Article:

OLIVE OIL: Efforts of olive tree planting in Patagonia

Aurthors:

Víctor Tomaselli[1], Apóstolos Kiritsakis [2] Montserrat Godoy[3]

1. **Master Mill in Patagonia. Secretario de Producción Municipalidad de Ministro Ramos Mexía. Miembro de la RENAMA, Red Nacional de Municipios Agroecológicos. Ex representante del INAFCI (Instituto Nacional de Agricultura Familiar, Campesina e Indígena) ante la Comisión Nacional de Biopreparados del SENASA –Servicio Nacional de Calidad Agroalimentaria- Argentina. E-mail adress: victor.tomaselli@gmail.com**
2. **Apostolos Kiritsakis M.Sc., Ph.D. Emeritus Professor of International Hellenic University. Chairman of the Greek Observatory of Oxidative Stress. E-mail address: Απόστολος Κυριτσάκης; E-mail adress: kyritsak@gmail.com**

   Δρ. Απόστολος Κυριτσάκη M.Sc., Ph.D, Πολ. Πανεπιστήμιου του Μίτσιγκαν Ομότιμος Καθηγητής Διεθνούς Πανεπιστημίου Ελλάδος (ΔΙΠΑΕ) Φουλμπράϊτερ, AOCS Fellow Πρόεδρος Διεθνούς Παρατηρητηρίου Οξειδωτικού Στρες Πρόεδρος Αναπτυξιακής Εταιρείας Εννιά Χωριά Α.Ε

3. **Montserrat Godoy, CEO of MG Talent Consultoría Estratégica de Empresas Agroalimentarias, international specialists in olive oil and by-products. E-mail adress: montserratgodoy@gmail.com**

RESUMEN:

La Patagonia es un vasto territorio en el Sur de Argentina, con una superfice de casi dos millones de kilómetros cuadrados (1.912.000km^2) y una densidad poblacional de casi 1 habitante por kilómetro cuadrado con una diversidad de paisajes. Se desarrolla entre los Paralelos de 38°y 54°Latitud Sur. Este territorio que tiene tres áreas bien diferenciadas en costa atlántica, meseta y zona montañosa de la cordillera de los antes. Se han plantando olivos en Patagonia, desde finales del Siglo pasado, de modo sistemático, pero sin un esfuerzo orgánico ordenador. No obstante, en los últimos años han tratado de hacer aportes científicos, sobre todo a partir de la especialización de la Dra. Nadia Soledad Arias (**Arias, 2015**). Las plantaciones que se han realizado desde 1.999 hasta la actualidad, han prosperado por inversiones privadas. Esta revision

muestra los esfuerzos por visibilizar la realidad del cultivo del olivo en Patagonia, trabajo que se llevó a cabo través de la molturación de aceites de diferentes plantaciones y lugares. (**Revista Almazaras, 2022**). Tomamos en consideración que la realidad de hace 9 años mostraba muchas deficiencias en la calidad de los aceites ofrecidos,(**Pardo J.E. et al. 2011**). Mostramos también la realidad presente de la olivicultura argentina, con datos de la producción en los principales centros olivícolas. Se demuestra de modo palmario la realidad de la Patagonia hoy, con una producción de aceite de oliva de calidad y que tiene mucho para brindar al país y al mundo por el potencial de expansión.

ABSTRACT:

Patagonia is a vast territory in southern Argentina with an area of almost two million square kilometres (1,912,000 km2) and a population density of almost 1 inhabitant per square kilometre, with a wide variety of landscapes. It is located between the parallels of 38° and 54° south latitude. It has three distinct areas: the Atlantic coast, the plateau and the mountainous area of the Cordillera de los Antes. Olive trees have been planted in Patagonia since the end of the last century, systematically but without any organic effort. However, in recent years they have tried to make scientific contributions, especially since the specialisation of Dr. Nadia Soledad Arias (Arias, 2015). The plantations carried out from 1999 to the present day have flourished thanks to private investment. This review shows the effort to make visible the reality of olive growing in Patagonia, work that has been carried out through the milling of oils from different plantations and places (Almazaras Magazine, 2022). We have taken into account that the reality of 9 years ago showed many deficiencies in the quality of the oils offered (Pardo J.E. et al. 2011). We also show the reality of Argentine olive growing today, with data on production in the main olive-growing centres. We clearly show the reality of Patagonia today. It is a reality of quality olive oil that has a lot to offer the country and the world because of its potential for expansion.

