

Medio: Food Unfolded.com

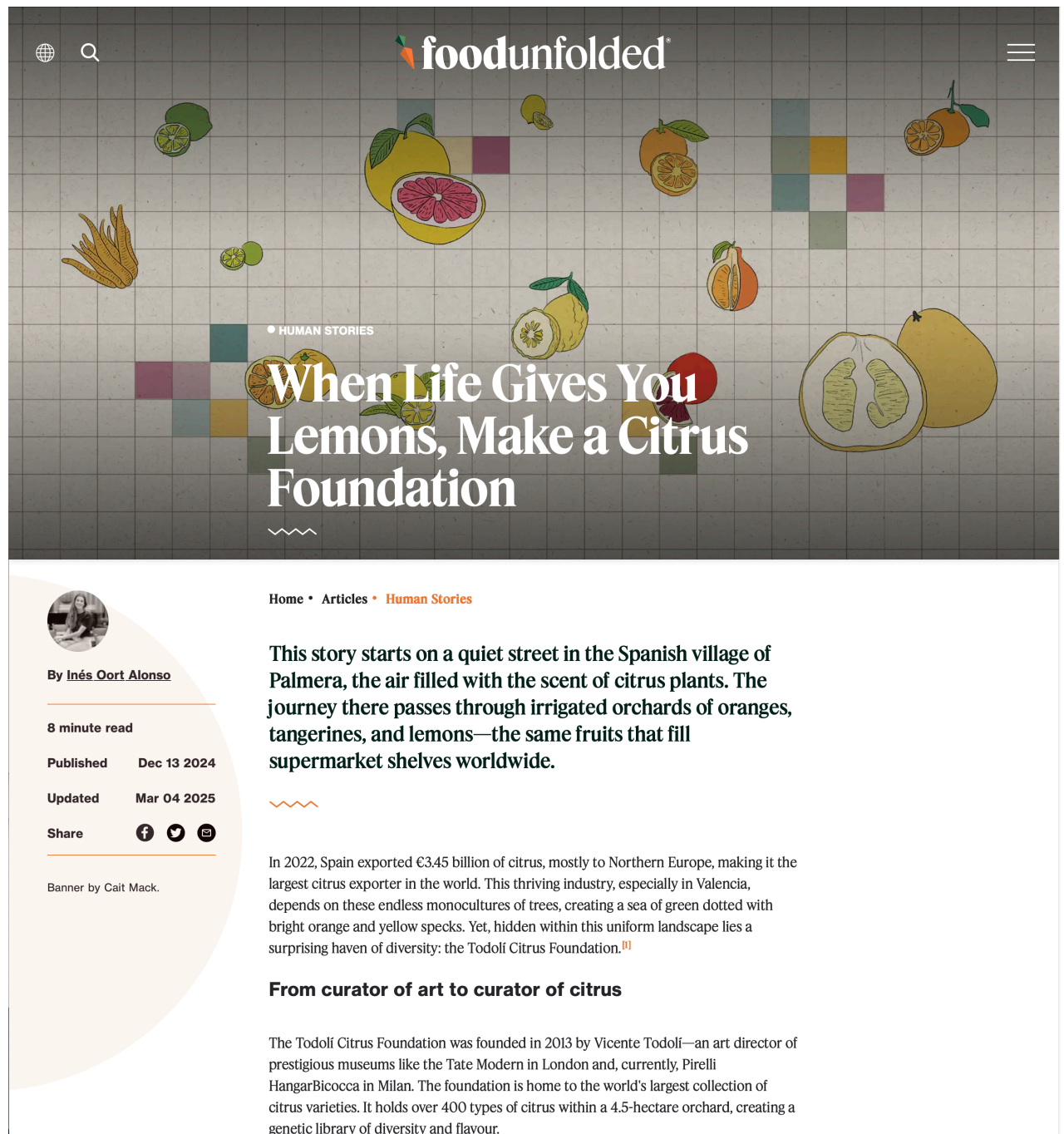
Título original: *When Life Gives You Lemons, Make a Citrus Foundation*

