

FARMER'S
FRIDGE

TECNOLOGÍAS EMERGENTES PARA INNOVAR EN ALIMENTOS SALUDABLES Y DE CALIDAD PARA NUEVOS MERCADOS

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Seminario Miércoles del Exportador - PromPerú

19 de septiembre de 2018

Lima, Perú



@Fresh_Biz
@PrietoHontoriaP

CONTENIDO

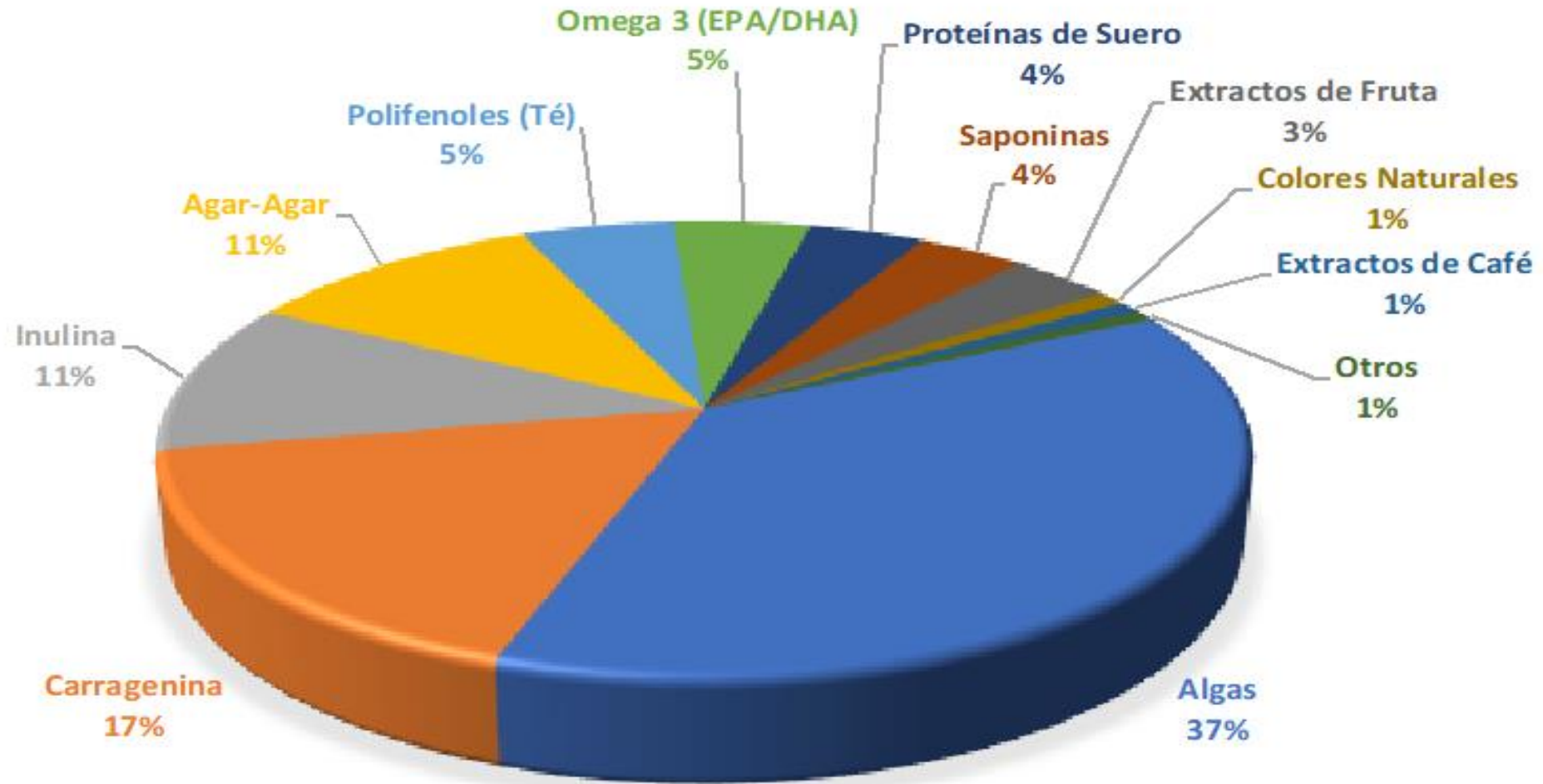
- I.- Reflexiones políticas de otros países
- II.- Nuevo consumidor y tendencias
- III.- Nuevas tecnologías de procesamiento de alimentos para conservar el valor nutricional
- IV.- Aplicaciones innovadoras de las nuevas tecnologías, en el nuevo contexto alimentario
- V.- Futuro o presente





Exportaciones Chilenas de Ingredientes Seleccionados

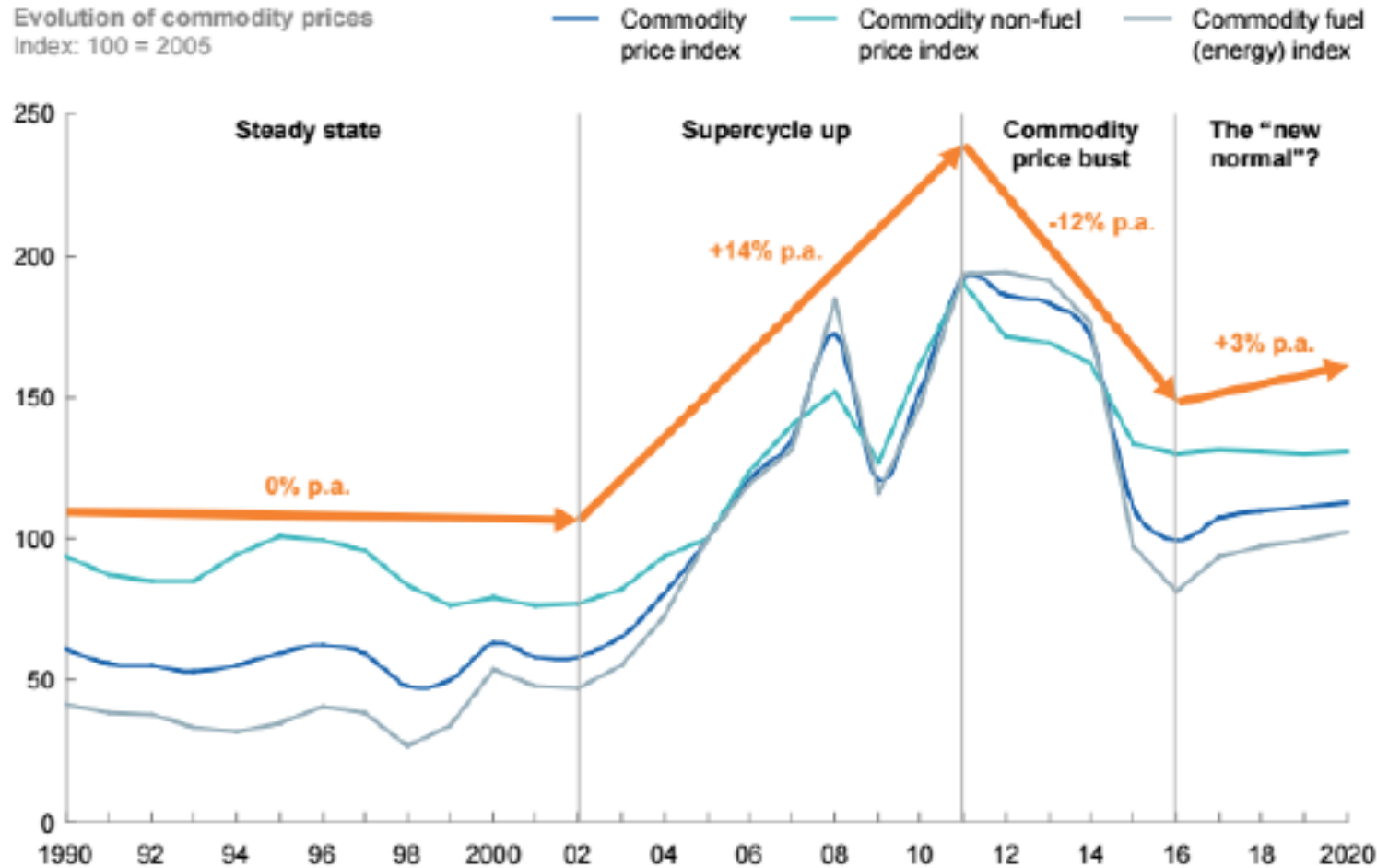
US\$ 348 Millones FOB (2017)



Chile participa del 1,9% del mercado global

EL SUPERCICLO DE LAS COMMODITIES HA FINALIZADO

Evolution of commodity prices
Index: 100 = 2005



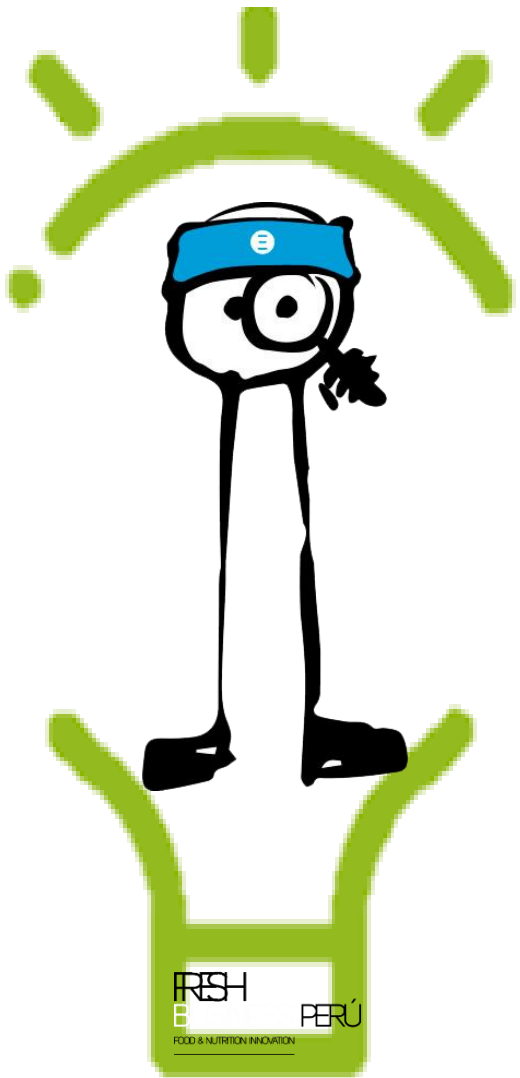
SOURCE: IMF; McKinsey Global Institute analysis



QUÉ ACTITUD TENEMOS???

<https://www.youtube.com/watch?v=n5mclfmBLrg>

¿Quiénes somos?



FOODTECH
NUTRITECH



FOOD TRENDS



BIODIVERSITY



Nuestra **VISIÓN**
Hacer de los
biodiversidad
peruana los
mejores productos
para todos los
consumidores de
una sociedad más
saludable.

¿QUÉ HACEMOS EN FRESH BUSINESS FOOD & NUTRITION ?