Patagonian map. Source: https://marita-andandocaminos.blogspot.com/p/rutas-de-la-patagonia-mapa.html?m=1

Patagonia, a region of Argentina, covers a vast area of more than one million square kilometres, the southernmost part of Latin America. This vast region includes 5 whole provinces, Río Negro, Neuquén, Chubut, Santa Cruz and Tierra del Fuego, and parts of two other provinces, La Pampa (departments of Caleu Caleu and Lihué Calel) and the Province of Buenos Aires (Partido de Patagones). (**Argentinian legislation, 1985**)

Olive trees in Patagonia date back to the arrival of immigrants at the beginning of the 20th century. The legacy of these pioneers are hundreds of old plantations that allow us to analyse the productive capacity and potential with a low margin of error, using the latest technology.

The studies we have carried out in Patagonia show that, over almost a century, the different varieties of olive tree have adapted effectively to the diverse ecosystems of the region and that their intrinsic qualities are of exceptional quality, with a nutritional value recognised throughout the world.

Both aspects, the ability to adapt to the territory and the exceptional quality of the product, are central to the choices that will initiate a new generation of development policies aimed at the national complementarity of peripheral regions and regional diversification based on its cultivation, production and processing.(**Tomaselli V. 2022).**

Olive Oil

There is a lot of talk about olive oil and its health benefits. However, in this review we would like to clarify something that is fundamental for us:

It is necessary to know where the oil is produced (territory), what are the agronomic practices that allow its harmonious development and, of course, to document the elaboration process so that all the beneficial and healthy properties of this fruit juice express their best values.

The first systematic planting of olive trees in Patagonia took place between 1913 and 1921. It was in the town of Patagones, in the province of Buenos Aires, on the banks of the River Negro. Pedro A. Bovet spent 8 years planting, building an oil mill and personally processing the product harvested from these olive trees. He described his experiences, work and efforts in a beautiful book entitled 'El olivo: su cultivo y

utilización en la Chacra Argentina'. This extraordinary book had to wait until 1935 before it was published and made available to the public. (**Bovet, Pedro A. 1935**)

A little over 80 years passed between this pioneering experience and productive olive growing. It was only at the beginning of the new century that it was resumed, with hesitant beginnings in Las Grutas-San Antonio Oeste. The initial idea of buying the first 900 olive plants came from a Pied Noire, a Frenchman born in Africa, then a nurseryman in Las Grutas, named Philippe Thurin, who was born in Algeria and came to Argentina at the age of 6, emigrating like so many French settlers to African soil. Philippe had grown up on his father's farm, among oranges and olive trees, and knew exactly what the soil and water requirements of the olive tree, a cultivated desert plant, were. His experience paid off and today there are more than three hundred hectares of olive trees thriving in the area. They were then planted in other parts of the provinces of Río Negro and Neuquén. And in 2008, the first trials were carried out in Puerto Madryn, in the province of Chubut. **(Crónica, 2021)**

In 2013, production in Chubut began to be analysed, with surprising results. The virtuous relationship between olive growing and the territory was established. It has always been a slow and difficult process. Just as it took more than 17 years for Bovet to be able to print its results, so each step was taken with effort and tenacity until it was possible to expand the plantations and measure the concrete products. And some things have been achieved, such as the recognition by the Federal Investment Council (CFI) that olive growing is possible in Chubut, which has led to its sponsorship and participation in an event to be held in Puerto Madryn in February 2022. (**Biblioteca CONSEJO FEDERAL DE INVERSIONES, 2022**)

A national perspective

The reality is that Argentina occupies a very small place in the context of world olive production.

A strategy for the sector must start from the fact that today Argentina accounts for 1% of world production and that domestic consumption is only 200 grams per inhabitant per year. In other words, we are starting from a very low base.

Let's look at these figures from the International Olive Council's point of view:

ARGENTINA: OLIVE OIL PRODUCTION PER YEAR IN TONNES.	
Year	**TONNES.**
16/17	24.000,00
17/18	45.000,00
18/19	28.000,00
19/20	30.000,00
20/21	30.000,00

Source: International Olive Oil Council (IOC) Sitio web oficial, elaboración del autor.

