



Plant-based alternatives in South America: exploring nutritional aspects and market availability

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INTERNATIONAL CONFERENCE ON
**ALTERNATIVE
PROTEINS**
FOR FOOD AND FEED

A Journey to Latin. America

- Overview.
- Latin America Market.
- Brazil's Plant-Based Food Trends.
- Consumer perception.
- Research efforts reaching the market.
- Research supporting public policies.
- Ecosystem for innovation and start ups.
- Challenges and opportunities.

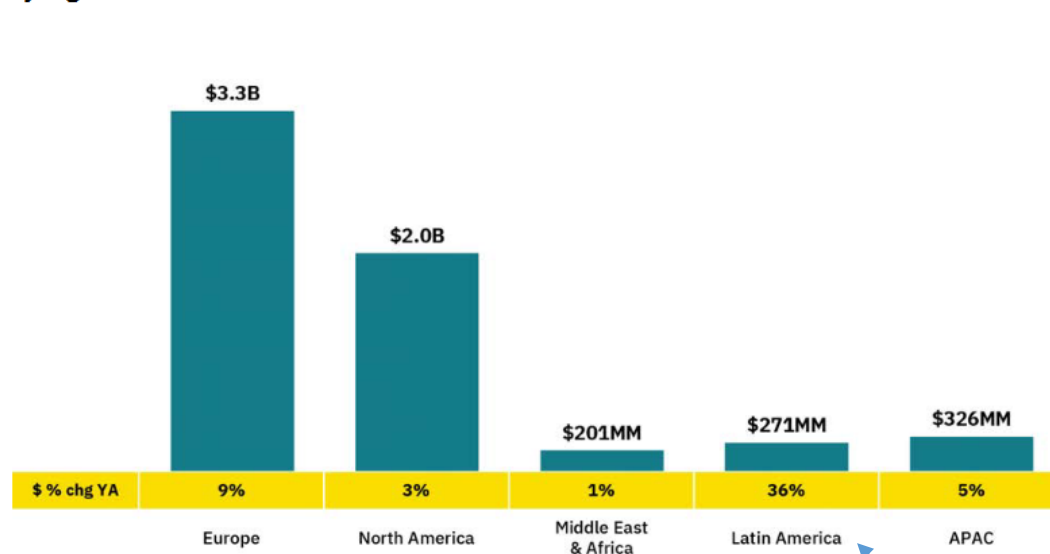


Area	20,111,457 km ² (7,765,077 sq mi) ^[1]
Population	656,098,097 (2021 est.) ^{[2][3][a]}
Population density	31/km ² (80/sq mi)

Global overview

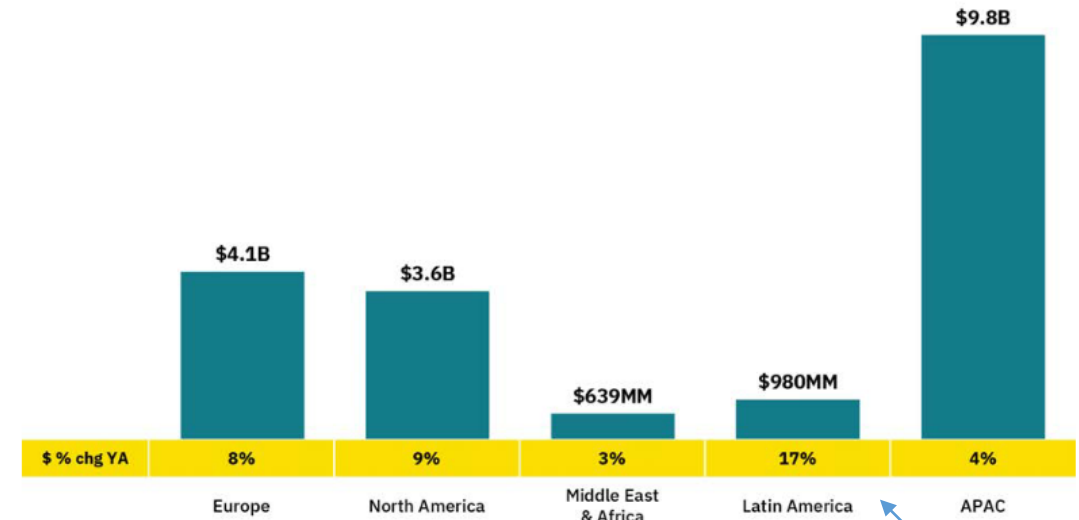
<https://gfi.org.br/wp-content/uploads/2022/12/Executive-Summary-Consumer-Research-GFI-Brasil.pdf>