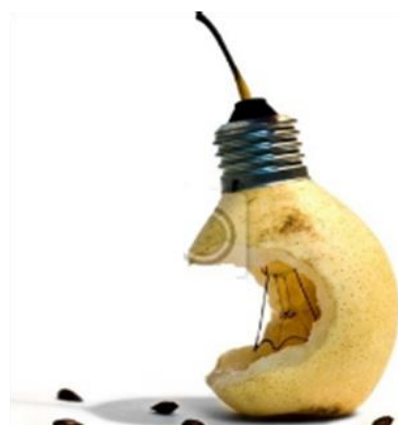


Market Research

Trends



Personalized Food Design



Food Innovation



Healthy Solutions

"New Product Development" (NPD)



Technological planning

Technology



Business Model / Strategical Assessment

Business Model



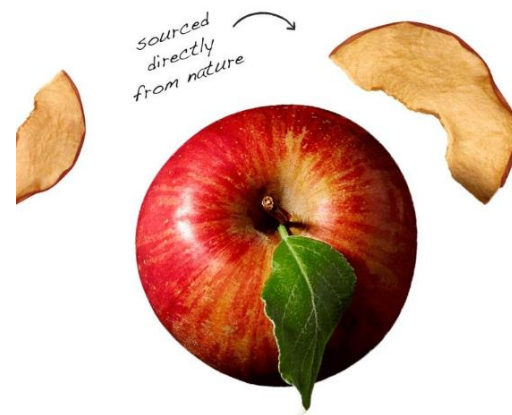
Business Acceleration

Co-Inversor

FRESH UP!
Fresh incubator for food startups

FRESH BUSINESS
NEW BUSINESS ATTITUDE

CASO DE ÉXITO: VEGGIE REVOLUTION



PERÚ Ministerio de Agricultura y Riego



PNIA PROGRAMA NACIONAL DE INNOVACIÓN AGRARIA

CIENCIAACTIVA

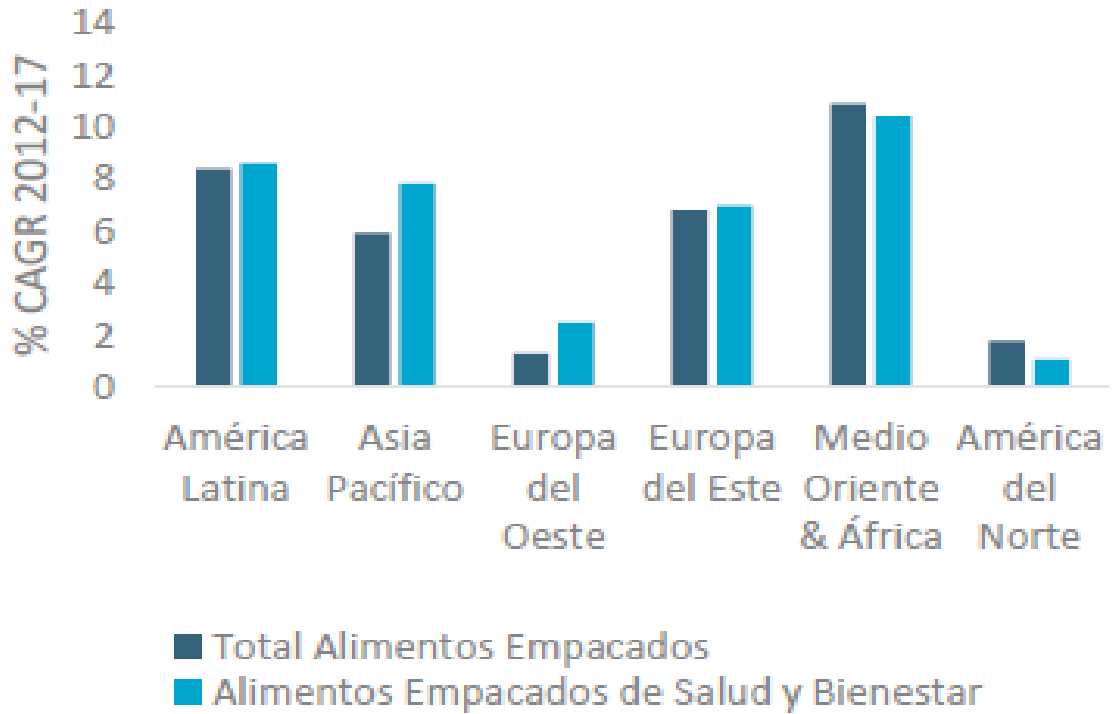
CONCYTEC



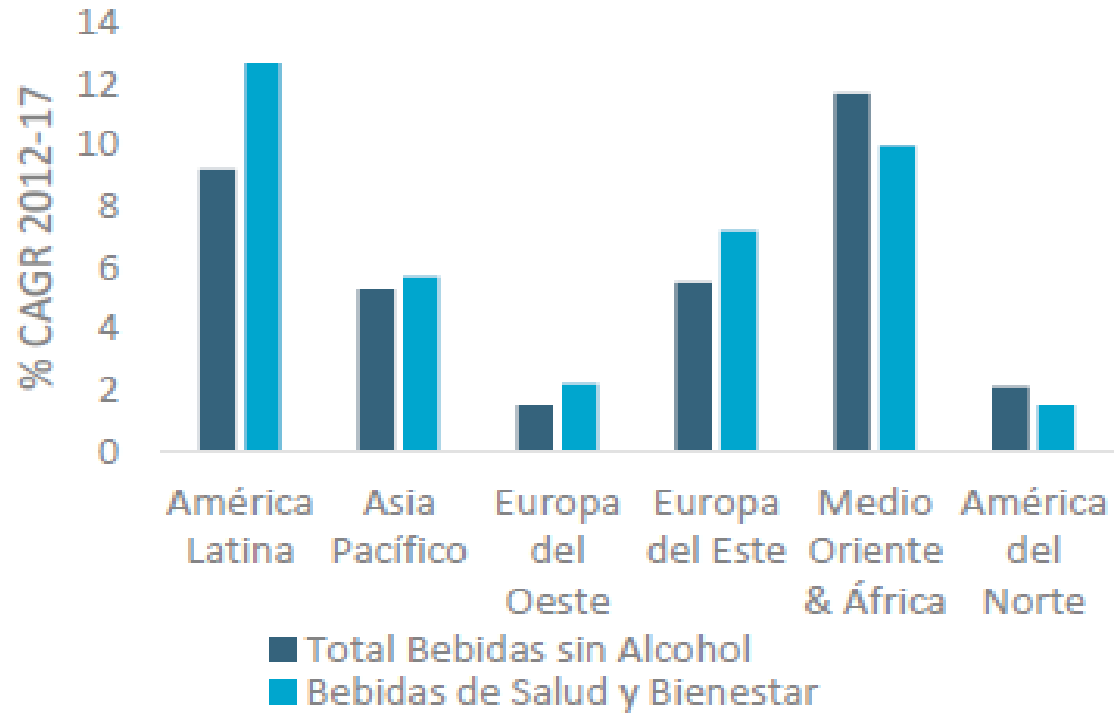
FRESH BUSINESS PERÚ
FOOD & NUTRITION INNOVATION