On the other hand, analysing oil production and destinations using the latest available data, the following picture emerges:

ARGENTINA: OLIVE OIL PRODUCTION AND DESTINATIONS 2020/2021 IN TONNES.	
PRODUCTION	**30000**
CONSUMER	**7500**
IMPORT	**500**
EXPORT	**23000**

SOURCE: https://www.internationaloliveoil.org/what-we-do/economic-affairs-promotion-unit/#prices **elaboración del autor.**

This picture expresses the result of a historical practice that needs to be reviewed in the light of experience and new scientific data available, bearing in mind that many of these reasons also have to do with the olive growers themselves. The impression is that the learning curve needs to be accelerated in some respects, taking into account the entire production and marketing chain.

Argentina's livestock and agricultural tradition, very much focused on the wet pampas, has created a general framework for the activity, which has always been considered secondary for the country. In fact, olive growing has always been a landlocked, low-productivity activity (from the point of view of cereal growers). For those who dominate the food market in the capital and the hinterland of Buenos Aires, it has always been easier to import oil and olives than to try to improve what is produced in the country.

However, this 1% for inland production is not insignificant and is a starting point for considering the place of Argentina, and Patagonia in particular, in the world of olive trade.

Data on the situation in Argentina are presented in the table below. There are some discrepancies between the sources, indicating the need for some consolidation at official level for decision-making purposes.

Looking at the proportions, it can be noted that of the total area planted in Argentina, 30% is used for table olives, 50% for olive oil production and 20% for dual use. Another interesting fact is that of the total area planted for oil production, just over a fifth is used for domestic consumption, while the rest is exported.

The geographical distribution is as follows: The provinces of San Juan (17%), Mendoza (16%) and San Luis, with low production, represent the Cuyo region. The provinces of San Juan (17%), Mendoza (16%) and San Luis (16%) express the Cuyo region, while 52% of the activity takes place in Catamarca and La Rioja, provinces known as the Northwest. Cordoba accounts for 9% of Argentina's olive-growing area.

According to our observations, there has been a decline in activity over the last decade. In the following, we will present some analyses that allow us to formulate hypotheses in this regard, with a view to making informed decisions. The current data are as follows:

DATOS PRODUCCIÓN OLIVÍCOLA ARGENTINA EN SUPERFICIE Y CANTIDAD EXPLOTACIONES -INDEC-Censo Agr. 2018

		OLIVOS ACEITE		OLIVOS MESA			
		HECTÁREAS	EXPLOTAC.	HECTÁREAS	EXPLOTAC.	TOTAL HAS.	TOTAL EXPLOT
PAÍS	ARGENTINA	52.508,10	1.964,00	24.662,70	1.830,00	**77.170,80**	**3.794,00**
PROVINCIAS	BUENOS AIRES	1.270,80	13,00	178,50		1.449,30	13,00
	CATAMARCA	11.500,80	195,00	3.964,50		15.465,30	195,00
	CHUBUT	0,50		0,20		0,70	0,00
	CÓRDOBA	2.999,30	64,00	1.485,00	12,00	4.484,30	76,00
	LA RIOJA	13.592,90	156,00	12.172,70	436,00	25.765,60	592,00
	MENDOZA	11.960,10	1.259,00	3.865,10	868,00	15.825,20	2.127,00
	NEUQUÉN	363,00	5,00			363,00	5,00
	RÍO NEGRO	260,50	11,00	3,00		263,50	11,00
	SALTA	374,80	4,00			374,80	4,00
	SAN JUAN	10.145,20	251,00	2.889,10	135,00	13.034,30	386,00
	SAN LUIS	30,50		4,00		34,50	0,00
	CONTROL					77.060,50	3.409,00
	INCONSISTENCIA DE DATOS (FALTAN)					**110**	**385**

Prepared by: Víctor Tomaselli on 14/11/21 SOURCES: INDEC website, page 232. Available from July 2021. Consulted on 16th March of 2025 https://cna2018.indec.gob.ar/assets/cna-resultados-definitivos.pdf

The basic problems of the activity are caused by a pincer that has two very strong jaws: 1st. The low yield of oil extraction, which is around 11-12%, and 2nd. The low content

of polyphenols and oleic acid in the central valleys of Catamarca and La Rioja, where most of the activity is concentrated.