Figure 5: Global plant-based meat and seafood retail dollar sales and dollar sales growth by region



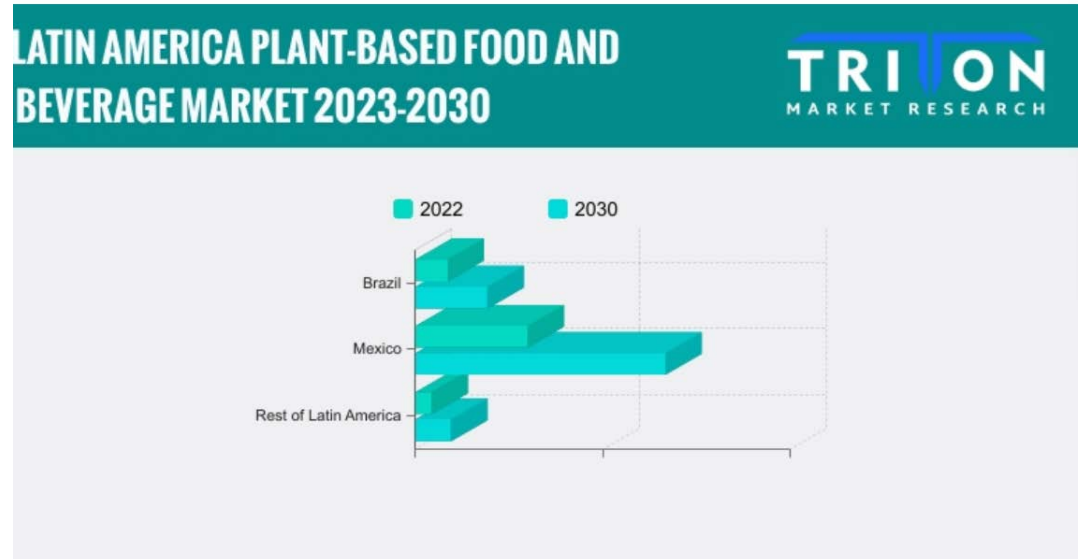
Source: Euromonitor International Limited, Fresh Food 2023, retail value RSP incl sales tax, US\$, fixed 2022 exchange rate, constant terms.
© 2023 The Good Food Institute, Inc.

Figure 6: Global plant-based milk retail dollar sales and dollar sales growth by region



Source: Euromonitor International Limited, Fresh Food 2023, retail value RSP incl sales tax, US\$, fixed 2022 exchange rate, constant terms.
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According to Triton's projections, the plant-based food and beverage market in Latin America is expected to grow at a CAGR of 10.54% during the forecasted period 2023 to 2030.



CONSUMER GOODS & SERVICES | FOOD & BEVERAGES

LATIN AMERICA PLANT-FOOD AND BEVERAGE MARKET 2023-2030

Market by Type, Ingredient, Storage, Sales Channel, and 2023-2030

Brazil's plant-based food and beverage market is expected to grow the fastest over the forecast period.

- <https://www.tritonmarketresearch.com/reports/latin-america-plant-based-food-and-beverage-market#report-overview>

In 2023 alone, Brazilian retail sales of plant based meat and seafood **plant-b**reached R\$1.1 billion, a **38% increase** compared to the previous year. The total volume (in tons) of products sold also grew significantly, **with a 22% rise** compared to the previous period. Plant based milk, which is the most successful category in the global market with a 66.8% plant-based market share, showed **a growth of 9.5%**, with sales totaling **R\$673 million** in 2023.

Market & Trends

Brazil's Plant-Based Market on Trajectory to Exceed 2026 Growth Expectations

November 27, 2024



© Fazenda Futuro

FOOD AND WATER

Millions of jobs could be created in Latin America and the Caribbean – if the region switches to a plant-based diet

Sep 8, 2020



Transitioning to a plant-based diet is a key strategy to decarbonize Latin America and the Caribbean. This shift could create **19 million new jobs**, despite an estimated loss of 4.3 million in traditional animal-based agriculture by 2030.