Autora: Inés Oort Alonso

Producción y Fotografía: Arturo Vicario

Fecha: 13 de diciembre 2024

Link: <https://www.foodunfolded.com/article/when-life-gives-you-lemons-make-a-citrus-foundation-a-visit-to-todoli-citrus-foundation>



The image shows a screenshot of a web article from Food Unfolded. The header features the Food Unfolded logo and a decorative background with various citrus fruits (lemons, oranges, grapefruit) and a grid pattern. The main title is "When Life Gives You Lemons, Make a Citrus Foundation". Below the title, there is a byline for Inés Oort Alonso, a "8 minute read" indicator, and publication/updated dates. The article text begins with a paragraph about the citrus industry in Spain and the Todoli Citrus Foundation. A sub-header "From curator of art to curator of citrus" is followed by a paragraph about the foundation's history and mission.

foodunfolded®

• HUMAN STORIES

When Life Gives You Lemons, Make a Citrus Foundation

Home • Articles • Human Stories

By **Inés Oort Alonso**

8 minute read

Published Dec 13 2024

Updated Mar 04 2025

Share

Banner by Cait Mack.

This story starts on a quiet street in the Spanish village of Palmera, the air filled with the scent of citrus plants. The journey there passes through irrigated orchards of oranges, tangerines, and lemons—the same fruits that fill supermarket shelves worldwide.

In 2022, Spain exported €3.45 billion of citrus, mostly to Northern Europe, making it the largest citrus exporter in the world. This thriving industry, especially in Valencia, depends on these endless monocultures of trees, creating a sea of green dotted with bright orange and yellow specks. Yet, hidden within this uniform landscape lies a surprising haven of diversity: the Todoli Citrus Foundation.^[1]

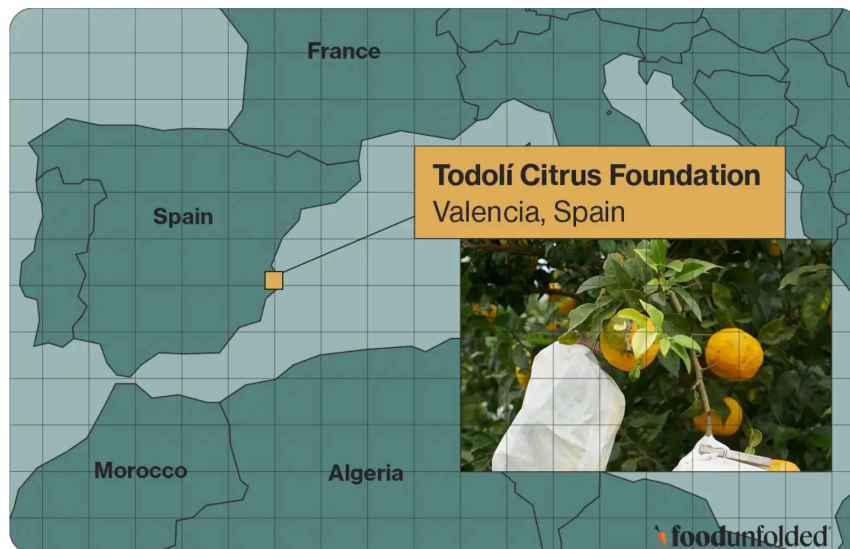
From curator of art to curator of citrus

The Todoli Citrus Foundation was founded in 2013 by Vicente Todoli—an art director of prestigious museums like the Tate Modern in London and, currently, Pirelli HangarBicocca in Milan. The foundation is home to the world's largest collection of citrus varieties. It holds over 400 types of citrus within a 4.5-hectare orchard, creating a genetic library of diversity and flavour.



Todoli, the founder, at the Citrus Foundation.

Todolí, who has curated exhibitions featuring the likes of Kandinsky and Dalí, founded the Todolí Citrus Foundation after a 2010 trip with Chef Ferran Adrià to see plant nurseries in Perpignan, France, known for their extensive citrus collections. A native of Valencia, Spain, where citrus orchards are a common feature of the landscape, Todolí was surprised to see such a diverse collection thriving in greenhouses in a climate unsuited for citrus, and wanted to learn more about their cultivation techniques. Despite the prevalence of citrus in his home region, no one there had yet assembled a comparable collection.