This was a suspicion of producers and marketers, but it acquired scientific evidence with the work published in 2009, in which Dr Marta Melgarejo, head of the Argentinean Association of Fats and Oils, as co-author, states that: In the case of oils of the Arbequina variety, produced mainly in the warm valleys of La Rioja and Catamarca in Argentina, the same values showed some deviations in their composition with respect to the limits established by international regulations. For example, oleic acid (C18:1) levels below the limit (55.00%) were observed in around 80% of the Arbequina samples from the 2004 and 2006 harvests. In general, the low C18:1 content was accompanied by high levels of palmitic acid (C16:0) >20.0%, linoleic acid (C18:2) >21.0% and palmitoleic acid (C16:1) >3.5%. (**GRASAS Y ACEITES Magazine Ceci Liliana, Martha Melgarejo and Adriana Carelli, 2009).**

The work refers to the area known as the Central Valleys of La Rioja and Catamarca, but it is possible to conclude that in similar ecosystems, for the same variety, the results should be similar. It should be stressed that this is the case in the Central Valleys, but not in other valleys such as Chilecito, Pomán, Andalgalá and Tinogasta, where the altitude compensates for the latitude factor.

In order to analyse strategies for improving the production and marketing of olives in general, it is necessary to begin with a scientific analysis, since the very weakness of the statistics themselves encourages reports that, because they are erroneous, tend to show a chaos that is not there.

In this sense, we will postulate that it is necessary to start from the premise that the central problems to be faced are two: 1) the low yield of the crops and 2) the average quality of the oil in relation to the requirements of the world market.

This is independent of fiscal and logistical problems. The key point that was not taken into account in 1996, and for which there is now scientific evidence, is that the olive tree responds to the climate and the soil with some iron rules, including that "for every degree of increase in temperature above 30° Celsius, the oleic acid content decreases in inverse proportion". (**Kiritsakis, Apóstolos et al. 2017**) This creates a fundamental

quality problem. To be more precise, if it does not contain a minimum of 55% oleic acid, it is NOT extra virgin olive oil.

Secondly, the quality of the olive oil produced in Argentina has been scientifically evaluated by a team from the University of Castilla-La Mancha, led by Dr José Emilio Pardo. The conclusion of this study, carried out in 2009, is clear: “According to chemical analyses of these oils, only 20% of the samples can be considered to have an acceptable quality as the results obtained fit the values established by international regulations.” (**Pardo, J.E. et al.2011)**

Virtuous interaction between peripheral productive ecosystems.

At this point, we would like to highlight the importance of the small developments taking place in Southern Patagonia, the southern part of the country. This is where a cold but temperate climate allows the cultivation of olive trees to overcome quality limitations and reach superlative levels.

Just look at the article published in RIVISTA DI AGRARIA; from Florence, Italy, which highlights the figures for olive oil produced in Puerto Madryn, Chubut province, the heart of Patagonia. (**Rivista di Agraria, 2013**)

Climate undoubtedly has a lot to do with these laboratory results, but so do agronomic practices, which we will discuss later.

From this approach to analysis, we link the "breeding" of the olive tree to the intrinsic quality expressed by an area. And, more importantly, how this territory contributes to the production of a functional food, i.e. one that is essential because it improves people's daily lives. (**Tomaselli V. et Clodoveo, M.L. 2017**)

Horizons of learning and improvement.

Today, olive growing all over the world is aimed at increasing the yield of oil and at the same time improving its quality, hence the remarkable efforts of people like Dott.ssa Maria Lisa Clodoveo and Dott. Riccardo Amirante (**Clodoveo profile**), who are developing the use of ultrasound to improve the olive oil extraction process. In addition, to increase the content of polyphenols and all those expressions of particular aspects that make the quality.

The starting point for a decisive expansion of this production in Patagonia is very solid, combining the most advanced science with the wisdom of a millenary culture.

Picual olive tree in Añelo, Neuquén. Ten years of planting: average yield of 52 kilos of olives per plant. Harvest in 2021. Photo V.T.

In this regard, we highlight the publication in August 2017 of the book OLIVE OIL AND OLIVE OIL AS FUNCTIONAL FOODS, Bioactivity, Chemistry and Processing. Edited by Apostolos Kiritsakis and Fereidoon Shahidi. A joint effort between the Department of Food Technology of the Alexander Institute of Thessaloniki, Greece and the Department of Biochemistry of the University of Newfoundland, Canada.

