionales 2019



	Provincia Province	Año Year	Naranja Orange	Mandarina Mandarin	Limón Lemon	Pomelo Grapefruit	Total Total
NEA	● Entre Ríos	2019	+ 378.315	+ 161.629	= 16.200	+ 4.500	+ 560.644
		2020	- 302.652	- 113.140	= 16.200	- 4.374	- 436.366
NEA	● Misiones	2019	= 15.006	= 24.793	= 8.671	= 9.887	= 58.357
		2020	= 15.006	= 24.793	= 8.671	= 9.887	= 58.357
NEA	● Corrientes	2019	- 304.262	- 179.370	- 51.194	- 10.200	- 545.026
		2020	+ 352.042	+ 197.535	+ 81.100	+ 12.379	+ 643.056
NEA	● Buenos Aires	2019	+ 72.500	+ 1.800	- 1.900	- 2.100	+ 78.300
		2020	- 31.000	- 1.490	+ 5.000	+ 3.400	- 40.890
NEA	● Formosa	2019	= 441	= 0	= 774	= 10.329	= 11.544
		2020	= 441	= 0	= 774	= 10.329	= 11.544
NOA	● Jujuy	2019	+ 159.075	+ 35.489	+ 51.352	+ 17.762	- 260.678
		2020	- 148.154	- 16.838	- 84.707	- 10.980	+ 260.679
NOA	● Salta	2019	= 54.625	+ 2.550	= 203.940	= 33.000	+ 294.115
		2020	= 54.625	- 1.980	= 203.940	= 33.000	- 293.545
NOA	● Tucumán	2019	= 43.100	= 7.800	= 1.679.765	= 4.700	= 1.735.365
		2020	= 43.100	= 7.800	= 1.573.000	= 4.700	= 1.628.600
NOA	● Catamarca	2019	+ 10.839	+ 7.940	+ 2.193	= 0	+ 20.972
		2020	- 10.140	- 3.560	- 1.260	= 0	- 14.960
	TOTAL	2019	+ 1.038.163	- 421.371	+ 2.015.989	+ 89.478	- 3.565.001
		2020	- 957.160	+ 367.136	- 1.974.652	- 89.049	+ 3.387.997

Source:



PRODUCCIÓN NACIONAL DE FRUTAS CÍTRICAS FRESCAS EN LA ARGENTINA | ARGENTINA CITRUS PRODUCTION

Producción de frutas cítricas frescas (En toneladas - Período 2010/2021)





Argentina citrus production (Metric tons - 2010/2021)

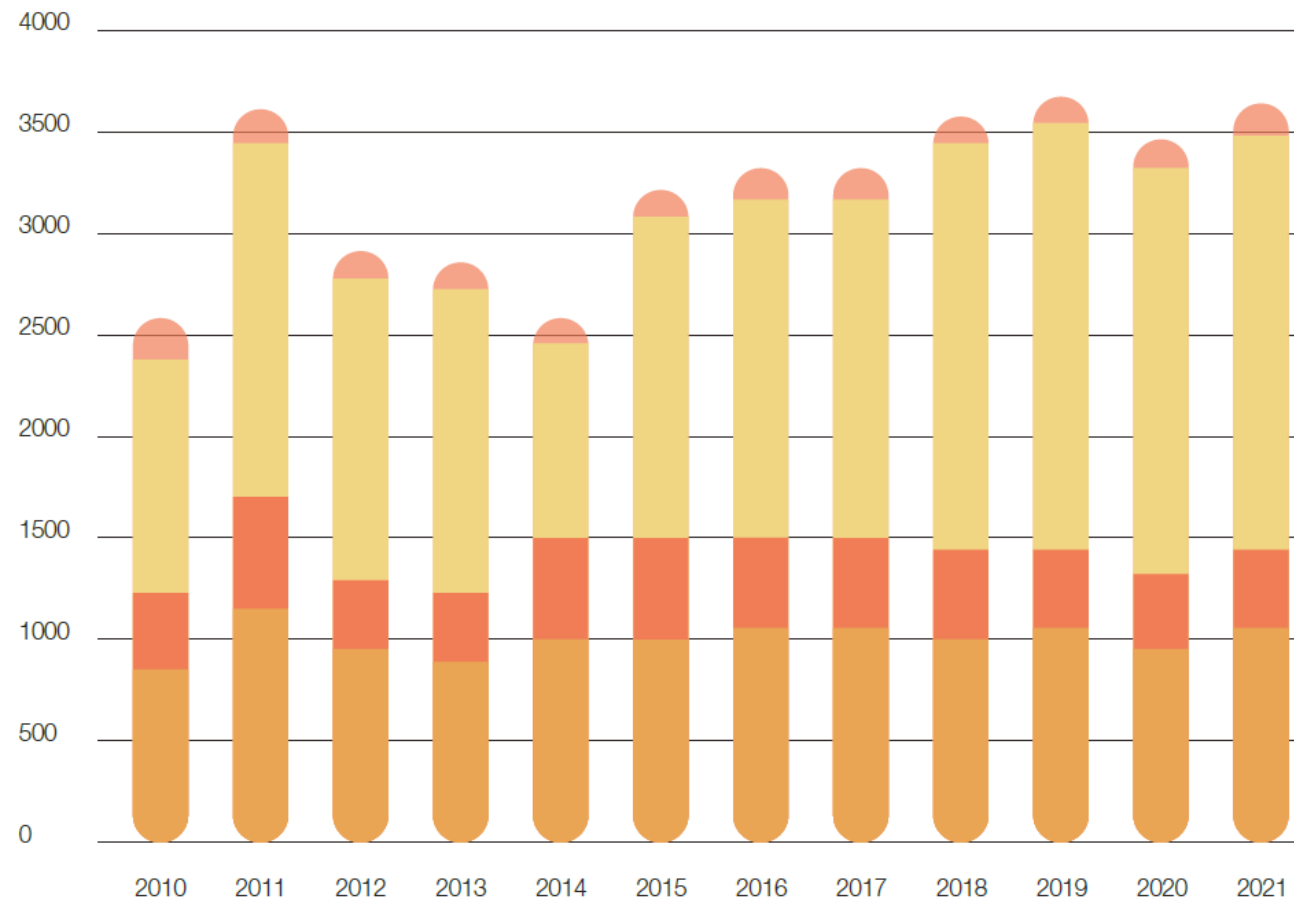
Fuente/Source:

Instituto Nacional de Tecnología Agropecuaria (INTA) - Informes Regionales 2019

EEAOC Obispo Colombes

(*) Estimación FederCítrus basado en progresión de años anteriores y ACNOA

Año agrícola Crop year	 Naranja Orange	 Mandarina Mandarin	 Limón Lemon	 Pomelo Grapefruit	Total Total
2010	833.486	423.737	1.113.375	188.820	2.559.418
2011	1.130.074	554.640	1.756.351	172.382	3.613.447
2012	933.526	373.970	1.456.069	132.196	2.895.761
2013	859.752	364.883	1.485.963	113.549	2.824.147
2014	1.022.276	486.630	953.890	130.786	2.593.582
2015	1.001.309	491.384	1.561.606	130.382	3.184.681
2016	1.032.446	468.278	1.678.337	102.259	3.281.320
2017	1.024.918	459.665	1.675.851	112.337	3.272.771
2018	1.006.779	431.374	1.989.400	114.118	3.541.671
2019	1.038.352	421.371	2.061.660	114.695	3.636.078
2020	957.160	367.136	1.974.652	89.049	3.387.997
2021	1.038.163	421.371	2.015.989	89.478	3.565.001



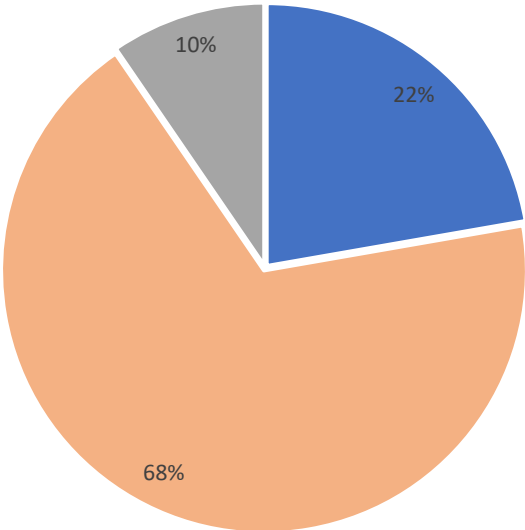
Source:

FEDERCÍTRUS



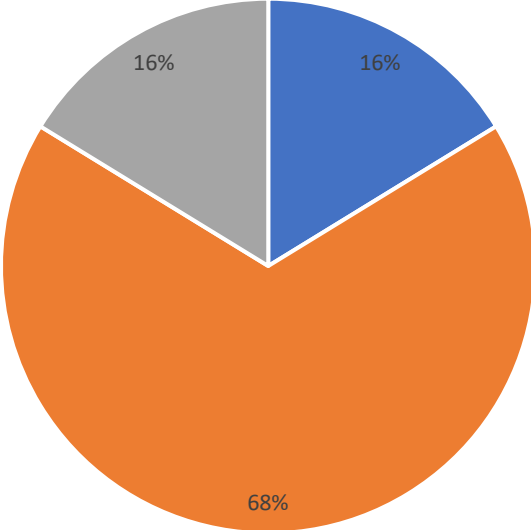
Argentina Citrus Production (Metric Tons)