UN NUEVO CONSUMIDOR Y UN NUEVO NEGOCIO

Salud y Bienestar vs Total Alimentos Empacados

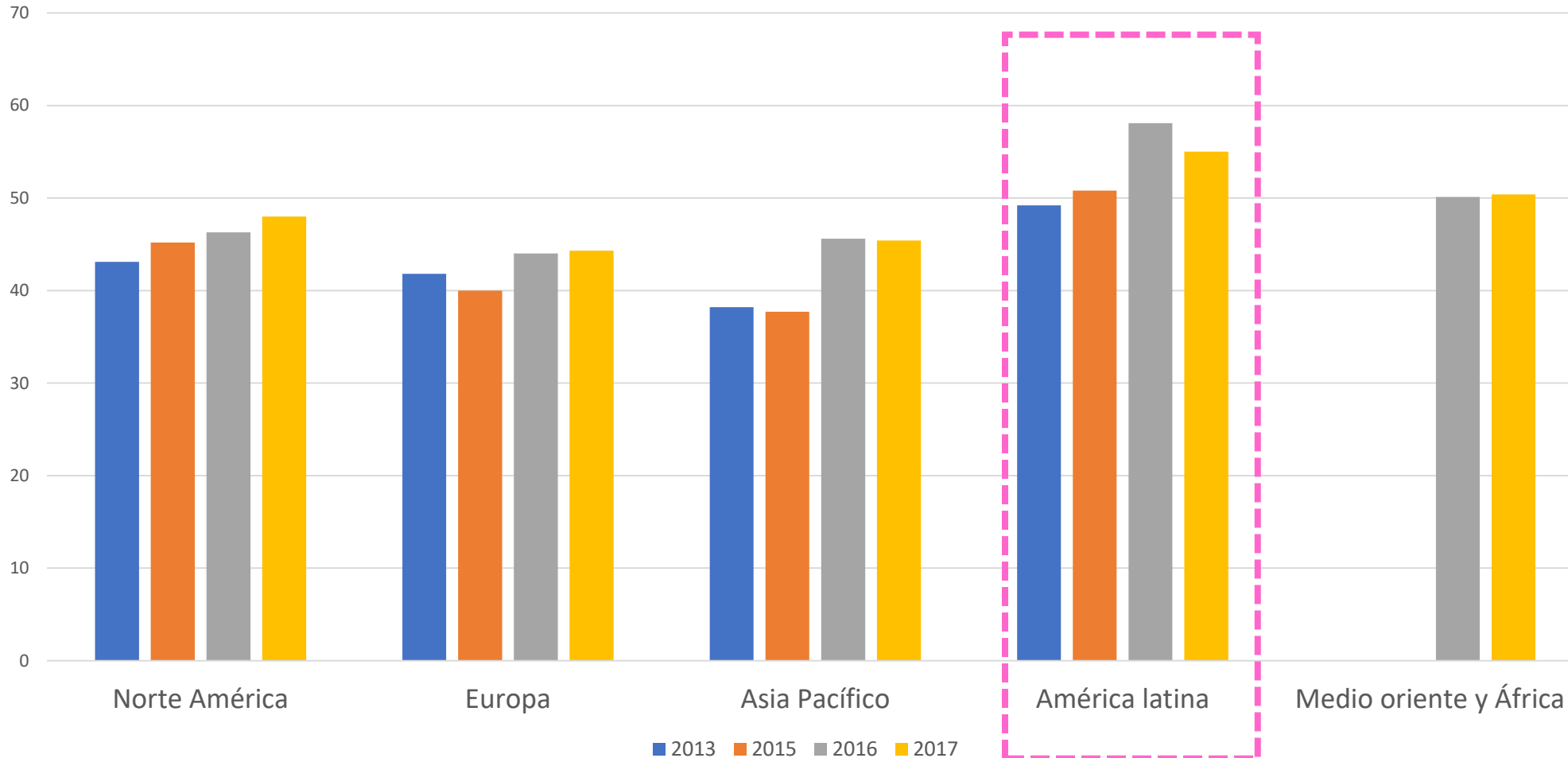


Salud y Bienestar vs Total Bebidas sin Alcohol



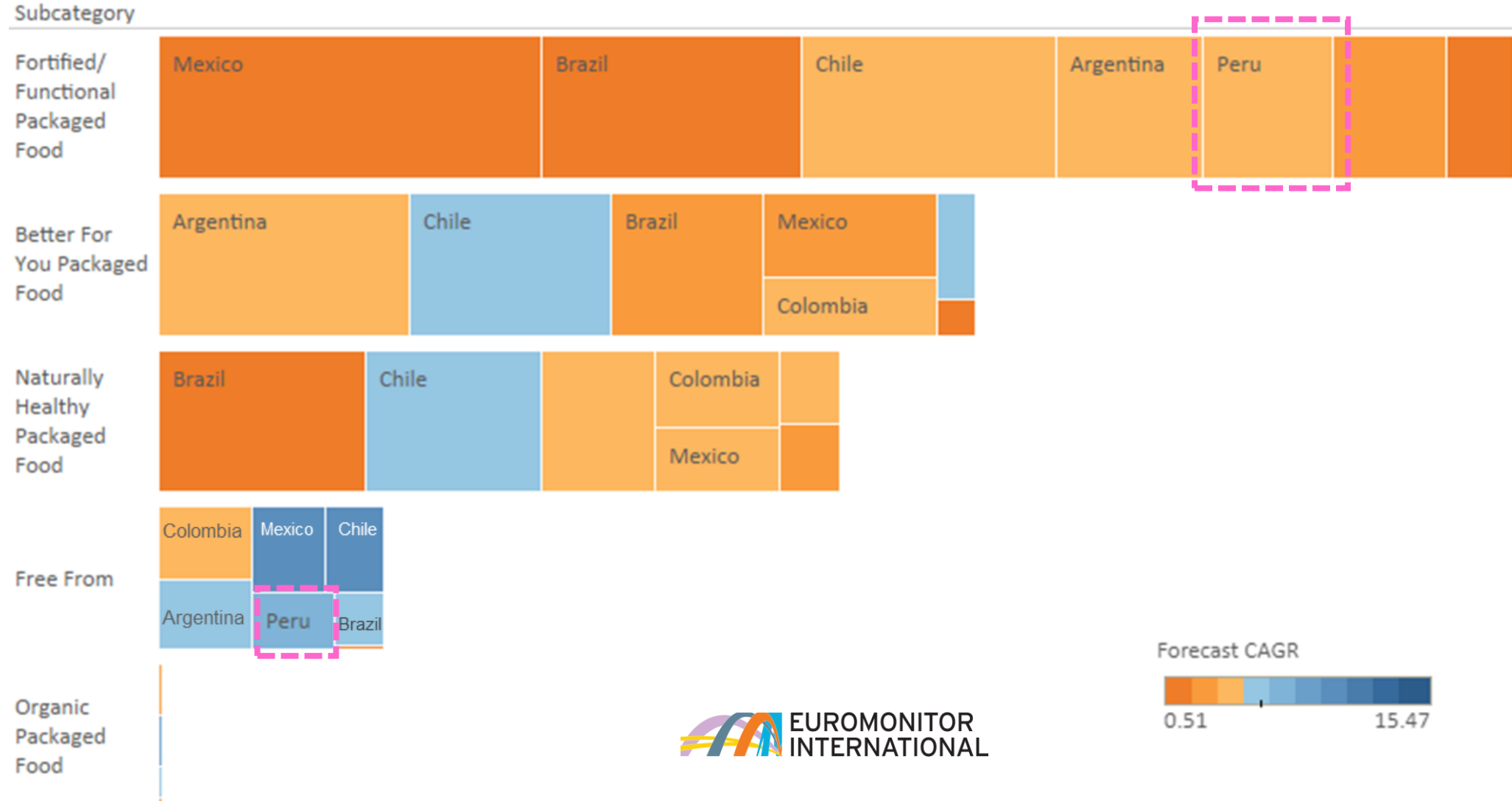
EL "MALO" DE LA PELICULA

"limitado en azúcar o sin azúcar añadida"
Encuesta global sobre tendencias del consumidor (2017)



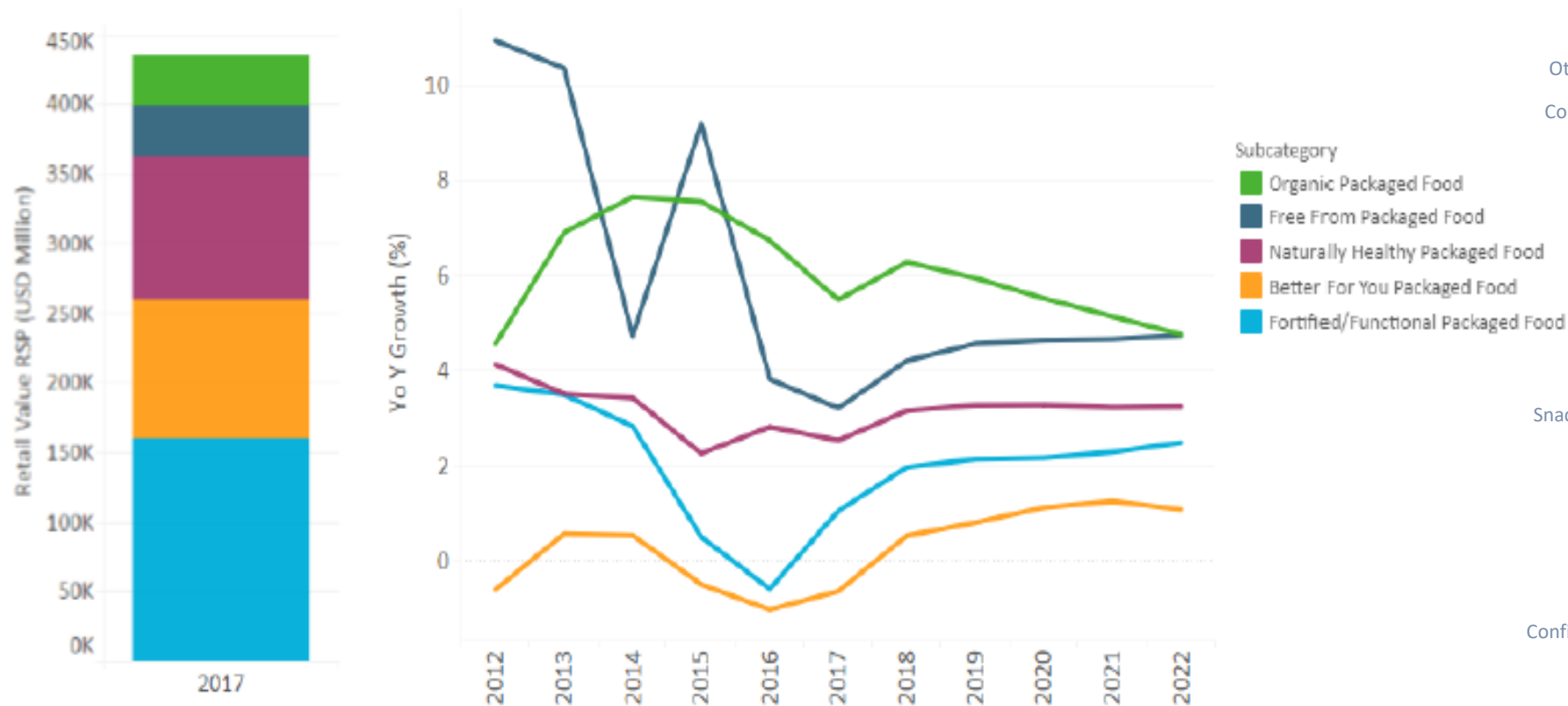
TRENDING TOPIC "FREE FROM" EN LATAM

Health and Wellness Packaged Food in Latin America: USD per capita and Forecast CAGR (%)



MERCADO HEALTH AND WELLNESS

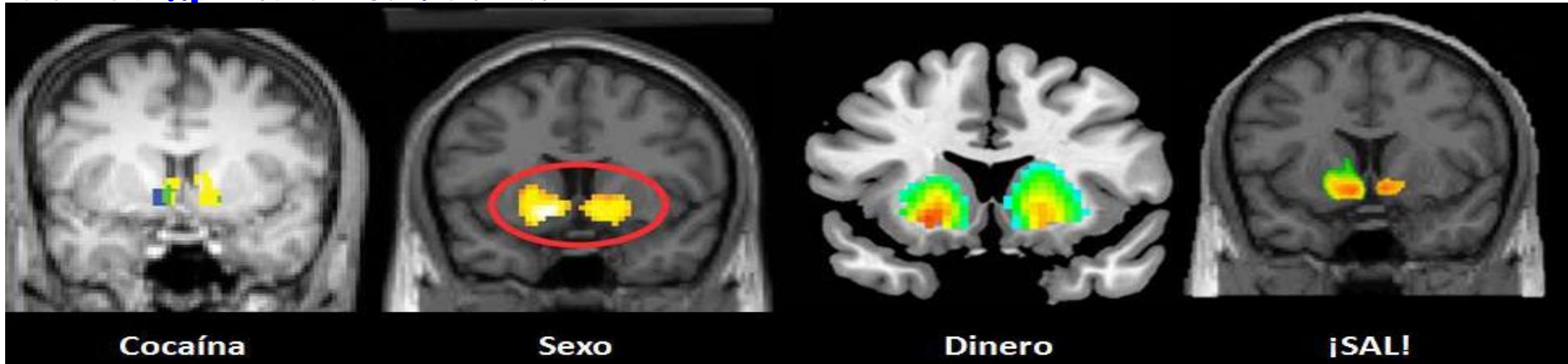
Health and Wellness Packaged Food: The evolution of the Industry 2012-2022



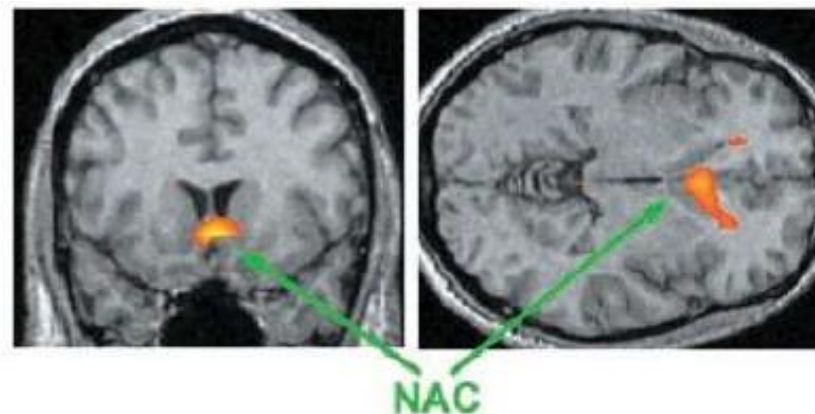
Latinoamérica CAGR 2017 - 2022



Se habla de lo saludable pero... Nucleo accumbens y el "circuito de la recompensa" ¿Manda?

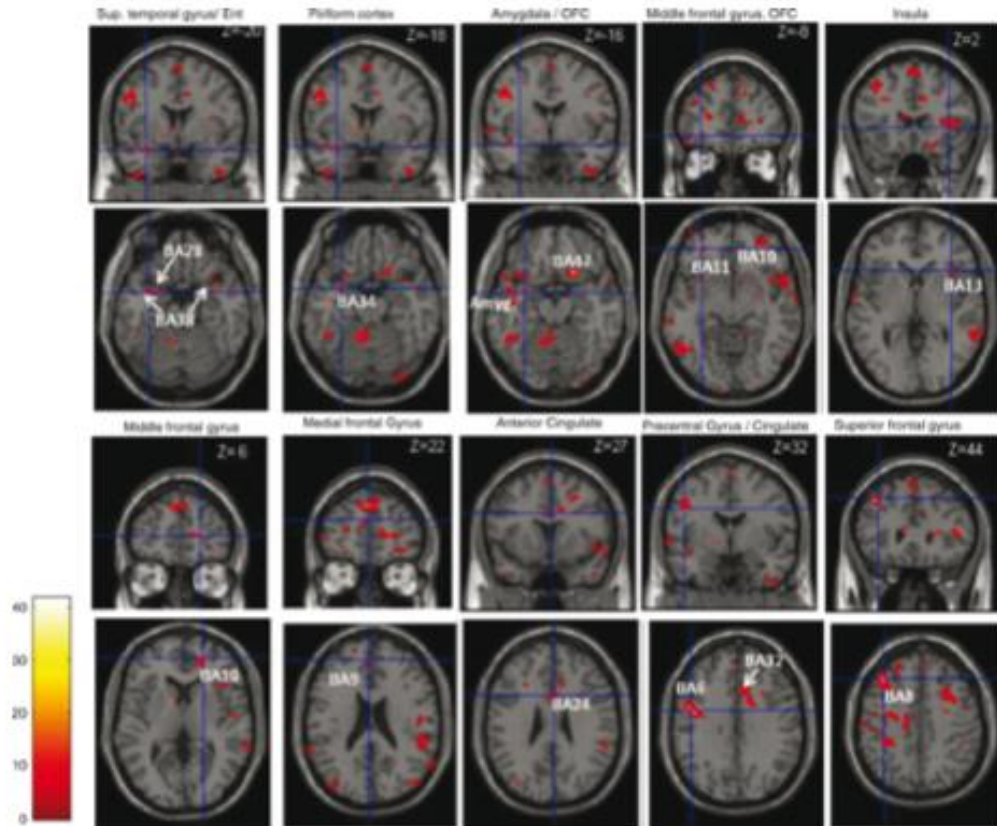


Lípidos estimulan áreas cerebrales relacionadas con la "supervivencia" y la "recompensa"



PODEMOS REDUCIR SAL?