This publication analyses all the elements that make olive oil a functional food and, at the same time, analyses each of the aspects that have to do with the development of the cultivation and extraction of the oil, its conservation, distribution and arrival to the public. At the end of the book he analyses the reality of the world market today, where he says:

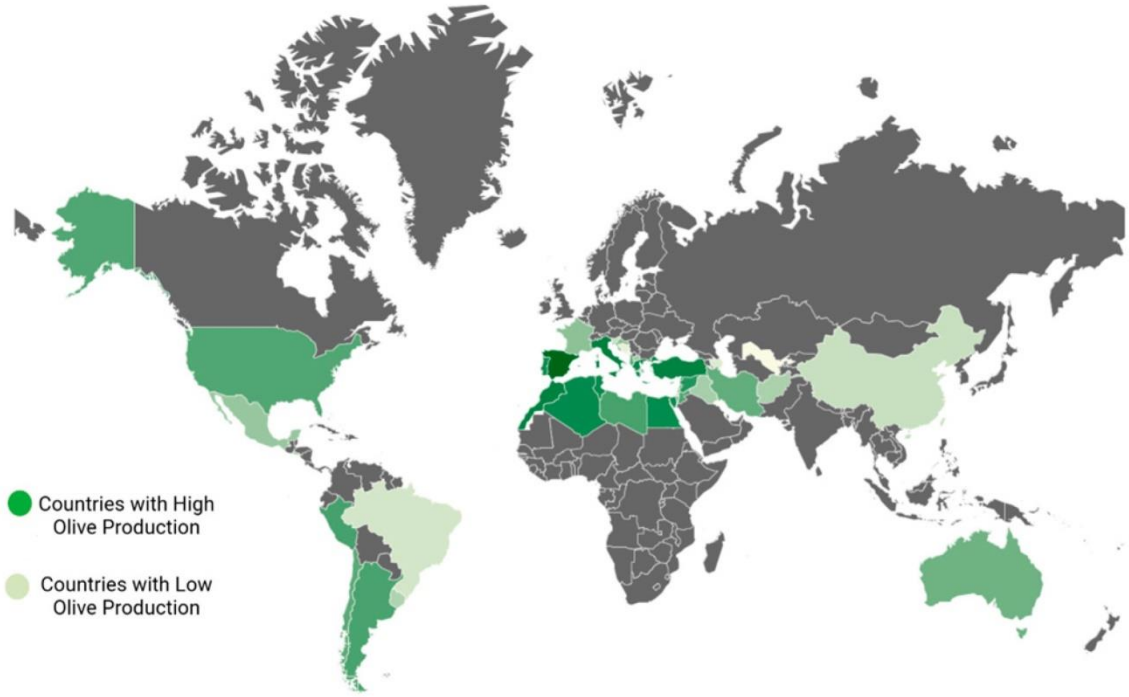
“Olive oil is one of the most important commodities and foodstuffs, both for the economy of the producing countries and for the consumers, due to its healthy attributes. Yet, up to the present and despite the progress in the omics field, there is still little

information regarding the genomic sequence of *Olea europaea*. However, a continuously increasing number of expressed gene functions have been described, using the next-generation sequencing approaches as well (Chiappetta *et al.*, 2015). The recent advantages in omics technologies suggest that we will soon be able to identify the molecular pathways of all the important components of olives and olive oils, which will allow the efficient breeding and usage of the vast olive germplasm for the production of even healthier products. Omics technologies will also allow us not only to breed better cultivars but also be able to identify how the functional constituents of olives and olive oil influence human health, what mechanisms are involved, and how we can use them to live a healthier life." (**Fereidoon Shahidis et Apostolos Kiritsakis, 2017).**

So Patagonia has enormous potential for olive growing today, because it has suitable soils, enough water and a large amount of land that can be cultivated. In terms of quality, we had a clear example in 2013 with the first production in Puerto Madryn, which was fully analysed by INTI in Mendoza. We planted in 2017, produced olive oil in 2018, also analysed by INTI, planted again this year and in the following years until now, we continue to plant. The analyses of the oil produced are very good, the quality is getting better every year, not only in terms of the fatty acid composition. All the values analysed that have to do with quality have shown very good parameters.