A different type of gene bank

Biodiversity is a cornerstone of sustainable food production - building resilience against climate change, pests, and diseases that impact our food systems. Yet, despite its importance, the trend over the last fifty years has been towards more uniformity in the global food supply. Often, this uniformity comes at the cost of biodiversity.

Shockingly, out of 6,000 plant species grown for food, only nine dominate crop production today. This narrowing of diversity extends even within species. Despite the multitude of citrus varieties available, it's common to find only a handful of varieties in our supermarkets. This shift towards monoculture is a global phenomenon that threatens the long-term sustainability of our food systems.^[2] Todolí sees his orchard as an opportunity to counter this and preserve diversity for generations to come.

[Read more about monocultures and pesticide resistance](#)

"We live in a world that tends to standardise and select fewer and fewer varieties because commercially it is more viable to focus on the same product. Here, we do the opposite", Todolí told us proudly. "Our orchard acts as a genetic diversity bank. We've gathered trees from across Europe and the world and brought back ancient varieties, some over 150 years old, that we found neglected in old orchards".

"Our orchard acts as a genetic diversity bank. We've gathered trees from across Europe and the world and brought back ancient varieties, some over 150 years old, that we found neglected in old orchards."



FoodUnfolded's Inés Oort Alonso is shown around the foundations archive of historical citrus illustrations. The foundation has sourced trees from all over Europe, but has also revived ancient varieties, some more than 150 years old.

The need for biodiversity in Citrus farming

Around the 1950s, most commercial citrus groves relied on bitter orange rootstock because it was a good match for many varieties. However, the spread of the Citrus tristeza virus (CTV) during this time wiped out trees using this rootstock, leading to a near-collapse of citrus farming worldwide, including in Spain.

Because this monoculture was based on a single rootstock, it almost destroyed the industry. Since then, we have developed a variety of rootstocks and avoid using the bitter orange in areas where CTV is a threat. This issue has occurred not only in citrus but also in many other crops.^[3]

Reflecting on the lessons from this crisis, Oscar Olivares-Fuster, the foundation's technical director and geneticist notes, "Humans learn very little and have very short memories. History has repeatedly shown us that our tendency towards monoculture and vast expanses of a single species only leads to long-term problems. The vulnerability to pests or any type of disaster is enormous. The issue is that the market dictates what we will and will not eat." And after a slight pause, he adds "At the Foundation, what we essentially do is accumulate biodiversity."

Humans learn very little and have very short memories. History has repeatedly shown us that our tendency towards monoculture and vast expanses of a single species only leads to long-term problems