Orange Production 2021/22
920,000 MT



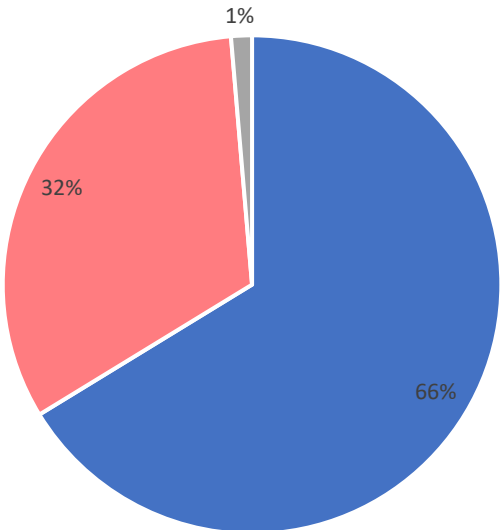
■ Processing ■ Fresh Fruit ■ Export

Tangerine Production 2021/22
400,000 MT



■ Processing ■ Fresh Fruit ■ Export

Grapefruit Production 2020/21
70,000 MT



■ Processing ■ Fresh Fruit ■ Export

Source: USDA July 2022 Citrus: World Markets and Trade

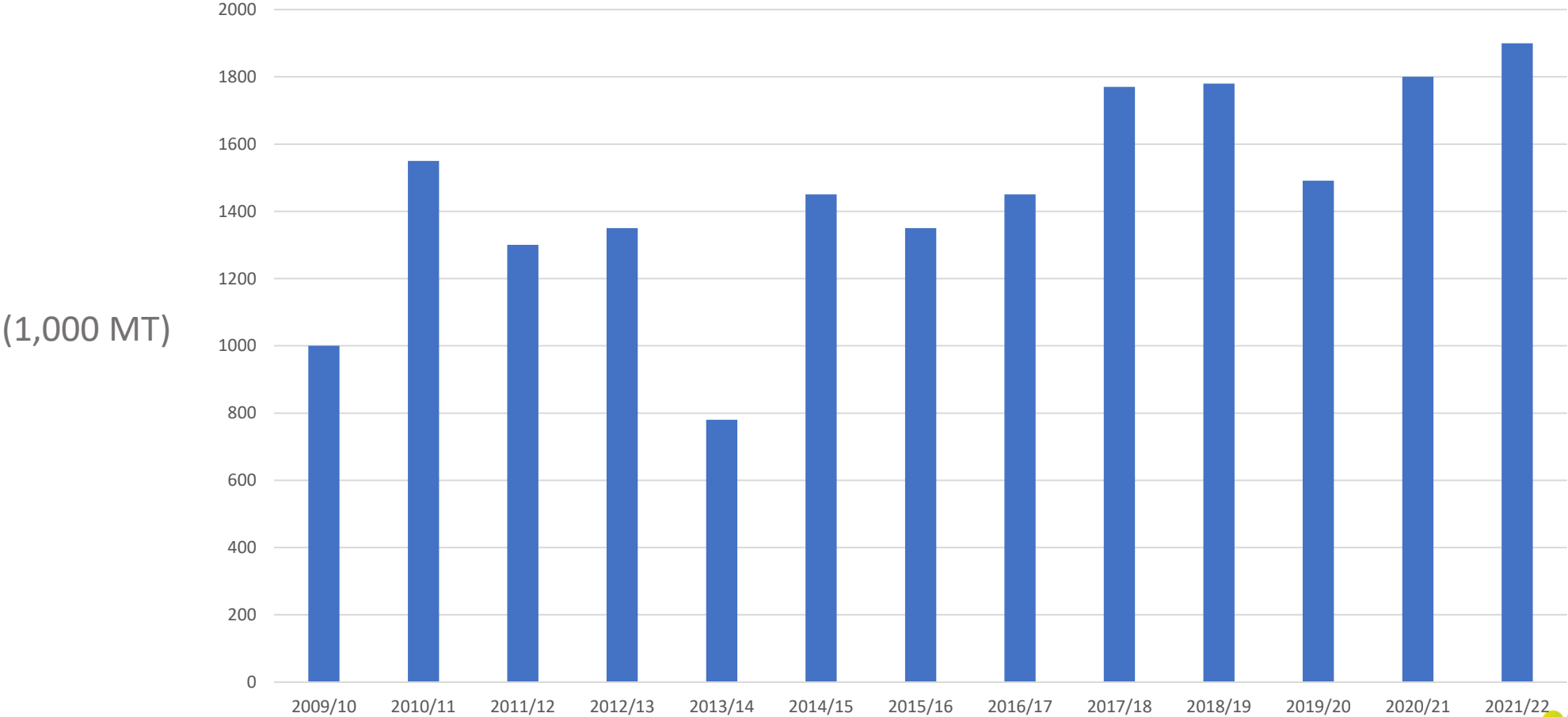
Fuente/Source:

INDEC - Instituto nacional de
tecnología agropecuaria (INTA)