The reality shows that the chosen path is valid and is currently having an impact on the southern line of the Río Negro and in various parts of the province of Chubut. The same criteria, which are still in their infancy due to the exploratory research currently underway, allow us to hypothesise that there are areas with similar potential, at least in the north of Santa Cruz**.**

If we look at the territorial context, we can see that the basaltic soils, clearly of volcanic origin, are similar to those around Mount Etna in Sicily. And if we take a closer look, we will see that the species of the genus Larrea (*L. divaricata, L. nitida and L. ameghinoi*), which they host as nurse plants for the crops, have the common name of Jarilla, given to them by the first *Spaniards who arrived, and which comes from their similarity to the JARA of Andalusia (Cistus ladanifer).*



Worldwide geographical locations of olive cultivation[1]

Innovation paths have several steps, but they all start with a first step: proving that the chosen option is viable. This is self-evident: all the studies show that the conditions for viability exist. There is technical knowledge that gives hope, but its medium- and long-term realisation depends on the perception and appreciation of these practices by the social group to which they are addressed.

Climate change is forcing us to diversify our production and have as much genetic variability as possible, because only those who adapt will be able to survive, and this could be perfectly applied to the economy. If you stay in the same place doing the same thing, you will lose. We need to diversify and innovate. That is why these ecotypes of traditional Patagonian olive trees, with their decades of adaptation to a difficult environment such as Patagonia, have much to contribute to today's olive-growing world.

[1] **Elhrech, H.; Aguerd, O.; El Kourchi, C.; Gallo, M.; Naviglio, D.; Chamkhi, I.; Bouyahya, A. Comprehensive Review of Olea europaea: A Holistic Exploration into Its Botanical Marvels, Phytochemical Riches, Therapeutic Potentials, and Safety Profile. Biomolecules 2024, 14, 722. https://doi.org/10.3390/ biom14060722**

Those who recognise these qualities invite us to make a Patagonian leap, as Dr. José Emilio Prado González of the University of Castilla-La Mancha does in his great wisdom: "Without a doubt, obtaining more intense oils, with greater intensity of fruitiness, bitterness and spiciness, will serve to compete with Mediterranean oils".

The world of olive growing looks different from the perspective of Patagonia. Because we have overcome many trials, adapting to a world of climate change and uncertain prospects. That is why we have been able to develop organic products that are state of the art biostimulants, such as the ALGAE algae extract from Laboratorios Biotec S.A., which uses the brown algae Macrocystis pyrifera from cold seas and is produced in Camarones, Chubut. This product contains 21 amino acids and 9 natural hormones. In addition to its individual action, which has been proven by scientists in different parts of the world, it has a synergistic action as a consortium of compounds that allow plants to overcome stress caused by multiple factors. These compounds, such as all the biologicals recommended by the AGRO-ECOLOGICAL principles make it possible to reduce costs and thus increase profit margins without having to increase the selling prices of the products. These are the things (facts, processes, phenomena) that make us strong, and this is what those in power should evaluate in order to generate the right policies.

Drone view of the site of the olive farm in Ministro Ramos Mexía, Río Negro Province. Patagonia. Photo Canal 10 Tv Río Negro.

Agroforestry in the Municipality of Ministro Ramos Mexía, Southern Line of Río Negro Province. Patagonia. Argentina. Olive trees 162 days after planting. Photo V.T.

<u>This is what we mean by SUSTAINABLE CULTURE, with a triple impact: economic-social-environmental.</u>

Olive trees at Estancia Don Angel, 30 km north of Trelew, on route 8, on the road to Telsen, planted in 2019. The olive trees are of the Frantoio variety, from the El Aguaribay nursery, Philippe Thurin photo 2021. V.T.

We think about the changing and contested world we live in and the challenges facing the next generation. Our greatest potential contribution is to point them to new places, to proven protocols that can withstand adversity. Hence this small, but we understand, substantial review: HERE IS OLIVE PATAGONIA.

We cannot end without mentioning two strokes of the brush that illuminate this panorama and give this work its name: EFFORTS FOR THE DEVELOPMENT OF THE OLIVE TREE IN PATAGONIA. These actions began a long time ago.

Patagonia: a land of hope, even for olive growers. Picture of the first experimental farm. 2017. Cv. Frantoio del Vivero Las Lagunitas, San Juan, agronomist and agroecology specialist Esteban Santipolio.

In fact, Spain's efforts to populate Patagonia began before the first foundation of Buenos Aires. In the year 1535. The chronicles say that: The first foundation in Patagonia was Puerto de los Leones (also known as Nueva León), founded by Simón de Alcazaba y Sotomayor on 9 March 1535 in Bahía Gil, near Camarones, Chubut. It was the first attempt to create a permanent settlement in Patagonia**" (El Cronista, 2024**).