<https://www.weforum.org/stories/2020/09/plants-latin-america-caribbean-decarbonization-jobs>

<https://vegconomist.com/market-and-trends/brazils-plant-based-market-exceed-2026-growth-expectations/>

The New Butchers (Brazil)

Founders: **Nessim Abadi, Mariana Nakaie, Bruno Fonseca**

Based in Brazil, this new food tech is recreating much-loved meats such as beef burgers, chicken tenders and even salmon fillets using only plant ingredients, such as pea protein, coconut oil and beetroot. It currently has a presence across 16 states in Brazil, sold in supermarkets and specialty stores, and is working on developing new products such as plant-based pork.



Source: The New Butchers

NOTMAYO CREMOSA E DELICIOSA COMO MAIONESE

Apresentando a NotMayo. Cremosa e deliciosa, espalha como maionese, mas é totalmente vegetal, feita 100% de plantas. É por isso que dizemos que é maionese, só que NOT.

Me conte mais Encontre perto de mim



NotCo (Chile)

Founders: **Matias Muchnick, Nicolas Szekasy & Karim Pichara**

Since launching its plant-based mayonnaise product, Santiago-headquartered NotCo has developed vegan-friendly milk, ice cream and burger patties, and has a strong presence in its domestic market in Chile and across Latin America. The Jeff Bezos-backed company leverages artificial intelligence algorithms to look for patterns in foods that consumers crave to replicate these products using 100% plant ingredients. It recently closed a [US\\$85 million funding round](#), [taking its valuation to US\\$250 million](#).

Fazenda Futuro aka Future Farm (Brazil)

Founders: Marcos Leta, Alfredo Strechinsky

Founded in 2019, Fazenda Futuro is a Brazilian vegan startup with a line of meat alternatives including burgers, meatballs and sausages. It has already established a foothold in international markets since its launch, including in Chile, Mexico, Uruguay and the Netherlands, and with its latest [US\\$21.5 million investment](#), the company hopes to take its products to more countries in Europe and in Asia next year. The founders previously ran a juice which they sold to regional beverage giant Ambev back in 2016.



Tomorrow Foods (Argentina)

Founders: Agustin Belloso, Guillermo Daniel Lentini & Gonzalo M. Segovia

Buenos Aires-based startup Tomorrow Foods has developed a range of plant-based protein isolates derived from different non-GMO plant crops sourced locally in Argentina. Its products – LatinRice, LatinPea, LatinChickpea, and LatinMung – are designed to be easily incorporated into major manufacturers' recipes. Since its inception just a few months ago, the company has tested its products with major food brands across Chile, Argentina and Brazil.



Mexico

Los más vendidos



Pasta Orgánica Fusilli de Arroz y Quinoa Sin Gluten América Orgánica 227 g
220g



Pasta Orgánica Penne Triguano con Vegetales Sin Gluten América Orgánica 227 g
220g



Pasta Orgánica Spaghetti de Arroz y Quinoa Sin Gluten América Orgánica 227 g
220g



Pasta Orgánica Spaghetti Triguano con Vegetales Sin Gluten América Orgánica 227 g
220g



Beyond Burger Vegana Beyond Meat 226 g
230g

PLANT-BASED GROUND

PLANT-BASED GROUND SOURCED FROM PEA PROTEIN

MAIN ATTRIBUTES	NUTRITIONAL BENEFITS	
PROTEIN	HEALTHY FIBRE	GLUTEN FREE
NO PALE SOY LEPTIN	NO CHOLESTEROL	NO ANTIBIOTICS

INGREDIENTS
Peas, Textured Pea Protein, Pea Fibre, Pea Flour, Coconut Oil, Potassium Chloride, Yeast Extract, Onion Powder, Natural Flavouring, Potassium Citrate, Contains 2% or less of: Black Pepper, Onion Powder, Garlic Powder, Brown Rice, Salt, Lactate.

Platillos Mexicanos



Queso Tipo Oaxaca Q Foods 1 kg
1000g



Tortillas de Avena La Nonna 500 g
500g



Queso Manchego Rallado Leaf 350 g
350g



Crema Vegana Leaf 350 g
350g



Queso Ranchero Leaf 350 g
350g

<https://www.betterbalancefoods.com/>

<https://www.veganlabel.mx>

<https://tecscience.tec.mx/es/divulgacion-ciencia/leguminosas-proteinas-del-futuro>