Federocitrus



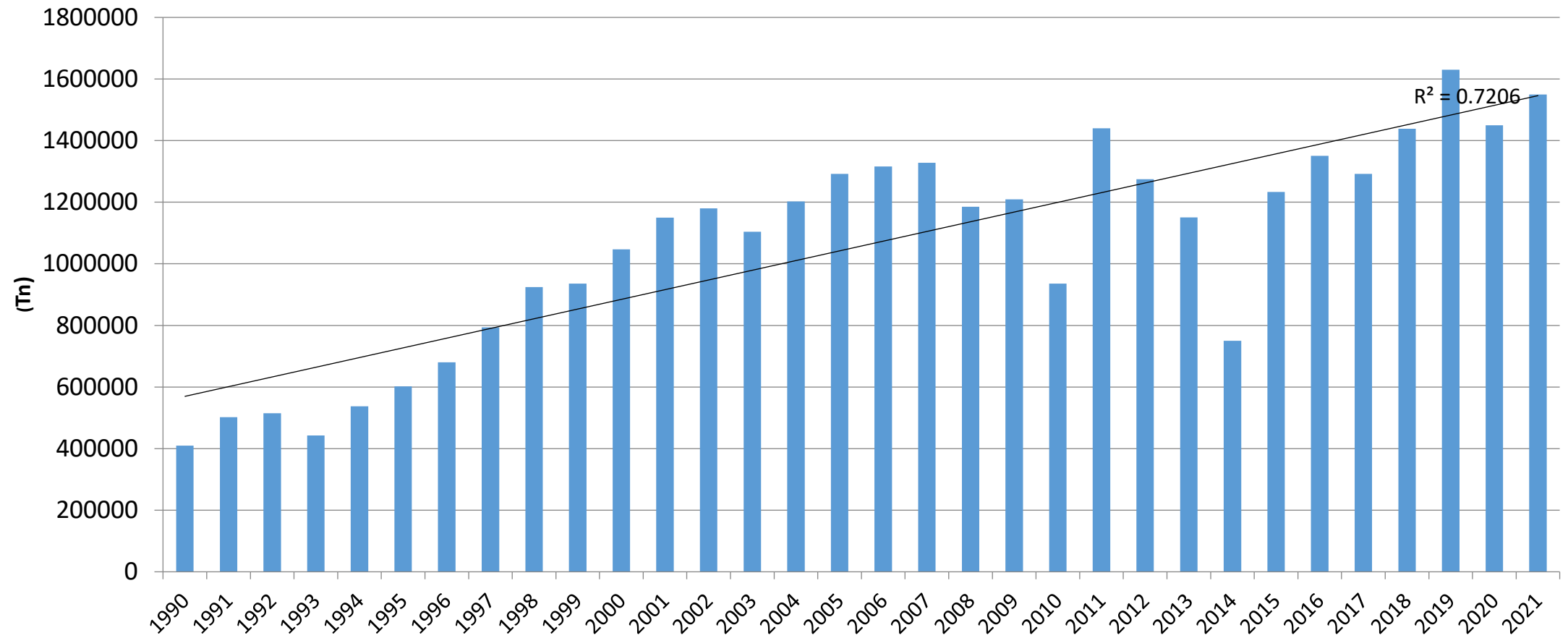
Argentina Lemon Production (1,000 MT)