However, these efforts did not last, never due to the hostile attitude of the natives and inhabitants of the area, on the contrary. However, it took centuries for another colony to be founded, and the friendliness of the natives was portrayed there:

Francisco de Viedma y Narvaez founded Carmen de Patagones on 22 April 1779 (**Observatorio Malvinas, Legislatura de Río Negro, 2022).**

So, one year after, the 17th april of 1780, a Spanish contingent under the command of Antonio de Biedma founded the new colony and fort of Floridablanca. It was founded for strategic reasons, 'so that the English would not think of establishing themselves in the Bay of San Julián'. In order to avoid the pirates, an inland site with water and shelter was sought, some ten kilometres from the coast. It was found thanks to the Tehuelche

guides.Twenty-four families arrived in January 1780. At the time of its foundation, Floridablanca had around 150 inhabitants...

The colony was supposed to be self-sufficient in food by growing cereals and raising livestock, but in the first year both local production and supply were insufficient, forcing the settlers to begin bartering with the Tehuelches, with whom they maintained good relations. In the third year, the plantations began to bear fruit, producing wheat, barley, lettuce, turnips and other vegetables. They also fished, collected shellfish and hunted guanacos and rheas.e founded, and the friendliness of the natives was portrayed there:

In August 1783, Charles III ordered the abandonment of the Patagonian establishments as they were too costly in the face of the war with England and the insurrection of Tupac Amaru'. (Journal of the End of the World, 2025)

Carmen de Patagones persisted and the first systematic planting of olive trees was carried out there by Agronomist Pedro Bovet in 1913-1921, as we reported at the beginning.

There are other developments that should be noted, which are the result of the national law 12.916/46, which created the Corporación Nacional Olivícola (National Olive Growing Corporation). Seventy experimental farms were carried out, some of them in Patagonia, such as the one in Cinco Saltos, in the Province of Río Negro, and one hundred and sixty places of DEMONSTRATIVE CULTIVATION some of them in Patagonia. Like the photos illustrating the note. In Unit 6 of the Servicio Penitenciario Federal in Rawson, Chubut.

In this place, in the Province of Chubut, a number of olive trees had been planted in 1947, of which, despite being abandoned since 1955, 65 olive trees remained. Systematic work was carried out for 3 years to rejuvenate the plants and to train prisoners and prison staff. Olive oil was made. It was analysed at the National Institute of Industrial Technology (INTI) in Mendoza. (**Juan Vilar, 2023**).

The point is that this fact renders illusory any discussion about whether olive growing is possible in Patagonia, as well as about the possible varieties. Because these plants do exist, they are productive and their oil is of high quality. **(El Chubut, 2023).**

REFERENCES:

-Arias, 2015: Respuestas morfo-fisiológicas a bajas temperaturas y disponibilidad de agua en variedades de Olea europaea L.Tesis Nadia Soledad Arias, UNLPSJB, https://bicyt.conicet.gov.ar/fichas/p/nadia-soledad-arias

-Revista Almazaras, 2022, https://www.interempresas.net/Produccion-Aceite/Articulos/381653-Que-ofrece-la-Patagonia-olivicola.html

Pardo, J.E., Álvarez-Ortí, M., Rey, A.M., Cuesta, M.A., Silvestre, A., 2011. *Purity, quality and stability of argentinean commercial virgin olive oils*. European Journal of Lipid Science and Technology, 113: 597-608. *Factor de impacto*: 1,733. *Categoría*: Food Science & Technology. *Posición*: 43 de 128 (Q2).

Argentinian legislation, 1985: Law 23272
https://www.argentina.gob.ar/normativa/nacional/ley-23272-24013
And Law 25955
https://servicios.infoleg.gob.ar/infolegInternet/verNorma.do?id=101420

Victor Tomaselli, 2022 Características del Aceite de Oliva extra virgen que se produce en la Patagonia Argentina. **A&G 129** • Tomo XXXII • Vol. 4 •

Bovet, Pedro A.1935 El olivo: su cultivo y utilización en la chacra argentina. La Plata. Dirección de Agricultura, Ganadería e Industrias,1935.
https://unlz.opac.com.ar/pergamo/documento.php?ui=1&recno=3128&id=UNLZ.1.3128