Perspective of the Latin American Vegan Food Market - 2024

- **Market Growth :** Chile, vegan food represents almost 12% of the total food market, market share is expanding in Argentina and Brazil.
 - **Driving Factors:** Consumer awareness of animal cruelty, environmental concerns, health reasons, and lactose intolerance, growing interest in vegan dairy alternatives, such as vegan butter and plant-based milk.
 - **Challenges:** price competitiveness with traditional animal-based products, innovation and product diversification.
 - **Opportunities:** Supermarkets stocking vegan products, and demand for vegan food is rising as more consumers opt for healthier, sustainable diets.
- Key Players:** Major global players in the market include Amy's Kitchen, Danone, Daiya Foods, and Ripple Foods, among others.
- **Market Outlook:** The Latin American vegan food market is expected to continue growing, supported by consumer trends, product innovation, and increasing availability of plant-based options in supermarkets and restaurants.

perspectiva del Mercado Latinoamericano de Comida Vegana

El mercado latinoamericano de comida vegana alcanzó un valor de alrededor de USD 1,36 mil millones en 2023. Se prevé que el mercado crezca a una tasa de crecimiento anual compuesta del 6,5% entre 2024 y 2032, para alcanzar un valor de 2,40 mil millones de USD en 2032.

La comida vegana consiste en productos alimenticios que se derivan principalmente de fuentes vegetales. Por lo general, estos productos se producen con ingredientes como almendras, avena, soja, trigo, tofu, entre otros. Una dieta vegana es una rica fuente de vitaminas B1, C y E, nutrientes, ácido fólico y magnesio. Además, es bajo en colesterol y grasas saturadas y excluye el consumo de productos lácteos, huevos, carne y otros productos de origen animal. Estos productos son los alimentos que consume un vegano.



<https://www.informesdeexpertos.com/informes/mercado-latinoamericano-de-comida-vegana>

Brazil's Plant-Based Food Trends

Dairy Milk Substitutes Products



Soybean milk
Source: www.cocacolabrasil.com.br



Almond milk
Source: www.bluediamondalmonds.com.br

Meat Substitutes Products



Plant-Based Hamburger
Source: www.thenewbutchers.com.br



Soybean Based Hamburger
Source: www.ecobras.com.br

Plant-Based Frozen Foods

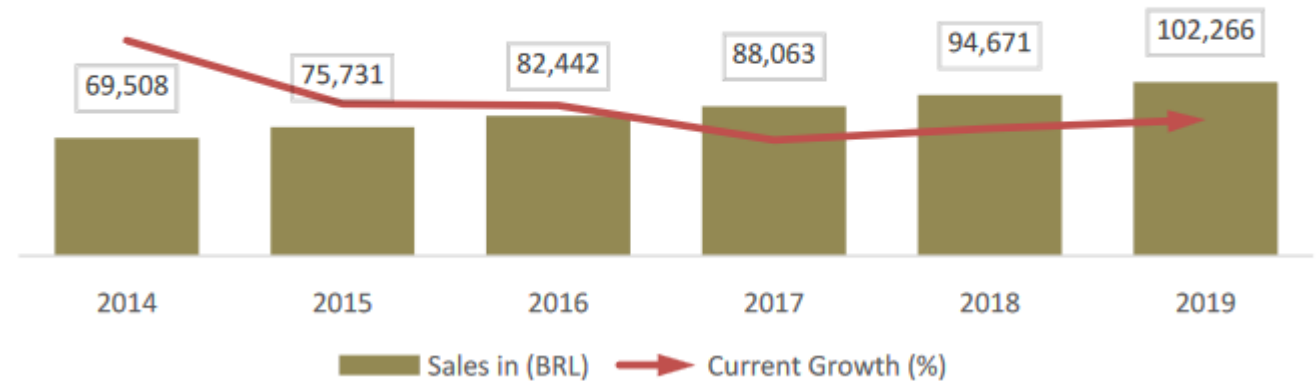


Shepherd's pie
Source: www.incriveleseara.com.br



Nuggets

Sales of Health and Wellness Products in Brazil (BRL Million)



New York Times: Brazil Is Famous for Its Meat. But Vegetarianism Is Soaring.

- The number of vegetarians in Brazil doubled over a six-year period, which has given rise to a booming plant-based industry that is seeking to turn meatpacking plants obsolete.

The New York Times

AMERICAS Brazil Is Famous for Its Meat. But Vegetarianism Is Soaring



Luiza de Marillac Torreses, wearing a black mask, talks to clients as they have lunch. Desserts for her bar has skyrocketed. Maurício Lima for The New York Times



Participants gather for a mindful eating class in Rio de Janeiro. The number of vegetarians in Brazil nearly doubled between 2012 and 2018. Maurício Lima for The New York Times

The New York Times

AMERICAS Brazil Is Famous for Its Meat. But Vegetarianism Is Soaring.