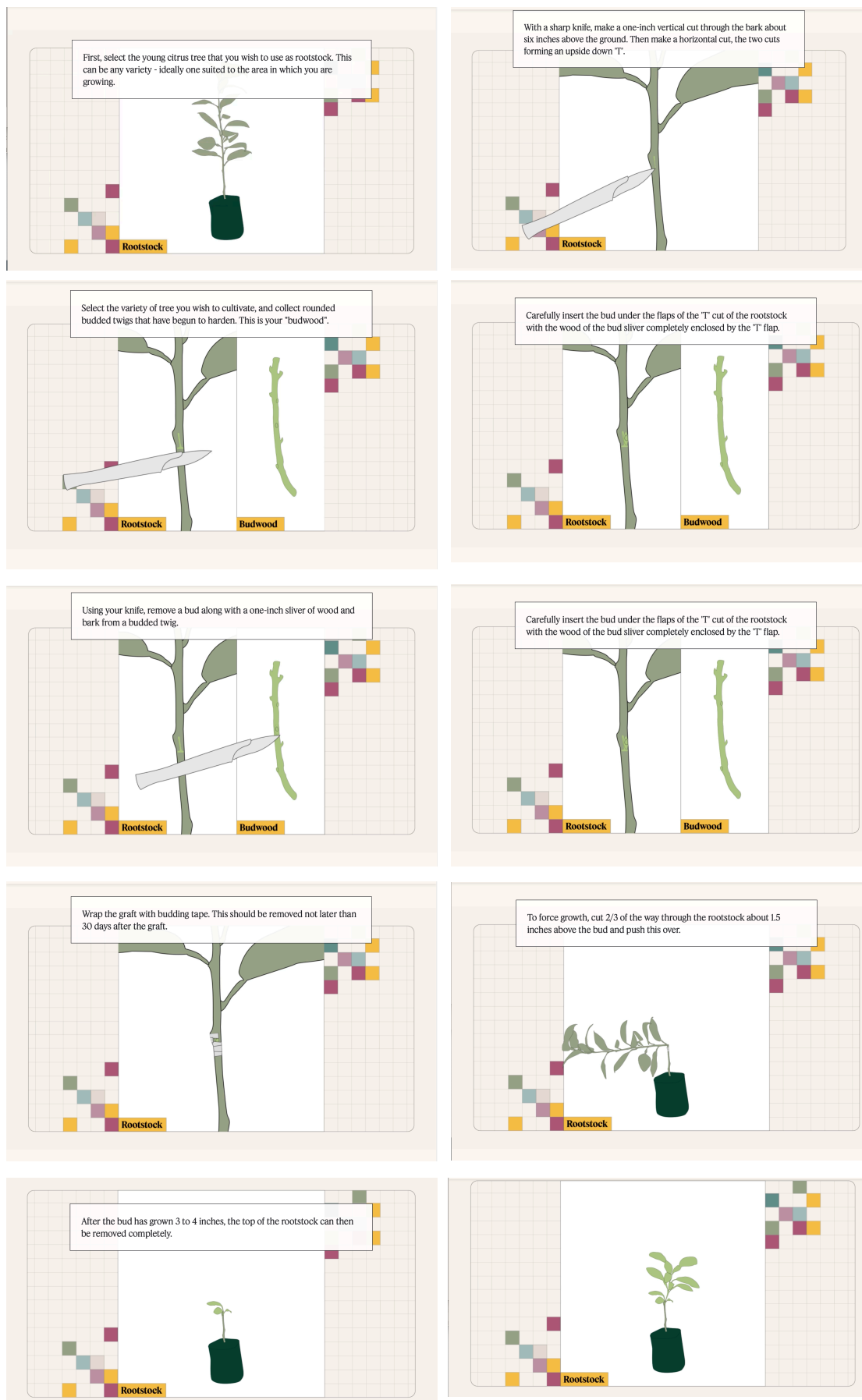


The Complex Art of Growing Citrus

As we strolled through row after row of citrus fruits in every imaginable shape and size, Oscar joined Todolf to explain why preserving citrus diversity is far more complex than with most other plants. Many plants grow 'true to type' from seeds, meaning they will closely resemble the parent plant.

But citrus trees are propagated through specialised grafting techniques—where a branch, water shoot or bud from one tree is attached to another. This is necessary because planting seeds from most citrus varieties doesn't produce trees identical to the parent. Only a few varieties, called polyembryonic, grow seeds that can replicate the parent tree.

Oscar added that "citrus fruits are genetically very complex, highly promiscuous, and hybridise with each other very easily, which has resulted in their remarkable biodiversity. Humans have always found them attractive and fascinating, as much of this natural biodiversity is visually noticeable and has been intentionally selected over time. Through grafting, this diversity has been preserved."