Source: USDA July 2022 Citrus: World Markets and Trade



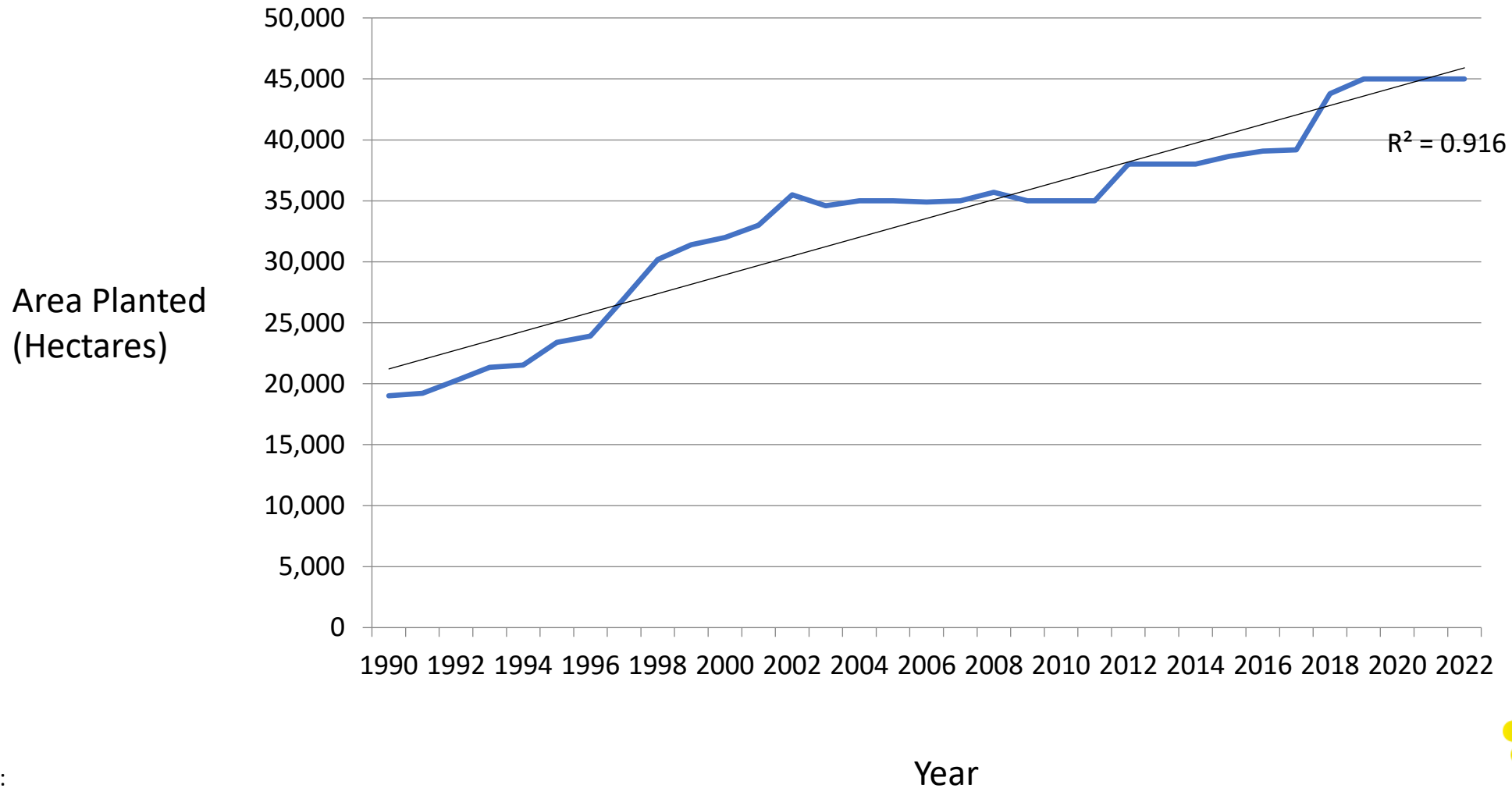
Lemon Production in Tucumán (MT)



Source:



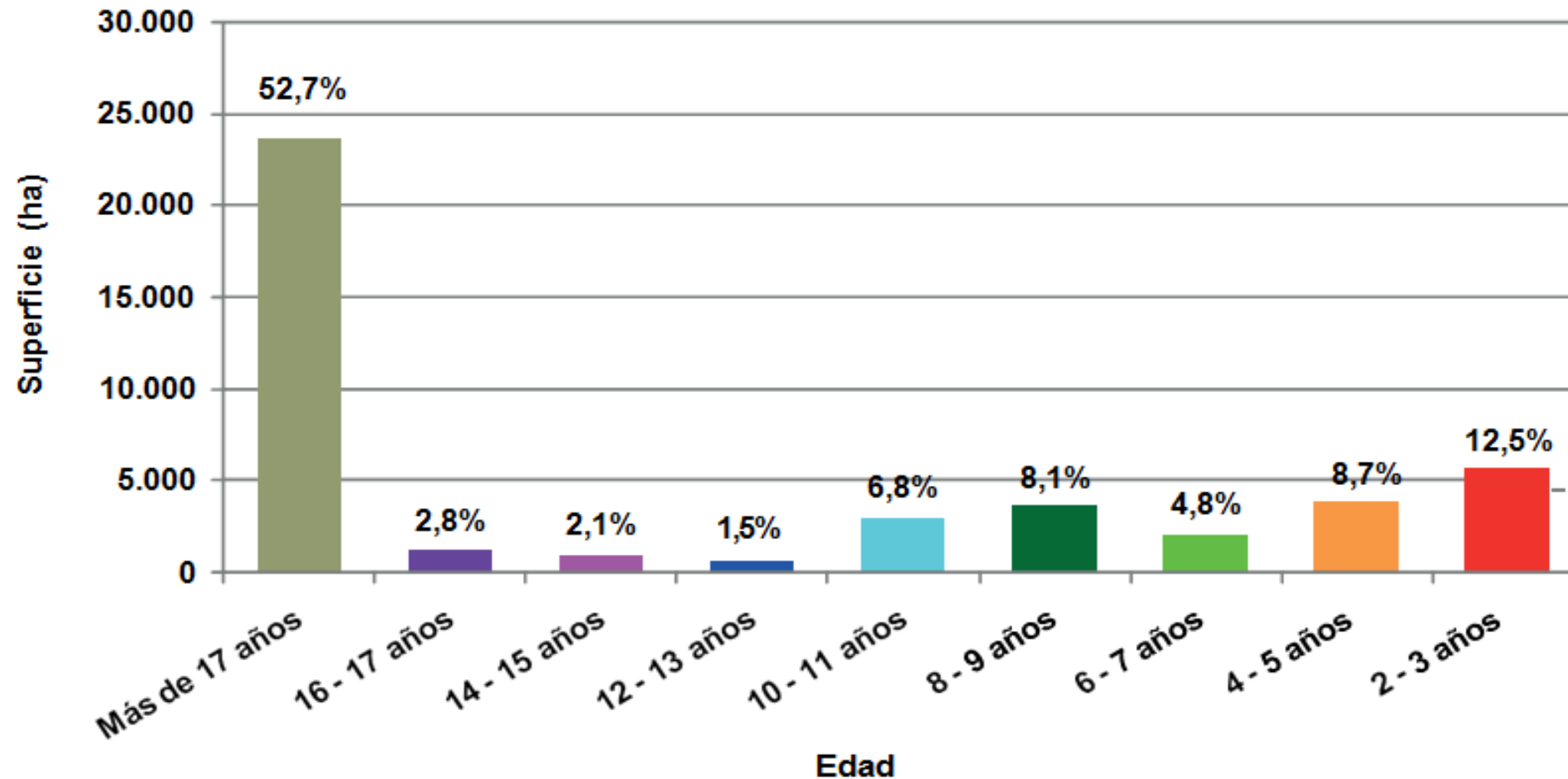
Lemon Growing Area in Tucumán (Hectares)