Workers so busy in the production line of a plant-based fish fillet, at New Butchers headquarters, in São Paulo. Maurício Lima for The New York Times

<https://www.nytimes.com/2020/12/26/world/americas/brazil-vegetarian.html>

Consumer trends

The majority of participants (88%) felt that adding protein to ice cream was a good idea....



Food Quality and Preference 108 (2023) 104881

Contents lists available at [ScienceDirect](#)

Food Quality and Preference

journal homepage: www.elsevier.com/locate/foodqual

Short Communication

Attitudes and conceptions of Brazilian consumers toward ice cream and protein addition

Nátali Silva Teixeira^{a,*}, Marcela de Alcântara^b, Inayara Beatriz Araujo Martins^c, Davy William Hidalgo Chávez^c, Amauri Rosenthal^d, Ana Carolina Sampaio Doria Chaves^d, Rosires Deliza^a

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McKinsey
& Company

Agriculture Practice

Novel proteins: Consumer appetite for sustainably made ingredients

Novel ingredients could shape the future of food—but are consumers willing to try (and pay for) them? Our survey on US consumer sentiment offers insights for formulators, brands, and retailers.

by Kimberly Stover, Kate Toews, and Roberto Uchoa

Novel ingredients offer the potential to decarbonize the food system, enable regional and global food security, and respond to increased demand from flexitarian consumers.

Novel ingredients, such as animal-free dairy, cultured proteins, and mycelium proteins, may play a significant role in the future of food thanks to their potential ability to secure and decarbonize food systems.

Research efforts reaching the Market

- An 85% lentil protein concentrate was obtained by wet processing.
- Physical and techno-functional properties of lentil protein were evaluated.
- The protein was well accepted when applied into a fish-like plant-based croquette.
- Lentil protein can be an alternative source for the plant-based market.

Research International
Volume 189, August 2024, 114569

rocessing parameters, techno-functional properties and potential food application of lentil protein concentrate as an ingredient for the plant-based market

Fernandes Caldeira ^a, Lucas de Paiva Gouvêa ^a,
Tatiana de Lima Azevedo ^b, Carmine Conte ^b,
Rodrigo Castro Freitas de Sá ^b, Melicia C



Foto: Tatiana de Lima Azevedo

Food Hydrocolloids
Volume 137, April 2023, 108351

Physical and techno-functional properties of lentil protein concentrate incorporated to commercial legume products for the plant-based market

Rodrigo Caldeira ^a, Tatiana de Lima Azevedo ^b, Ilana Felberg ^b, Janice Ribeiro ^b

Comunicado Técnico

Rio de Janeiro, RJ / Fevereiro, 2024

Processo de produção de concentrado proteico de grão-de-bico (*Cicer arietinum* L.)

Janice Ribeiro Lima⁽¹⁾, Allan Eduardo Wilhelm⁽²⁾, Caroline Grassi Mellinger⁽¹⁾, Ilana Felberg⁽¹⁾, Lucas de Paiva Gouvêa⁽²⁾, Melicia Cintia Galdeano⁽¹⁾, Rodrigo Fernandes Caldeira⁽²⁾, Rosemar Antoniasil⁽¹⁾, Tatiana de Lima Azevedo⁽²⁾

⁽¹⁾ Pesquisadoras, Embrapa Agroindústria de Alimentos, Rio de Janeiro, RJ. ⁽²⁾ Analistas, Embrapa Agroindústria de Alimentos, Rio de Janeiro, RJ. ⁽³⁾ Estudantes de doutorado, Universidade Federal Rural do Rio de Janeiro, Rio de Janeiro, RJ.



Cashew fiber: from research to market



VEGETAL BURGERS OF CASHEW FIBER AND TEXTURIZED SOY PROTEIN¹.pdf
ISSN 0100-2945 <http://dx.doi.org/10.1590/0100-29452017376>

VEGETAL BURGERS OF CASHEW FIBER AND TEXTURIZED SOY PROTEIN¹

JANICE RIBEIRO LIMA², DEBORAH DOS SANTOS GARRUTI³,
GUSTAVO ADOLFO SAAVEDRA PINTO⁴, HILTON CÉSAR RODRIGUES MAGALHÃES⁵,
TEREZINHA FEITOSA MACHADO⁶

Revista Ciência Agronômica, v. 49, n. 4, p. 708-714, out-dez, 2018
Centro de Ciências Agrárias - Universidade Federal do Ceará, Fortaleza, CE
www.ccarevista.ufc.br