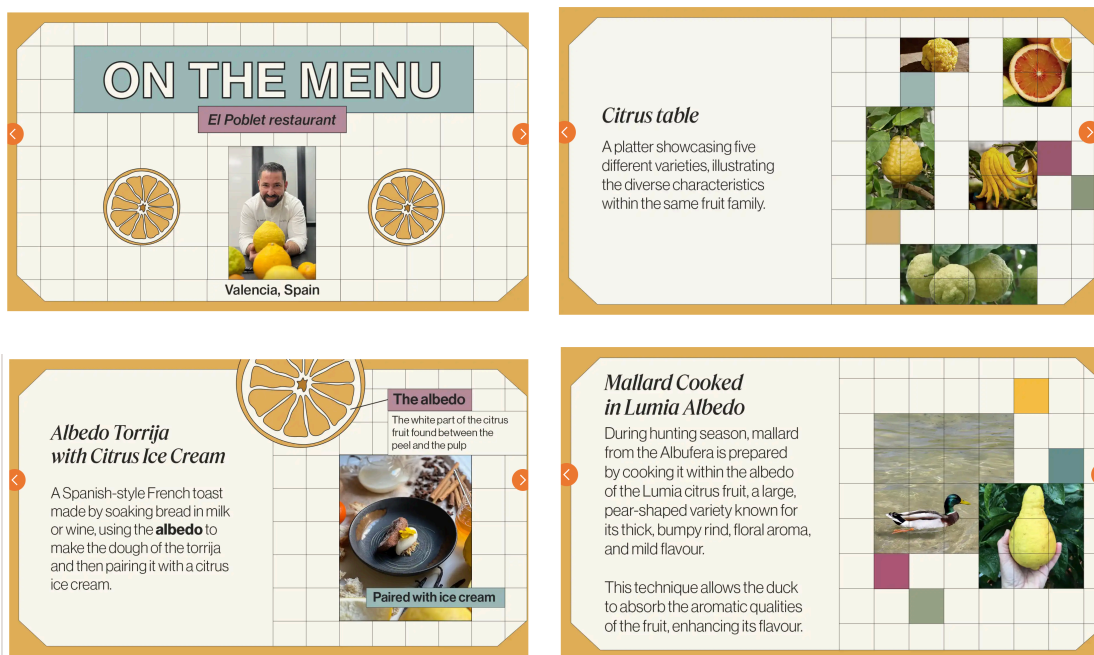


Over 1,000 citrus varieties exist today, yet they all stem from just three ancestral species: the mandarin orange, pomelo, and citron. Natural cross-breeding between these "parent" fruits has given rise to the diverse citrus we know and love.

How art, gastronomy and agriculture meet

If it wasn't evident before our visit to the Foundation, we left with a clear idea that preserving genetic diversity and traditional agricultural knowledge is critical. While seed and gene banks, such as the Svalbard Global Seed Vault in Norway, play a vital role in preserving species diversity, there is immense value in appreciating and enhancing this diversity in a place that people can visit and enjoy. High-end cuisine can also drive research into rare and diverse plant species, using its influence and resources to explore and promote these unique ingredients.

Lluís Valls is a chef of El Poblet, a high-end restaurant just a few kilometres away from the Foundation, focusing on culinary heritage and local ingredients. Currently, citrus fruits play a significant role in many of the dishes offered at El Poblet - which he frequently sources from The Todolí Citrus Foundation. In at least five dishes, citrus is either the star ingredient or an essential supporting element.



"Many of our citrus varieties aren't commercially viable," Todolí admits. "But there's a niche market for the unique and unusual."

There is still a pressing need to expand these efforts, ensuring that everyone can benefit from the nutritional and environmental advantages of diverse crops. "It's essential to scale up biodiversity," But Todolí feels hopeful that the varieties he collected will go further than upmarket restaurants and grocery stores. "Often, what happens with high cuisine—such as with finger lime or citrus caviar—is that it begins in gourmet cooking and, over time, may gradually reach more mainstream markets."

"Often, what happens with high cuisine—such as with finger lime or citrus caviar—is that it begins in gourmet cooking and, over time, may gradually reach more mainstream markets."



Ponderosa lemon variety at the Citrus Foundation.

A Journey Through Citrus and Time

For the Arabs, the people that first brought citrus to Spain around the 10th century, a garden was the place closest to paradise on Earth because it appealed to all the senses—not just sight, which is obvious, but also taste, smell, and touch, as the fruits are rough. Additionally, it appealed to hearing, with the sounds of birds and flowing water. In the Islamic and Persian gardens, known as 'paradis' in Persian, this multisensory experience was fundamental. These gardens served not only to preserve and protect the land but also to provoke a rich sensory and cultural experience.

The Citrus Foundation embodies this spirit, blending a garden, an orchard, and a vision of paradise. But it's more than just a feast for the senses; it's a tangible response to the challenges of monoculture and biodiversity loss.

The foundation isn't just preserving plants; it's maintaining a living genetic library that represents centuries of natural and human-guided cultivation. By protecting rare citrus varieties from different global regions, they challenge industrial agricultural practices and showcase the potential of biodiverse farming.

If preserving this diversity is how we safeguard our precious food systems, the future of food indeed looks bright—orange, and in 400 unique shades.