Source:



Age Distribution of Trees in Tucumán (2020)



Source:

Summary of Fresh Fruit and Industrial Products

How your products are grown and made

Packing House



Lemon Growing in Argentina



Success Begins in the Nursery

Good genetic citrus propagating material free from damaging pathogens

Availability of a large range of rootstocks and scions in the nursery

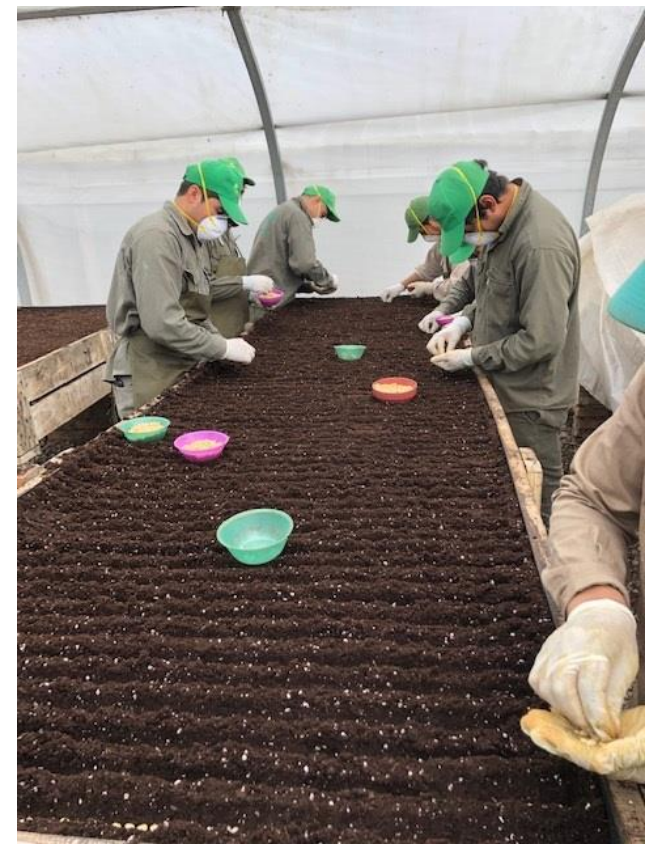
Lemon Rootstocks (to name a few) :

Sour orange
Cleopatra mandarin
Rangpur
Volkamer lemon
Troyer and Benton citrange
Swingle citrumelo
Flying Dragon trifoliolate
X 639 citrandarin
Citrandarin 61 AA3

Lemon Scions:

Eureka Frost *
Lisboa Frost *
Lisboa Limoneira 8 A
Genoa EEAT
Santa Teresa Feminello

* Main variety



Nursery



Nursery





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Argentina Socio-Economic Summary

Citrus Growers Forecast

Citrus Growers	5,300 Companies
2017/2018 and 2019/ 2020 Forecast	3.3 Mio MT
Citrus Packing Houses (export)	75
Processing Plants	22
Total Direct Workers	91,490

Citrus Industry Employment

Total Direct Workers	91,490
Permanent Employment / Primary Production	6,440
Transitional Employment	58,350
<ul style="list-style-type: none"> Nursery plantation and other activities Pruning/ weeding/ and other pre- harvest work Harvest (picking) 	<ul style="list-style-type: none"> 5,460 27,900 25,000
Permanent Employment (packing)	22,100
Permanent Employment (Industry)	4,600

Source:

SENASA - FederCitrus

Industrial Products - Lemon

How Lemons are made into the products you buy

Anatomy of a Lemon

Colored outer layer-

Flavedo or Epicarp - contains minute oil glands. This is the source for Lemon peel essential oil.