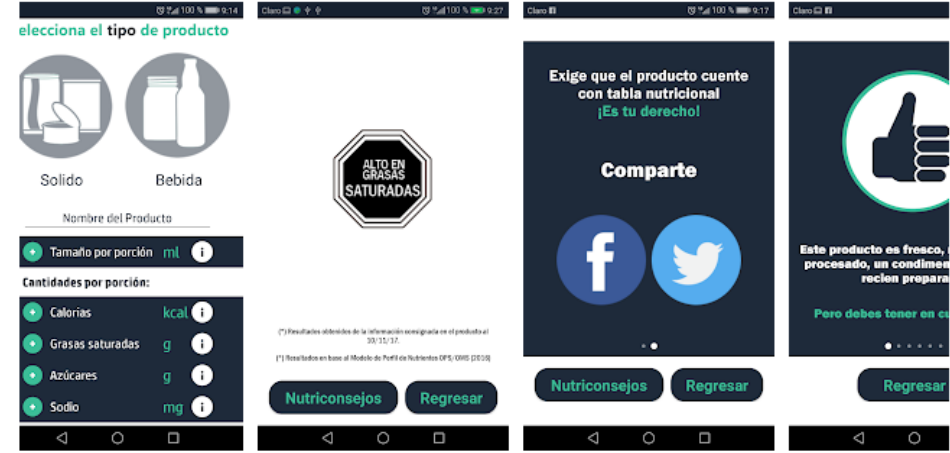
Estudios de “plasticidad sináptica” demuestran que determinados aromas son capaces de replicar respuestas cerebrales similares a sabores de nutrientes críticos en cerebro



Diadem (EEG)
Sistema wearable y ultraligero para medir la actividad eléctrica del cerebro.

GSR & ECG Ad-Hoc
Sistema de medición biométrica para registrar las señales fisiológicas de respuesta galvánica de la piel y ritmo cardíaco.

CONSUMIDOR MAS INFORMADO



CONTEXTO LEGISLATIVO

CARICATURA

por CARLOS LAVIDA

A CONTINUACIÓN EL SEMÁFORO NUTRICIONAL APROBADO POR EL CONGRESO:



carlos
Lavida

BLOCKCHAIN



Whole Chicken Ledger 1203JW

Pre-Seasoned Chicken, Smoked Paprika Flavor

HATCHERY

Location
Morgan's Family Poultry
1 Briarlane Road
Mackenson CA 94571

Birthdate
06 11 2043 (Hatch ID 081)

Species
Motted Java (Roaster)
Large Fowl & Bantam

Health Status / Incidents
NONE

Date Arrived
6 02 2043

Date Departed
6 15 2043

FARM

Location
Morgan's Family Poultry
1 Briarlane Road
Mackenson CA 94571

Feed Type
Fruit Veg pellet
Organic Grain pellet
Calcium supplement (weekly)

Vaccinations
ALL: 06 29 2043

Antibiotics
NONE
Microbial-free water sources

Environment
indoor/outdoor

Treatment Standard
A1

Health Status / Incidents
Broken Foot 07 04 2043
staphylococcosis 07 22 2043

Starting Weight
5.0Z

End Weight
3 LBS

Date Arrived
04 15 2043

PROCESSING

Location
Block's Bir-
location 111
CA 94608

Slaughter & Processing
HU-ARG90
n/a

Starting We
2.8 LBS

End Weight
2.5 LBS

Date Arrive
10 31 2043

Date Depart
11 02 2043

DELICIOUS IS JUST WHERE WE START

INTRODUCING BLOCKCHAIN TRANSPARENCY



A smartphone displays the ZEGO logo and the text 'Contains Peace of Mind'. Below this, it shows 'Seed+Fruit Sunflower Date Protein Test Results' with a 'Sell by Date 01/2020'. The results list: Peanut: Not Detected, Milk: Not Detected, Soy: Not Detected, Gluten: Not Detected, and Glyphosate: Not Detected. A red circle highlights a QR code on the bottom of the phone. A red arrow points from the QR code to the text 'SCAN ANY QR "/>

SCAN ANY QR
"Z-CODE"
ON ZEGO
PRODUCTS
& SEE 3RD
PARTY LAB
TEST RESULTS



FREE FROM TOP 14 ALLERGENS & CORN

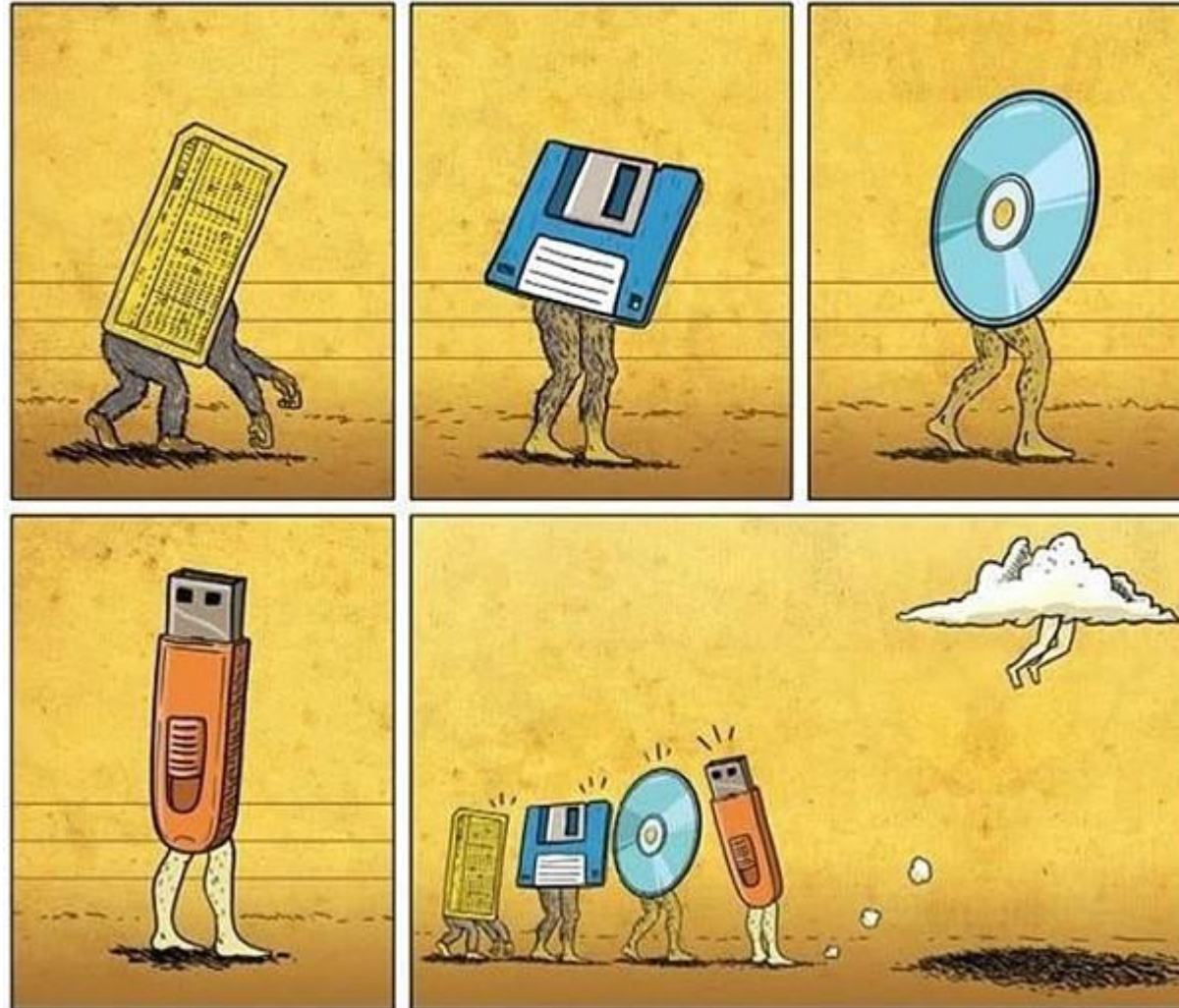
FRESH
BUSINESS PERÚ

FOOD & NUTRITION INNOVATION



HEMOS EVOLUCIONADO???

Evolution of Memory Storage



VIA 9GAG.COM

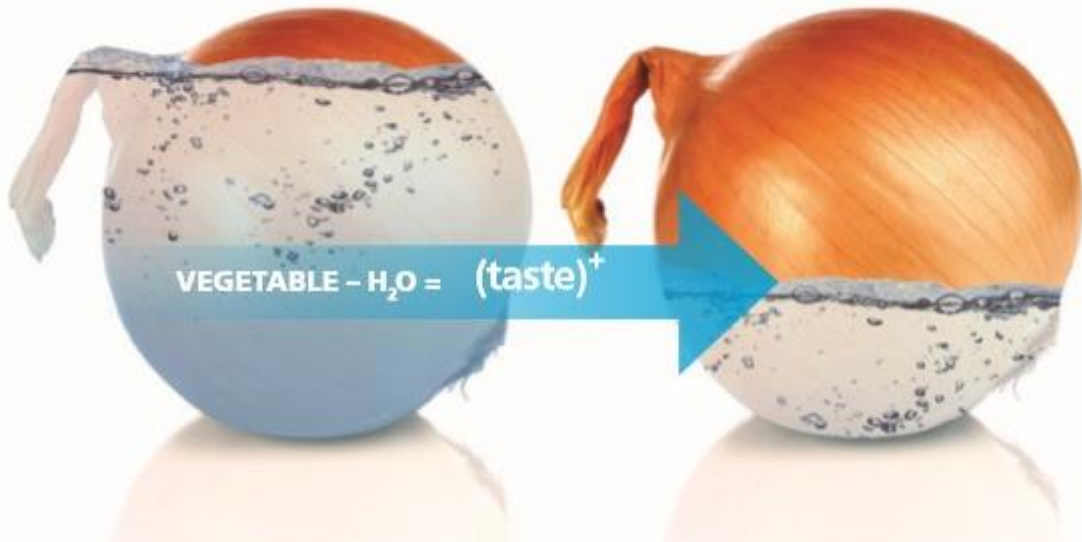
DESHIDRATACIÓN

ES IGUAL CUALQUIER DESHIDRATADO???