Technical Article
ISSN 1806-6690

Vegetal burgers of cashew fiber and cowpea: formulation, characterization and stability during frozen storage¹

Hambúrgueres vegetais de fibra de caju e feijão-caupi: formulação, caracterização e estabilidade durante armazenamento congelado

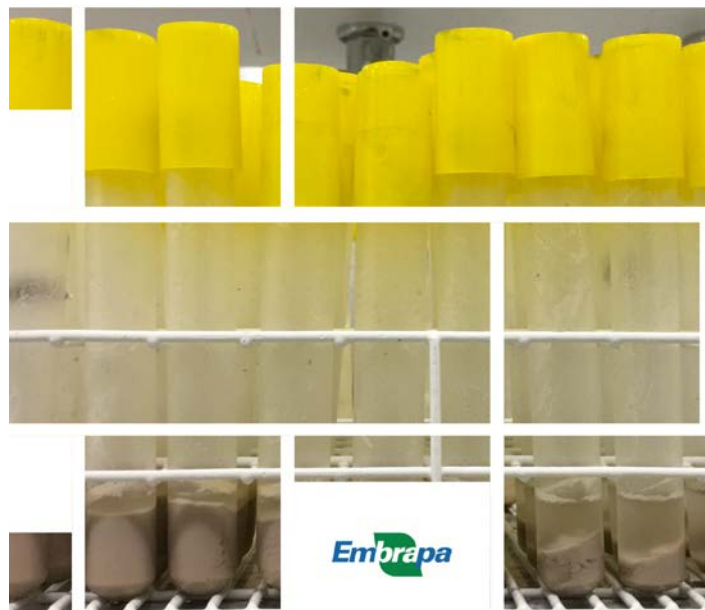
Janice Ribeiro Lima^{2*}, Deborah dos Santos Garruti³, Terezinha Feitosa Machado³ and Ídila Maria da Silva Araújo³



Research supporting public decisions and policies.



Guide for Technological-Functional Characterization of Protein Ingredients for the Plant-Based Market



Contents

Introduction

Steps Taken to Define the Methods Applied in the Technologic Characterization of Plant Protein Ingredients

- Selection of the technological-functional properties of interest
- Selection of ingredients to be tested according to the methodolog
- Selection of methods available in the literature
- Identification of the variables observed for each selected method
- Selection of parameters and laboratory testing

Methods for Technological-Functional Evaluation of Plant Prot Ingredients

- Emulsifying activity and emulsion stability
- Foaming capacity and foaming stability
- Water solubility
- Water and oil holding capacities
- Gelling capacity

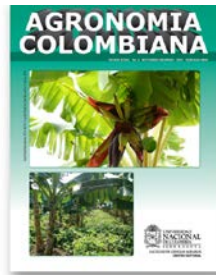
Final Remarks

References

High iron
beans and
High zinc
maize in
Colombia



Research efforts reaching the Market in Colombia



Published

2014-09-01

Highly nutritional cookies based on a novel bean-cassava-wheat flour mix formulation

Galletas con alto valor nutricional basadas en una nueva formulación de mezclas de harinas de frijol, yuca y trigo

DOI:

<https://doi.org/10.15446/agron.colomb.v32n3.45944>

Prototipos de productos alimenticios más nutritivos con la inclusión de harinas de frijol, maíz y batata



Share



Citation

Gallego C. S.; Morales G. O. (2023) Prototipos de productos alimenticios más nutritivos con la inclusión de harinas de frijol, maíz y batata. Iniciativa AgriLAC Resiliente. 24 p.

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Author ORCID identifiers

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Contributes to SDGs





Journal of the
**Science of Food and
Agriculture**



Research Article |  **Open Access** | 

Kinetics of thermal degradation of carotenoids related to potential of mixture of wheat, cassava and sweet potato flours in baking products

Maria A Ospina , Jhon Larry Moreno, Thierry Tran , Angélica M. Jaramillo, Sonia Gallego-Castillo, Bernardo Ospina, Dominique Dufour

First published: 05 July 2023 | <https://doi.org/10.1002/jsfa.12831>

Foodtech hub latam, transforming your innovation into a business.

OUR ESSENCE

Our mission is to select, capitalize, model, and mentor **disruptive companies** in the food chain that impact the selected verticals: Products, Process/New Technologies, Ag Reg, Smart Packaging, Food Loss/Food Waste, Nutrition, and Wellness.