White inner peel

layer- Albedo or Mesocarp - Mostly chopped and dried and sold as “dried peel” for pectin manufacture.



Pulp or Endocarp

consists of tightly packed juice sacs. Source for juice and juice byproducts

Industrial Products

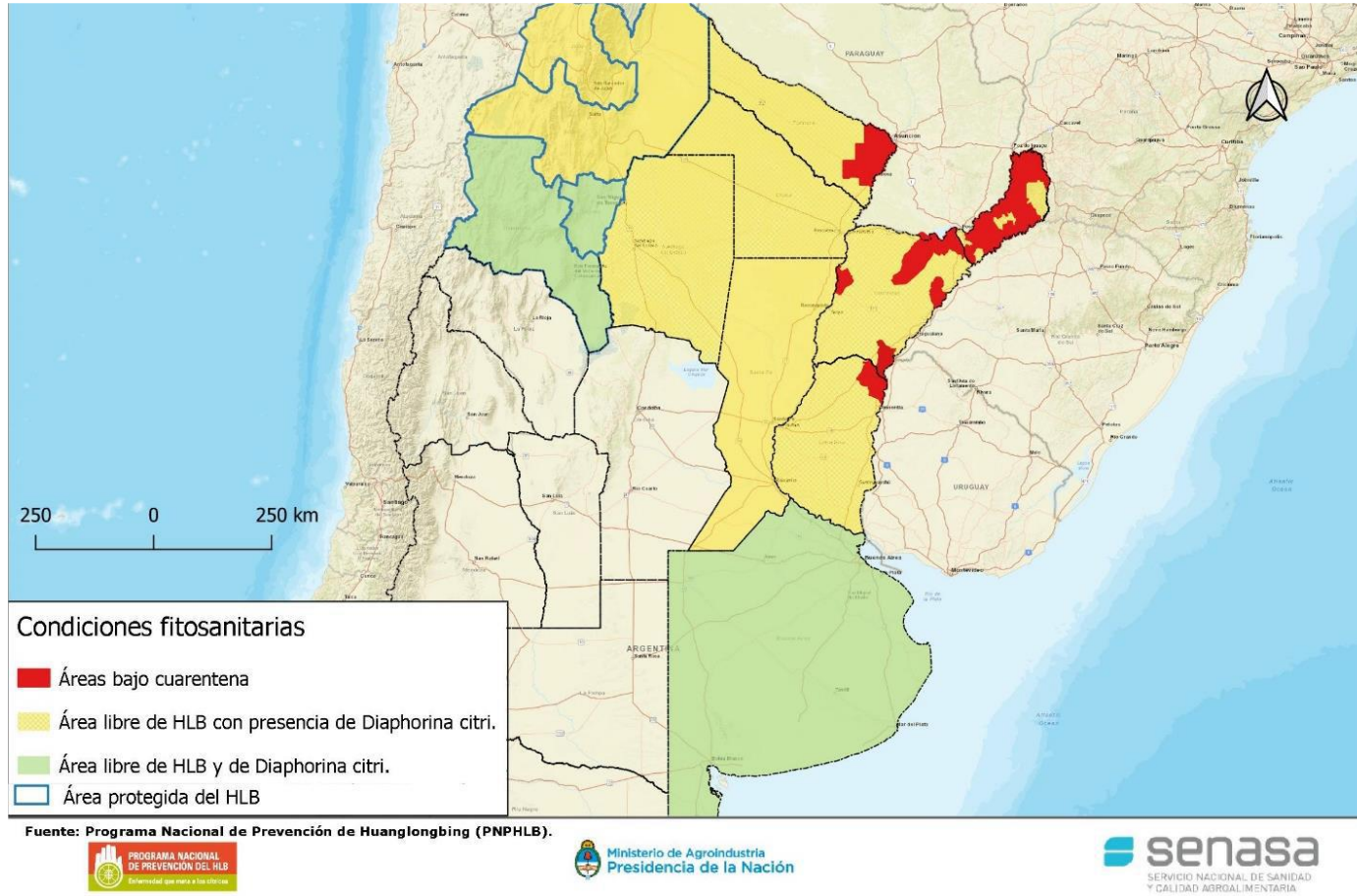
Main products per MT of Fruit:

- Peel oil = 5.5 Kg
- Dried peel = 50-55 Kg
- Concentrated juice = 60-65 Kg
- Aroma Water = 0.5 Kg
- Essence Oil = 0.03 Kg

Lemon Processing



HLB – Citrus Greening



Sourced from USDA Foreign Agricultural Service
Citrus Semi-annual Report June 17, 2022
Buenos Aires, Argentina

Sustainability

- Care for the Forests
 - As part of our **commitment** to the conservation of native forests we actively collaborate in the formation of sustainable communities through reforestation, cultural activities and forest management in public green spaces.
 - During the year 2021, 300 trees were donated from our forest nursery.
- Strategic work in our forests
 - We work together with Proyungas foundation in the survey of animal and plant species.
 - Given its great environmental value, the continuous forest patch area and the connections with the surrounding protected areas had more than satisfactory results in their evaluation, which generated a strong commitment to the preservation of this space.