ANTICIPÁNDONOS SIEMPRE A TRAVÉS DE LA INNOVACIÓN

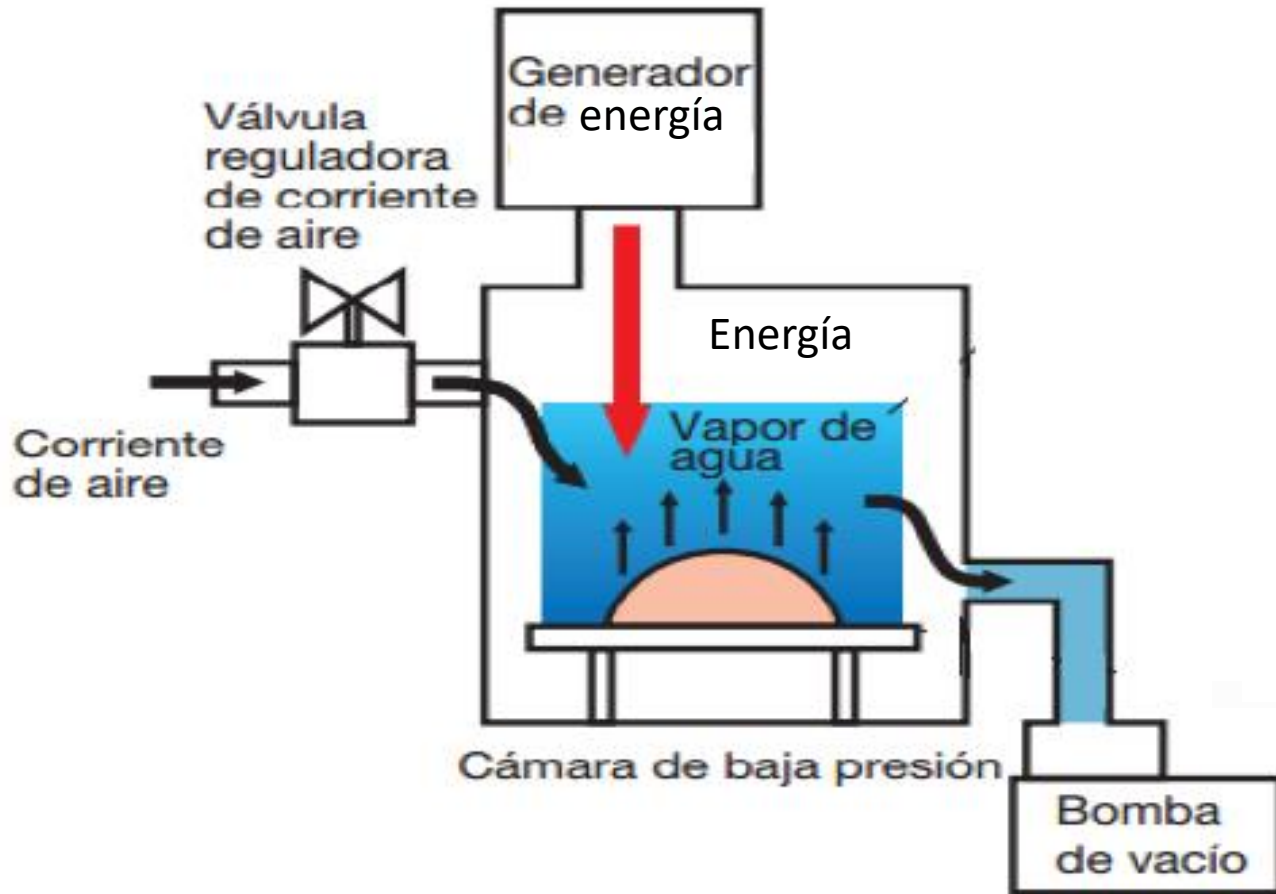
- AGUA + SABOR



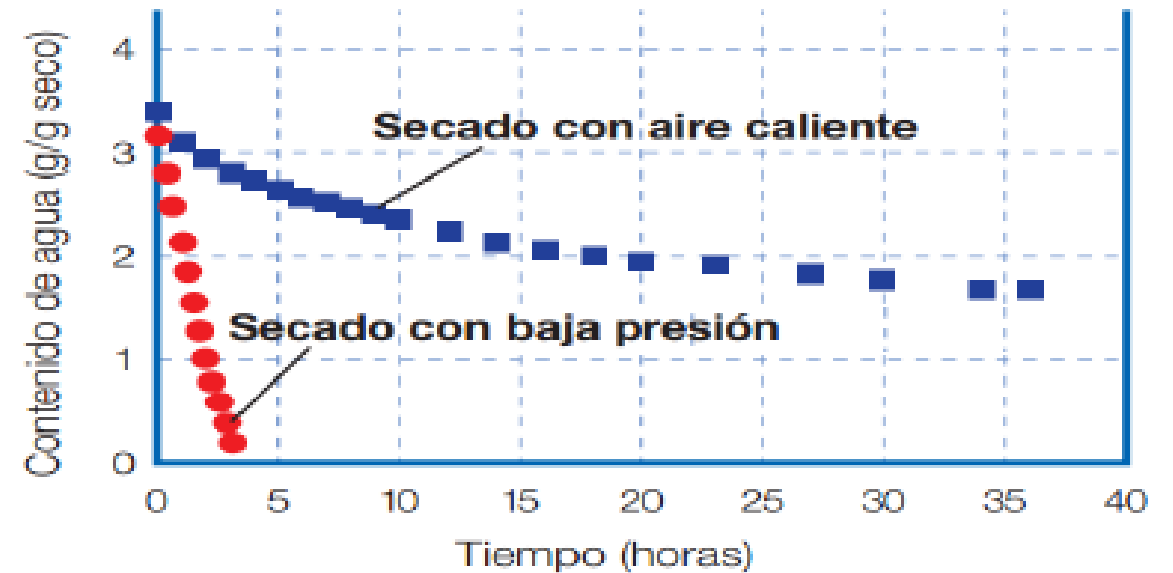
USO DE PRESIÓN Y VACÍO
BAJAS TEMPERATURAS
BAJOS TIEMPOS DE TRABAJO
BAJO COSTO DE PRODUCCIÓN
ECO-FRIENDLY AND FOOD SAFETY
VERSÁTILIDAD



ANTICIPÁNDONOS SIEMPRE A TRAVÉS DE LA INNOVACIÓN



Comparación de los métodos de secado



ANTICIPÁNDONOS SIEMPRE A TRAVÉS DE LA INNOVACIÓN



**FRESH
BUSINESS PERÚ**
FOOD & NUTRITION INNOVATION



Drying method	Time (hours)	Max temp (° C)
AD	13	70
<i>quantaREV</i>	1.4	68
<i>freezeREV</i>	7.6	30

Drying method	Density (g/mL)	Rehydratio n Time (min)	Antioxidant activity	
			$\mu\text{mol Trolox equivalent /g solid}$	Ascorbic Acid (Retention %)
ABTS				
AD	1.12	160	12	77
<i>quantaREV</i>	0.36	70	18	91
<i>freezeREV</i>	0.31	48	20	93

Drying method	Density (g/mL)	Rehydration Time (min)	Antioxidant activity	
			$\mu\text{mol Trolox equivalent /g solid}$	Ascorbic Acid (Retention%)
ABTS				
AD	0.96	185	77	25
AD+NutraREV	0.4	90	101	80
<i>freezeREV</i>	0.15	45	119	84

INGREDIENTE FOODTECH

SABOR, AROMA Y
COLOR ORIGINAL
CONSERVACION DE
ANTIOX. Y VIT.
ORAC

ALTO VALOR
NUTRICIONAL
INGREDIENTE
FUNCIONAL

SIN AZUCAR
SIN ADITIVOS
SIN CONSERVANTES
SIN GLUTEN

CRUNCHY
SABROSO
NUEVA EXPERIENCIA
DIVERTIDO

respaldados
por equipos de
inteligencia de
mercado y
centros
tecnológicos
especializados

SAZONAMOS LA INNOVACIÓN... CON INGREDIENTES NATURALES



DESAYUNO NOVEDOSO



**EAT & GO HEALTHY SNACKS
BARLEY PORRIDGE WITH APPLE
PIECES AND CRANBERRY FILLING
(RUSSIA)**



**GOVINDA BACKPACKER
COOKIES (GERMANY)**



T-STICKS (UK)

SNACKIFICACIÓN



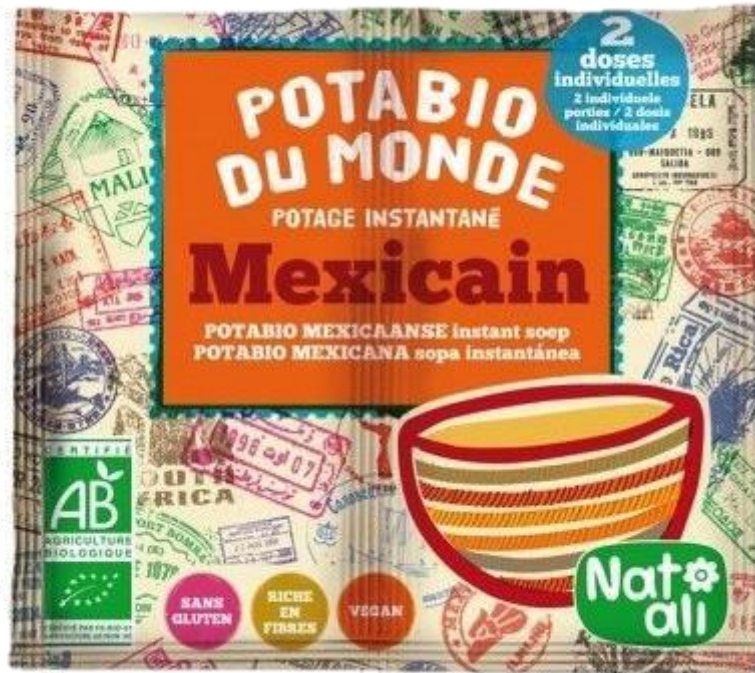
EAT & GO SNACKS BAR- CHEESE (EEUU)



BROCCOLI CHIPS (Thailand)



COMIDAS INTERNACIONALES



**POTABIO DU MONDE
MEXICAIN INSTANT SOUP
(FRANCE)**



**QUINOA INSTANT SOUP
(SPAIN)**



AFRICAIN LUNCH RTE (UK)

BEBIDAS FUNCIONALES



PROTEIN WATER (UK)

20g PROTEIN 1.36g BCAAS



20g Protein



Essential BCAAs



Vitamin B6, C & D



Fat Free



Sugar Free



Gluten Free



Neuro Sleep Drink, Mellow Mango (EEUU)



NITRO COLD BREW TEA
GUAVA-MANGO (EEUU)

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FOOD & NUTRITION INNOVATION

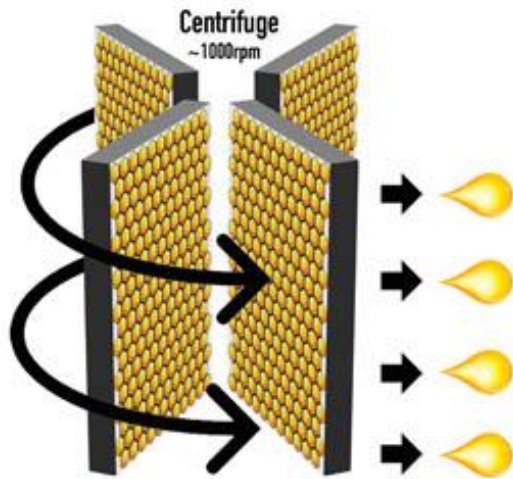
COLD PRESS

COLD PRESS REINVENTA LOS JUGOS



NO SOLO EN JUGOS...

classic

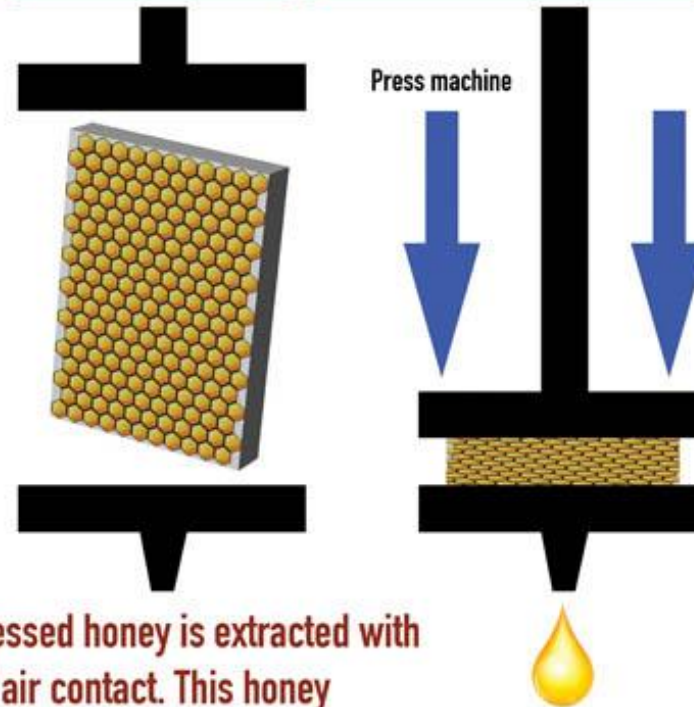


Our classic unheated honey is extracted in a high-speed centrifuge. This has been the preferred extraction technology for over 100 years.



classic

cold-pressed™



Cold-pressed honey is extracted with minimal air contact. This honey has a higher pollen-count and is richer in natural anti-oxidants.

cold-pressed™

DIFERENCIACIÓN



Cold-Pressed JUICE

Centrifugal JUICE

VS

MAXIMUM NUTRIENTS

Minimal heat is applied in the extraction process, retaining valuable enzymes and vitamins



REFRESHINGLY CLEAN FLAVOR

With a crisp taste, cold-pressed juice wins most taste tests



LONGER SHELF LIFE

Nutrients are preserved for an extended period of time



HIGHER YIELD

A juice press extracts 20%-30% more juice from the same fruits and veggies, creating less waste