We believe in accessibility, availability, transparency and accountability, that technology is the master pillar to make all this happen.

We believe that technology should be used in order to create sustainable models with a circular Ecosystem.

To be facilitators of open innovation.

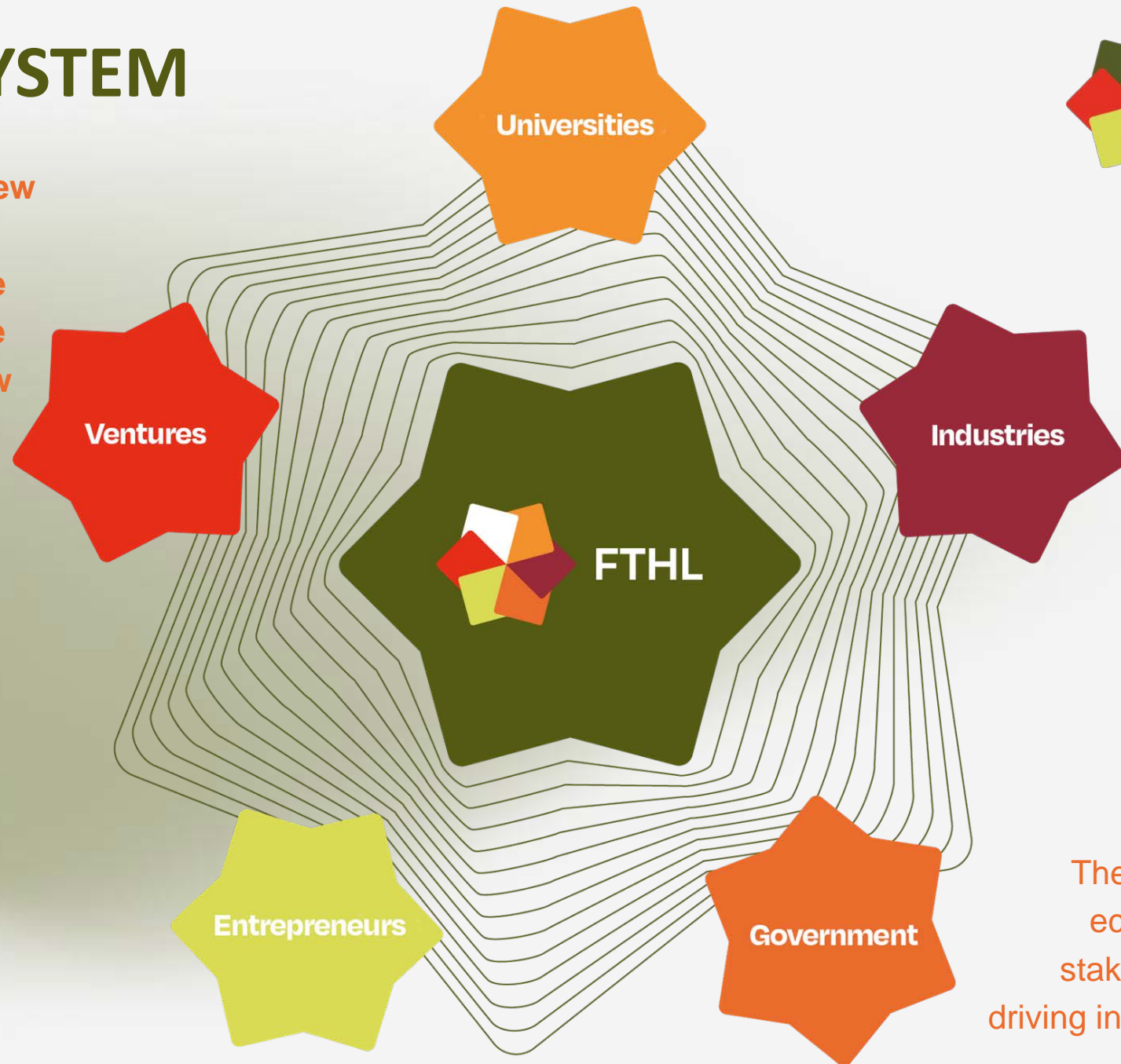


<https://foodtechhub.com.br/>

THE ECOSYSTEM



Lifestyle changes and new demands on how to consume healthier, more nutritious and affordable foods will promote a new revolution in the food chain.



The Foodtech hub latam is an ecosystem that connects the stakeholders in the food chain, driving innovation and development in the sector.