Crónica, 2021: https://www.diariocronica.com.ar/noticias/2021/11/24/58206-olivos-de-patagonia-una-iniciativa-para-la-diversificacion-regional

Biblioteca del CONSEJO FEDERAL DE INVERSIONES, 2022.
http://biblioteca.cfi.org.ar/wp-content/uploads/sites/2/2022/04/olivos-chubut.-biblioteca-cfi.pdf contiene el **"PROGRAMA DE DESARROLLO OLIVÍCOLA PARA LOS DEPARTAMENTOS DE TELSEN, BIEDMA Y RAWSON DE LA PROVINCIA DEL CHUBUT" informe final**. **Contraparte técnica provincial** Director General de Inversiones Subsecretaría de Industria, Ministerio de Agricultura, Ganadería, Industria y Comercio de Chubut: Lic. Juan Pablo Luna **Contraparte CFI-Área SPR-Sectorialista en cultivos agro-industriales-Olivicultura:** Ing. Agr. María Eugenia Gallego. Equipo de trabajo: Director de Proyecto: Maestro de Almazara ESAO Victor Tomaselli.

GRASAS Y ACEITES Magazine Ceci Liliana, Martha Melgarejo and Adriana Carelli, 2009. GRASAS Y ACEITES Magazine (A&G) Number 75 or Volume XIX, Volume 2. Madrid (2009) "Quality and characterisation of virgin olive oils produced on the Atlantic coast of Argentina". Authors: Liliana N. Ceci, Martha Melgarejo and Adriana Carelli.

KIRITSAKIS, Apóstolos et al. 2017. Olives and Olive Oil as Functional Foods: Bioactivity, Chemistry and Processing Editor(s): Fereidoon Shahidi, Apostolos Kiritsakis. First published: 23 June 2017 Print ISBN:9781119135319 |Online ISBN:9781119135340 |DOI:10.1002/9781119135340 Copyright © 2017 John Wiley & Sons, Ltd. All rights reserved. Chapter 4th. The influence of growing region and cultivar on olives and olive oil characteristics and on their functional constituents (Pages: 45-80).

Rivista di Agraria, 2013. **http://www.rivistadiagraria.org/articoli/anno-2013/le-piante-di-olivo-e-lolio-dalla-fine-del-mondo/**

Tomaselli V. et Clodoveo M.L. 2017. OLIVICOLTURA ALLA FINE DIL MONDO, V.Tomaselli and Dott.ssa Maria Lisa Clodoveo RIVISTA OLIVO E OLIO, N° 4 August 2018 EDAGRICOLE. Bologna, Italia. Pag 52-58

Clodoveo profile: https://www.researchgate.net/profile/Maria-Clodoveo

Fereidoon Shahidi et Apostolos Kiritsakis, 2017. Olives and Olive Oil as Functional Foods: Bioactivity, Chemistry and Processing Editor(s):Fereidoon Shahidi, Apostolos Kiritsakis. First published: 23 June 2017 Print ISBN:9781119135319. Chapter 32. DNA fingerprinting as a novel tool for olive and olive oil authentication, traceability, and detection of functional compounds. Aliki Xanthopoulou, Ioannis Ganopoulos, Irene Bosmali, Athanasios Tsaftaris, and Panagiotis Madesis.

El Cronista, 2024.

https://www.cronista.com/clase/break/la-historia-del-primer-pueblo-de-la-patagonia-argentina-que-se-fundo-antes-que-buenos-aires-hace-casi-500-anos-por-que-dejo-de-existir/

Diario del Fin del Mundo, 2025.
https://www.eldiariodelfindelmundo.com/noticias/2024/04/19/105821-los-espanoles-fundan-la-colonia-y-fuerte-de-floridablanca

Observatorio Malvinas, Legislatura de Río Negro, 2022.

https://observatoriomalvinas.legisrn.gov.ar/22-de-abril-1779-fundacion-del-fuerte-y-poblacion-nuestra-senora-del-carmen-tambien-conocido-como-establecimiento-rio-negro/

Juan Vilar, 2023. https://www.juanvilar.com/olivos-para-la-libertad/

(El Chubut, 2023)

https://www.elchubut.com.ar/industria-y-produccion/2023-4-10-17-16-0-la-presidenta-del-senasa-recorrio-las-tierras-olivicolas-de-rawson