BREAKS DOWN QUICKLY

Centrifugal juice starts to separate within minutes of extraction



PULPY & CHUNKY

Juice has high solid content - resulting in a thicker and inconsistent mouth-feel



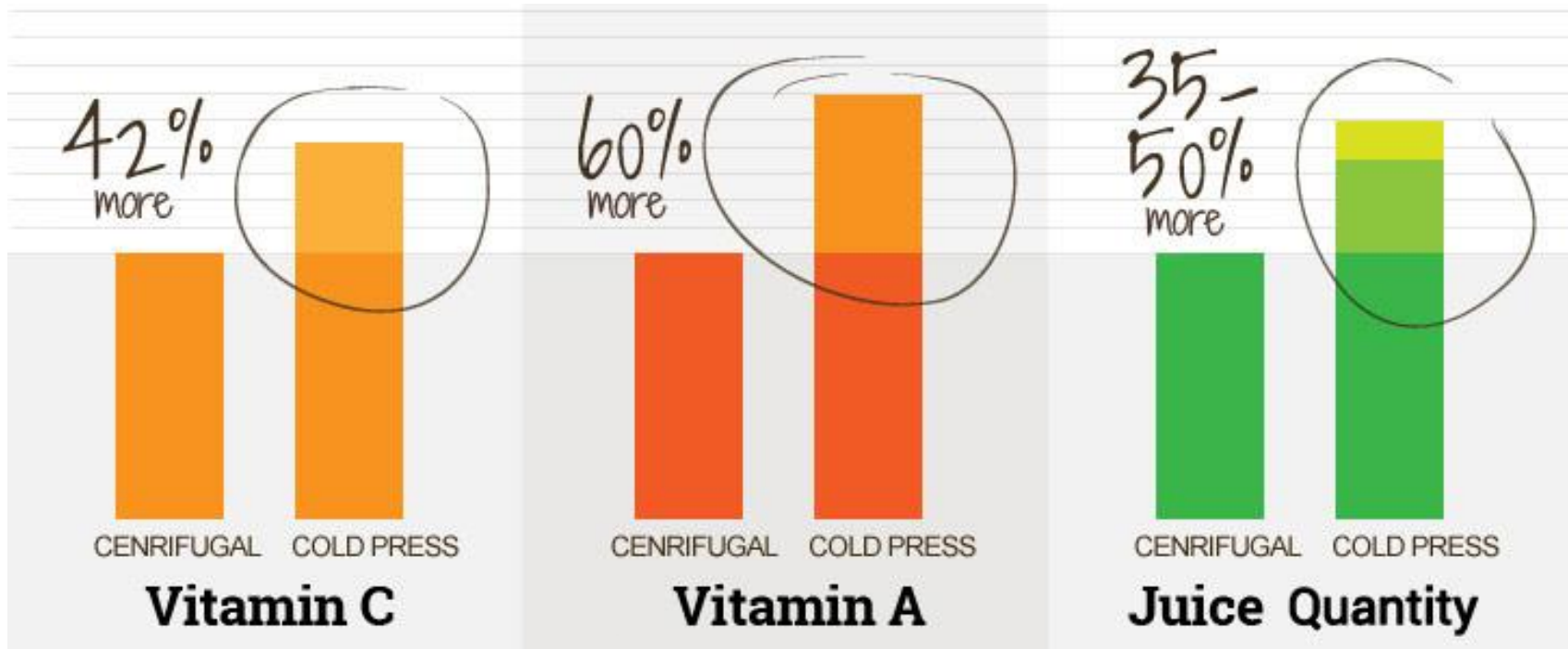
Cold-pressed juice is made on a juice press, which slowly applies pressure to extract juice from the fruit and vegetables. This method is more gentle than other juicing methods, adding minimal heat and oxidation to the juice. Cold-pressed juice looks better, tastes better, has longer shelf life, creates less waste, and is proven to retain more vitamins and nutrients than centrifugal juice.

Brought to you by Goodnature. Learn more at goodnature.com

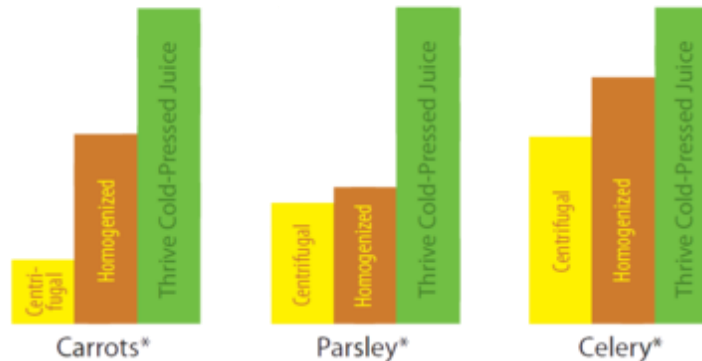
Goodnature

<https://youtu.be/mNkvc9H31HY>

APUESTA POR EL VALOR NUTRICIONAL



Higher
Nutritional
Content



* The values depicted in these bar graphs represent the relative micro-nutrient content extracted from 5 pounds of each of these foods through these three different juicing processes.

■ Centrifugal
 ■ Homogenized
 ■ Thrive Cold-Pressed

Fresh
And
Organic

APLICACIONES



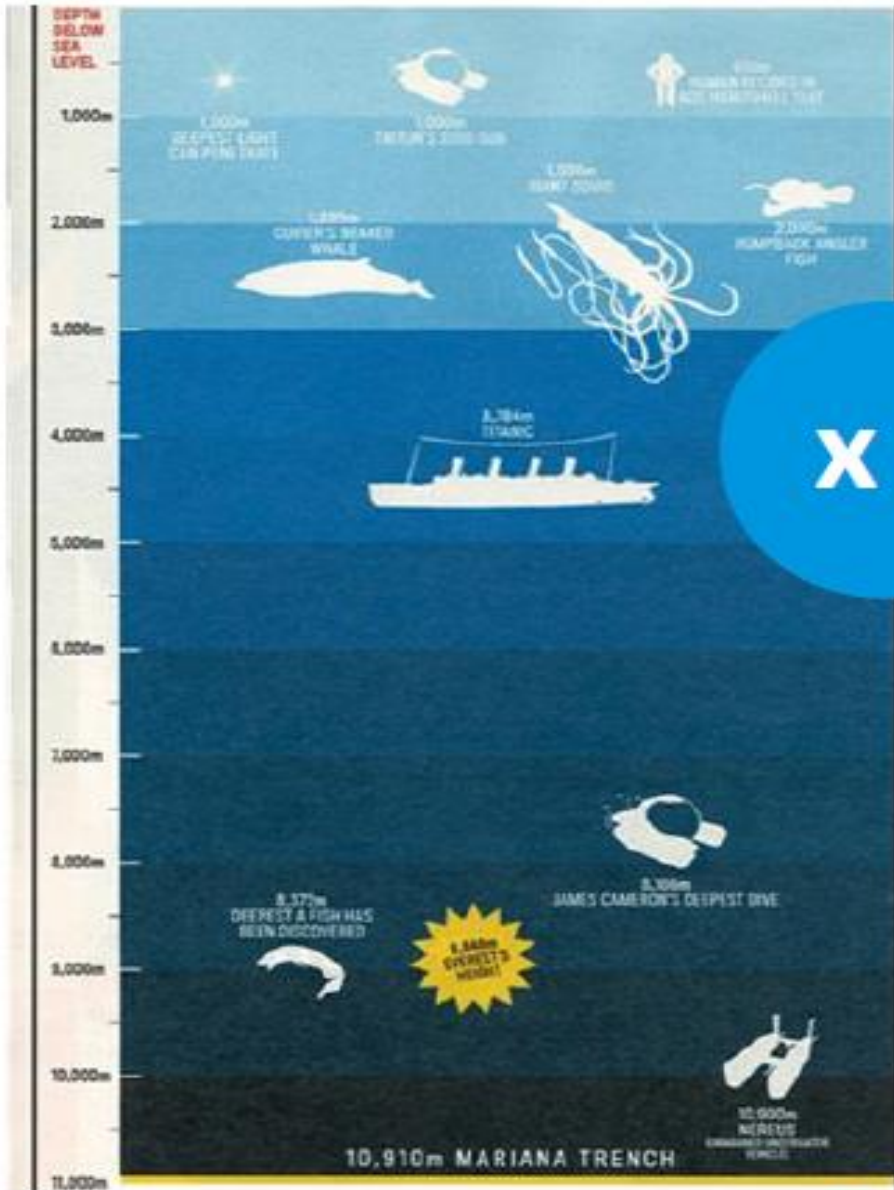
APLICACIONES



ALTAS PRESIONES HIDROSTÁTICAS

NUEVOS MÉTODOS DE CONSERVACIÓN: HPP

<https://www.youtube.com/watch?v=RzDDTPrvnV4>

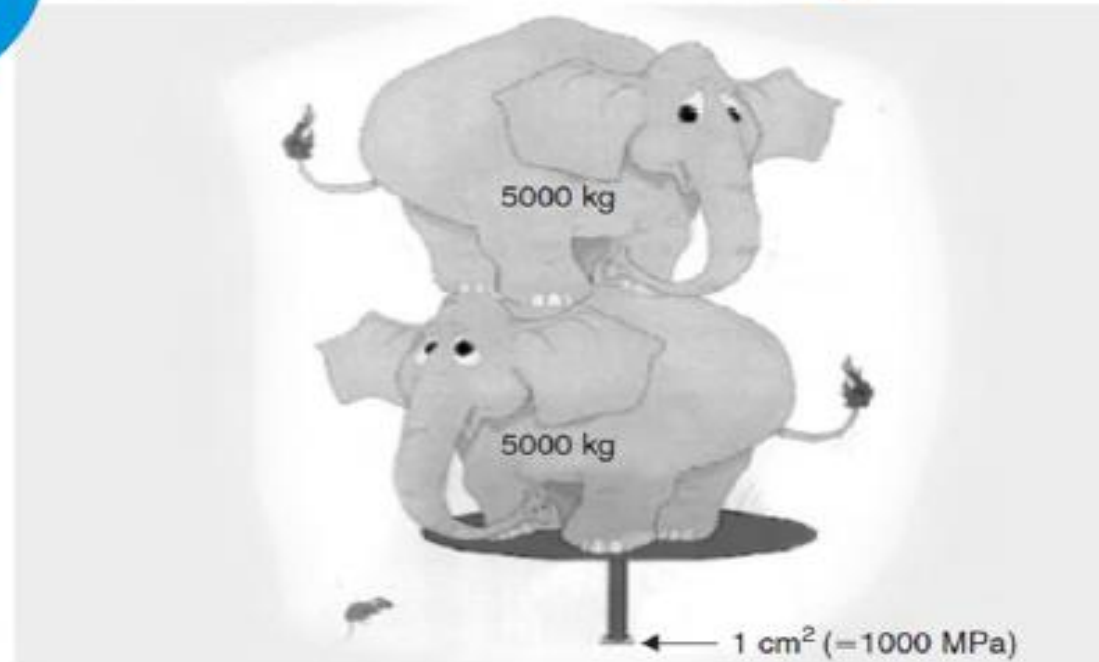


x 6

Presión atmosférica (nivel del mar):
1,03 bar = 0,1 MPa = 1 atm

Proceso HPP
6000 bar = 600 MPa = 6000 atm

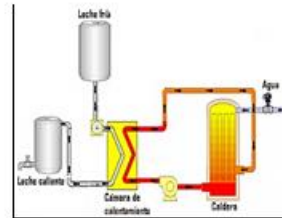
▶ **Presión a 60 Km bajo el mar!!**



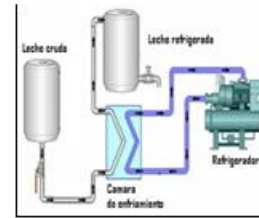
COMPARACION HPP VS PASTEURIZACIÓN



- Tecnología no térmica
- Presión se transmite casi instantáneamente (Identica en todos los puntos)
- No provoca cambios en la composición química
- Incremento de vida útil (Evita Recalls)
- Sin cambios en color
- Eliminación de aditivos