Water and Energy

- We work to achieve water efficiency and the maximum harnessing of energy resources, promoting two guiding practices:
 - Sustainable use of the water
 - Sustainable energy management
- Some measures applied for water efficiency in primary production and industry:
 - Primary lemon production counts on two irrigation systems: drip irrigation and spray irrigation.
 - The primary production of blueberries has precision drip irrigation, with 95% efficiency, applied to 100% of the hectares destined for this crop.
- We carry out analyses of water quality and collect samples of tap and superficial water.
- Recirculation of 20,000 liters of water every 48 hours in the packing house, by filtration of the lemon tanks. It is carried out during the harvest period.
- 80% of the lighting of the factory warehouse was replaced by LED lights.

Social Responsibility

- We respect the legitimacy, the equity, the justice, the human rights, and the communities where our operations are carried out. By generating strategic actions with solid lines of work, we aim to improve the life quality of the communities in the area of influence.

Primary Production

- **Global GAP.**
- **GRASP**
- **SPRING:** Designed to complement GLOBALG.A.P. Certification towards irrigation water sustainable management.
- **FSMA:** Designed to complement GLOBALG.A.P. Certification towards FDA's Food Safety Modernization Act.
- **GGFSA:** Designed to complement GLOBALG.A.P. Certification towards sustainability production, based on SAI Platform.
- **SMETA 4 pillar V6**
- **Organic:** Certified under **NOP, IFOAM, SUE, JAS, and NOP-COR** protocols.

Industrial Certifications

- **FSSC 22000 System:** Food Safety System Certification provides a framework for effectively managing our organization's food safety responsibilities.
- **ISO 9001:2015:** is a quality management standard.
- **ISO 14001:2015:** specifies the requirements for an environmental management system that an organization can use to enhance its environmental performance.
- **SGF IRMA:** (Sure Global Fair – International Raw Material Assurance). Voluntary system focused on fruit juices genuineness.
- **SMETA 4 pillar V6:** (Sedex Members Ethical Trade Audit) Sedex Members Ethical Trade Audit (SMETA) is one of the most widely used ethical audit formats in the world. SMETA is an audit methodology, providing a compilation of best practice ethical audit techniques. It is designed to help auditors conduct high quality audits that encompass all aspects of responsible business practice, covering Sedex's four pillars of Labour, Health and Safety, Environment and Business Ethics.
- **Kosher:** Kosher Certification is the stamp of kosher approval by a rabbinical Agency verifying they have checked the products ingredients, production facility and actual production to ensure all ingredients, derivatives, tools and machinery have no trace of non-kosher substances. The Kosher Certified symbol assures consumers that both the actual product and its production adhere to all Kosher Law requirements.
- **Halal** Halal certification is a process which ensures the features and [quality](#) of the products according to the rules established by the Islamic Council that allow the use of the mark Halal
- **Organic:** Certified under **NOP, IFOAM, SUE, JAS, and NOP-COR** protocols.

Fresh Fruit Certifications

- **BRC (British Retail Consortium):** BRC Standards guarantee the standardization of quality, safety and operational criteria and ensure that manufacturers fulfil their legal obligations and provide protection for the end consumer.
- **HACCP:** (Hazard Analysis Critical Control Point) is internationally accepted as the most cost-effective method of preventing food contamination from chemical, microbiological and physical hazards.
- **Organic:** Certified under **NOP, IFOAM, SUE, JAS, and NOP-COR** protocols.
- **Global GAP:** The Worldwide Standard for Good Agricultural Practices
- **GRASP:** Designed to complement GLOBALG.A.P. Certification towards social aspects. GRASP helps producers establish a good social management system on their farms. It offers buyers added assurance. And it helps protect one of the farm's most important resources: ITS PEOPLE.
- **SMETA 4 pillar V6**
- **SPRING:** Designed to complement GLOBALG.A.P. Certification towards irrigation water sustainable management.
- **FSMA:** Designed to complement GLOBALG.A.P. Certification towards FDA's Food Safety Modernization Act.
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Summary

- Global Citrus production has increased 14% from 2010 to 2022
- Total Lemon Production is up 56.8%.
- Favorable weather resulted in higher Lemon Production in Argentina in 2021/22 (1.9 MMT)
- Argentina is in a strong position to provide the lemon products the food and beverage industries need.

Thank you!

Questions?