**Amazonia
Smart Food**



Amazônia Smart Food



Bootstrapping
RS 700.000,00



Plant Based Expo
NY - 2023





Plinia cauliflora

LONGEVITY

Indicação: Equilíbrio metabólico, Glicêmico e Modulação da microbiota.



Bixa orellana

NATURAL SLIM

Indicação: Equilíbrio metabólico e Hepático



Hericium erinaceus

COOLBRAIN

Indicação: Nootrópico, Foco e Atenção



Humulus Lupulus Linnaeus

BEHOP

Indicação: Nootrópico, Aroma (terpenos), Preservante natural e Equilíbrio metabólico



Passiflora edulis

REJUVENATE

Indicação : Manchas na pele, Anti-SASP (Senescência)



Caryocar brasiliense

SKINSHIELD

Indicação: Proteção solar



Rubian

extratos

“A NATUREZA NÃO FAZ MILAGRES, FAZ REVELAÇÕES”.

Carlos Drummond de Andrade.

Eduardo aledo
eduardo.aledo@rubian.com.br
11 993447293

MUITO OBRIGADO

"Clear By Design Extracts" SEGURANÇA E EFICÁCIA SUPLEMENTOS, ADITIVOS F&B, VET E COSMÉTICOS (B2B)

AS PRINCIPAIS PLATAFORMAS E BIOATIVOS



Identificação de matrizes vegetais contendo bioativos funcionais.

Valorizar a biodiversidade brasileira e outras matrizes botânicas, suas propriedades e oportunidades.



URUCUM
Tocotrienol
Geranylgeraniol
Bixina



JABUTICABA
Antocianinas
Proantocianidinas
Acido Elagico



PEQUI
Carotenoides
Ac. Graxos
Fenólicos



COGUMELOS
Erinacina
Hericinona
Betaglucana



MARACUJÁ
Carotenoides
Piceatannol
Ac. Graxos



LUPULO
Terpenos
Humulona
Xanthumol

UTILIZANDO TECNOLOGIAS QUE NÃO DEGRADAM OS BIOATIVOS



EXTRAÇÃO SUB E
SUPERCRÍTICA COM
CO2, ALCOOL E AGUA



PROTEÍNA
Humمامi

Proteína análoga à **Carne** animal, mais **nutritiva** e cultivada **forma sustentável** através da tecnologia de fermentação.



Progressos



Prova de conceito em escala laboratorial



Proteína Humمامi Integral



Proteína Humمامi Formulada

Founder



PhD. Sthefany Viana



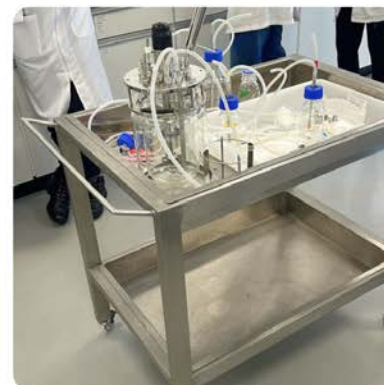
Mestrado e doutorado (UNESP) focados em fermentação e bioativos de fungos



Gestão durante 10 anos de empresa familiar.



Experiência em estruturar indústria alimentícia dentro das normas ANVISA.



Equipamentos para escala laboratorial



Biorreatores para escala piloto

Challenges and opportunities

- **Price Sensitivity:** Plant-based products need to be price-competitive with animal protein. However, the market's immaturity and economic factors, such as unfavorable exchange rates and challenging economic environment, pose obstacles.
- **Consumer education:** Less than half of consumers indicated awareness of novel ingredients, and “unsure of how these ingredients are made” was the largest barrier to trial.
- **Health, taste, and sustainability**
- **Innovation.**
- **Willingness to pay.**
- Drivers of demand include a rising vegetarian population, concerns over health, environmental sustainability, and animal welfare.
- Meat substitutes (e.g., burgers, sausages, nuggets) and plant-based dairy alternatives (e.g., almond, oat, and soy milk) are trending, **with double-digit growth rates reported for milk alternatives.**
- Supermarkets are dedicating **more shelf space** to plant-based products, signaling increasing consumer interest.
- Nut products like walnuts, almonds, and pistachios are also in demand as sources of plant-based protein.
- By understanding how consumers perceive novel ingredients, biotech start-ups, brands, and CPG companies can shape this emerging market to help contribute to building a more sustainable and resilient food system.

Thank you! marilia.nutti@embrapa.br