Circuito de calentamiento

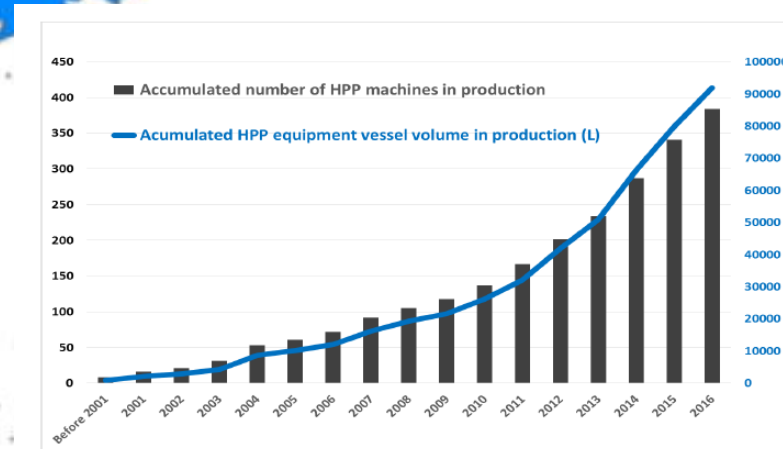
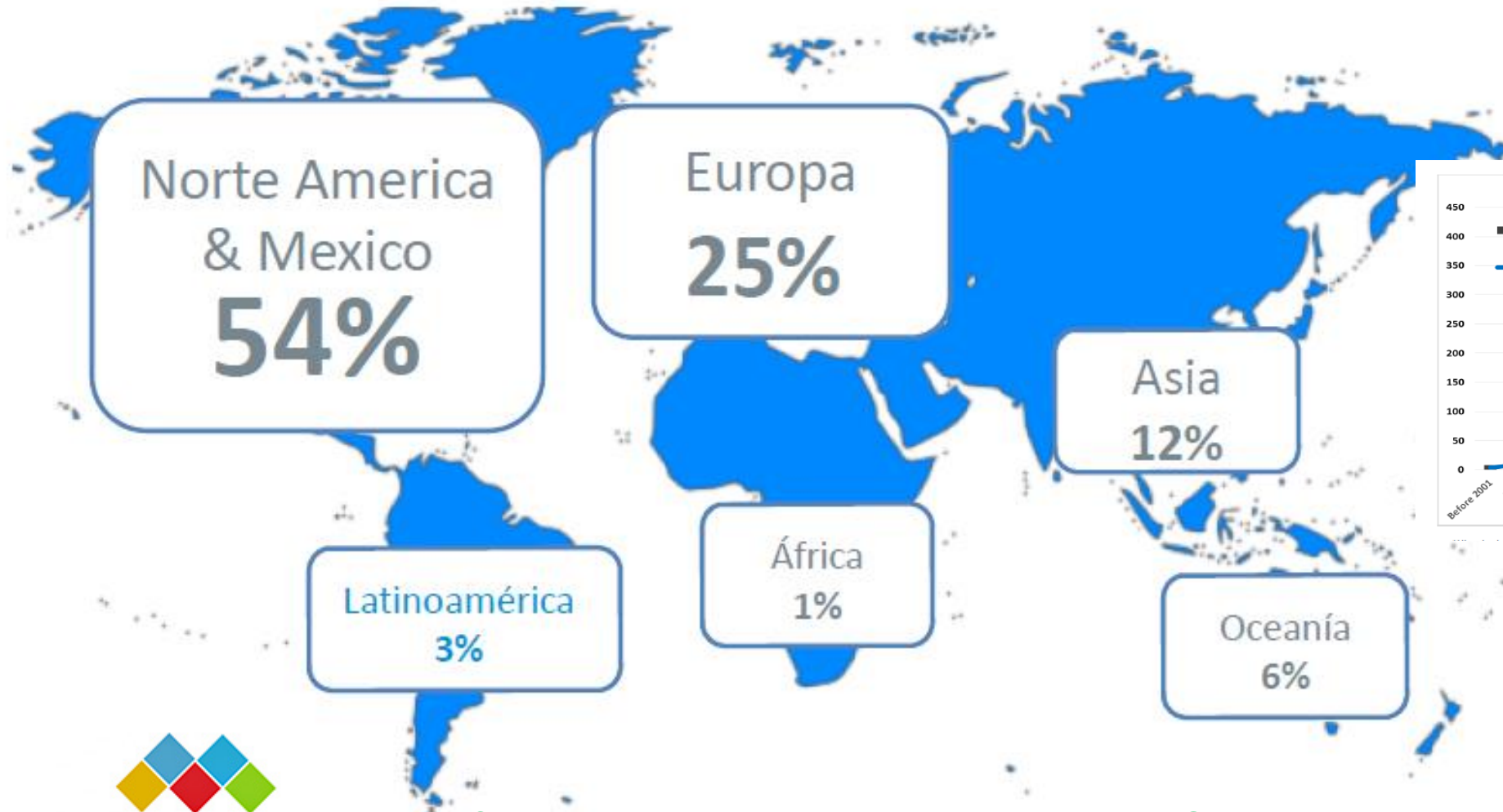


Circuito de enfriamiento

- Uso de calor
- Transmisión lenta (Gradientes diferentes de temperatura)
- Formación y destrucción de compuestos



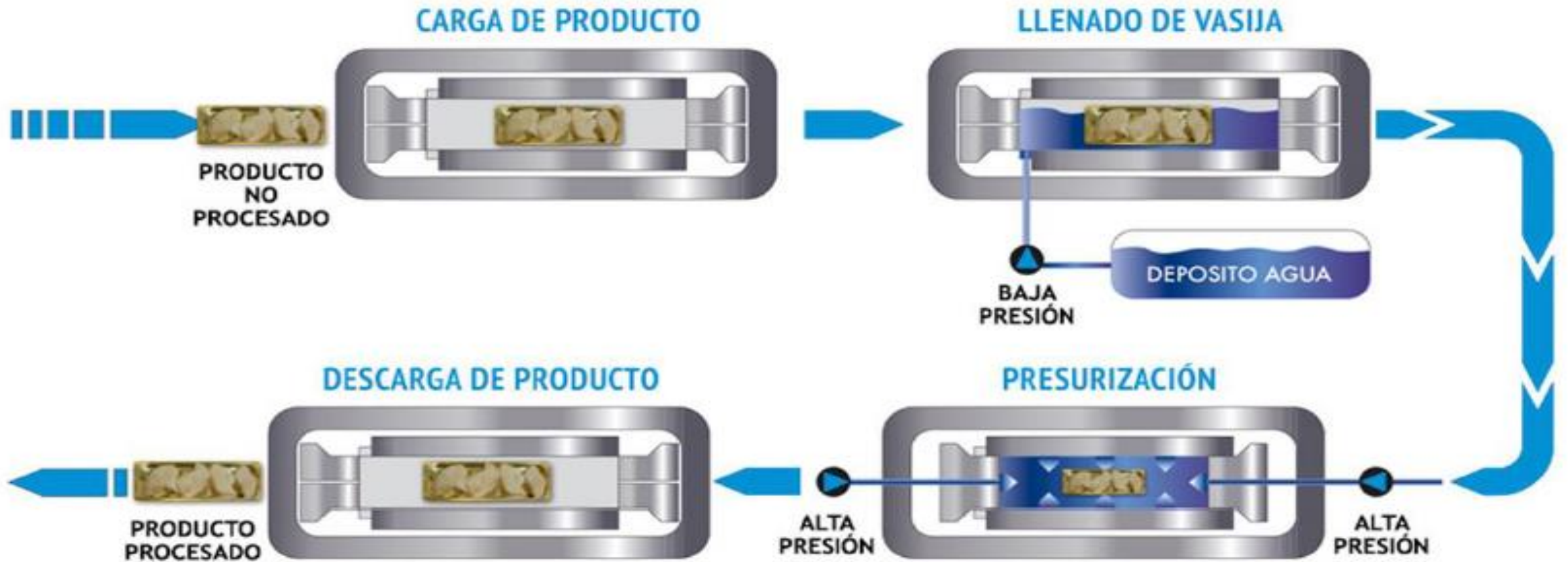
TECNOLOGÍA EN EXPANSIÓN



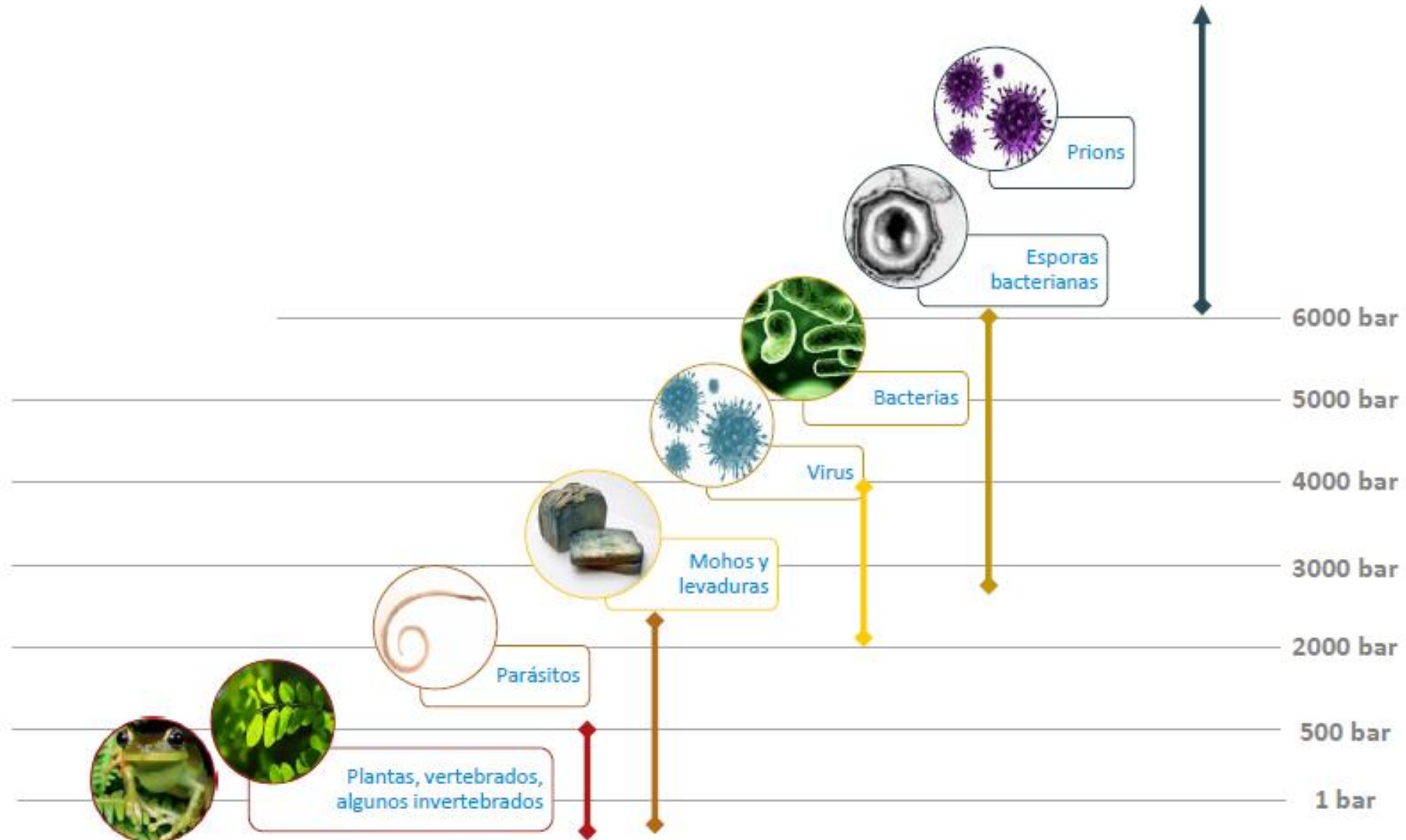
MARKETSANDMARKETS

CAGR of 11.26% from 2016, to reach USD 500.3 Million by 2022.
"[Non-Thermal Processing Market for Food by Technology \(HPP, PEF, Irradiation, Ultrasound, Cold Plasma\)---](#)", The non-thermal processing market is estimated to be valued at USD 818.6 Million in 2017 and is projected to reach USD **1,224.2 Million by 2022, at a**

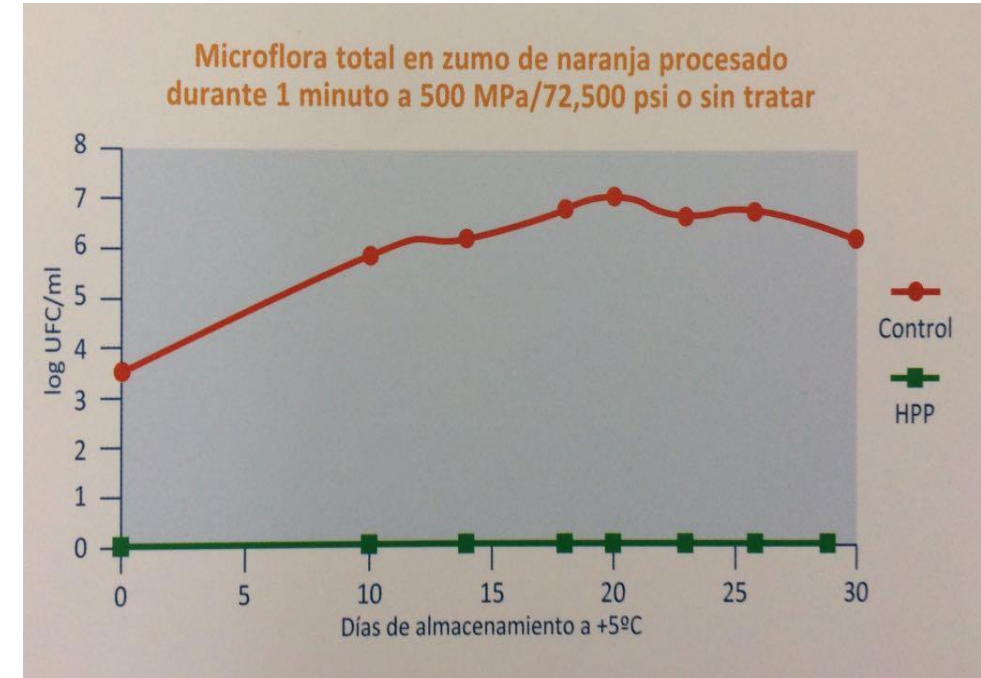
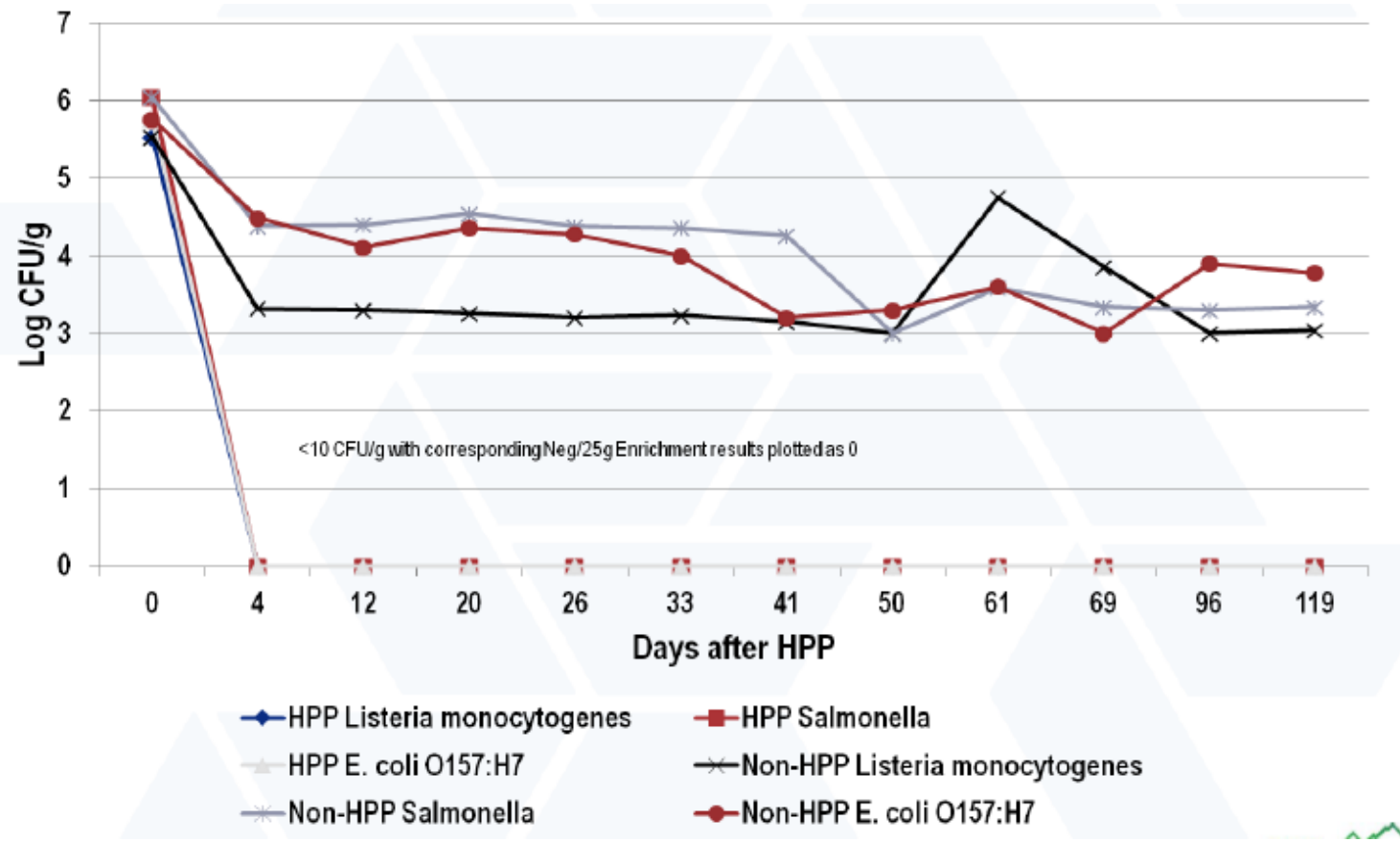
FUNCIONAMIENTO DEL EQUIPO



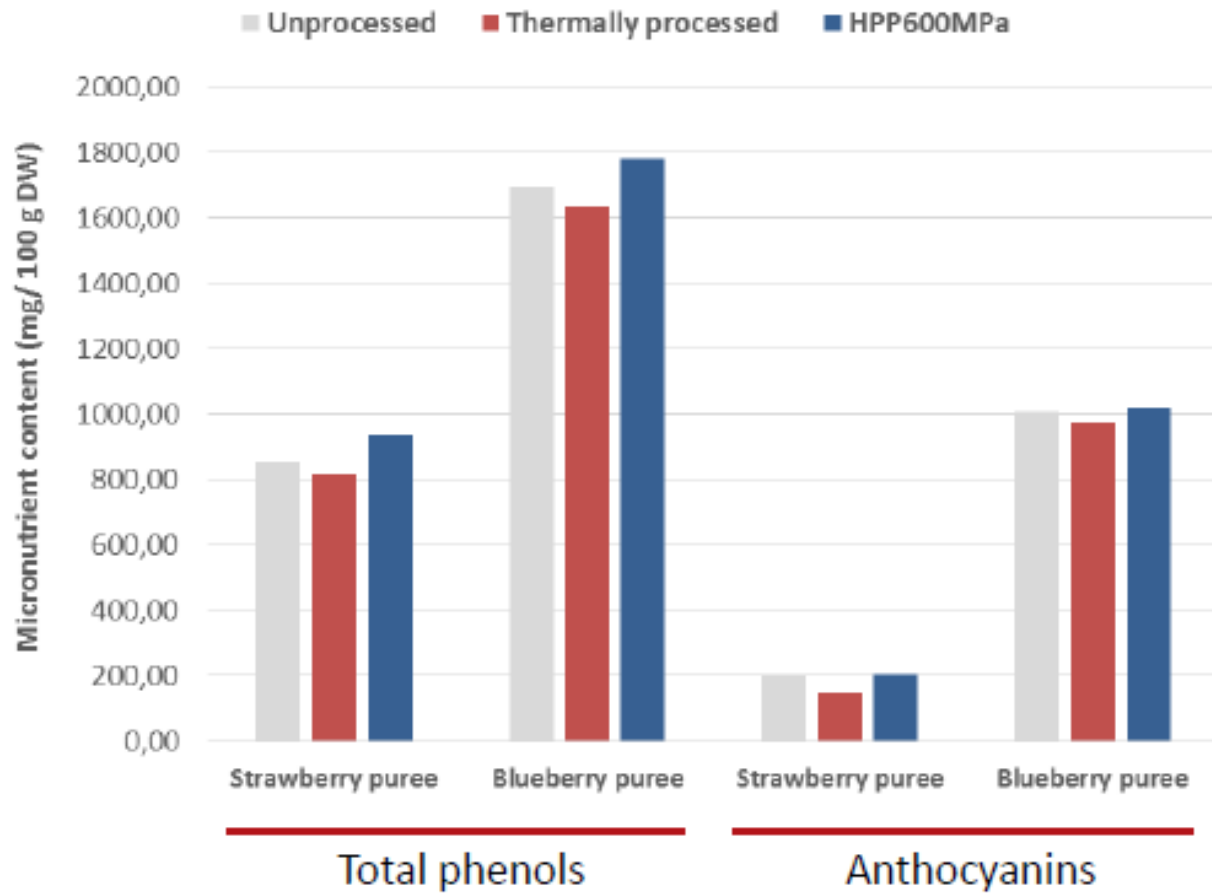
RESISTENCIA A LAS HPP



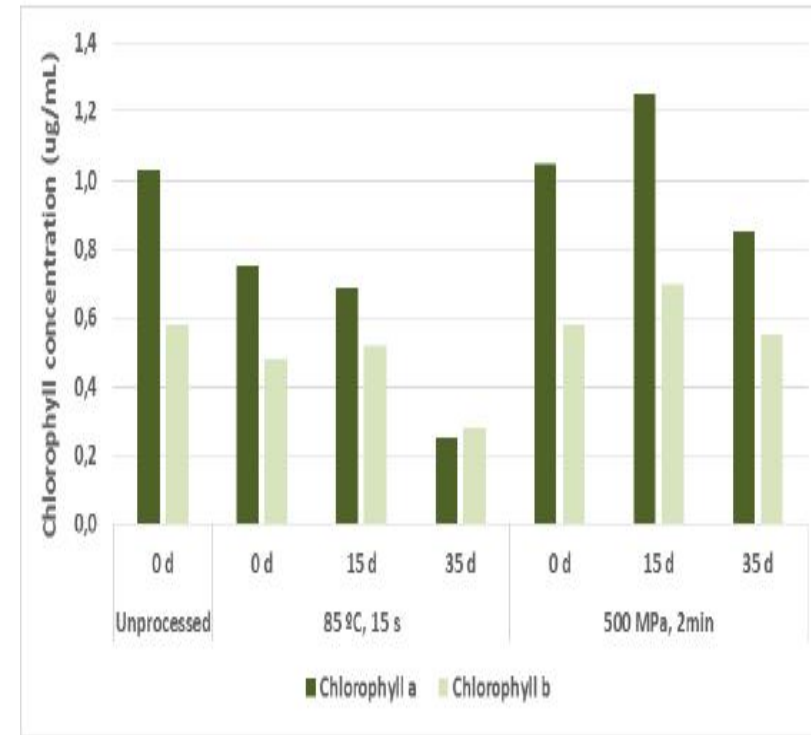
EFFECTOS DEL HPP EN ROAST BEEF Y JUGOS



CALIDAD NUTRICIONAL??



From Patras et al. (2009)

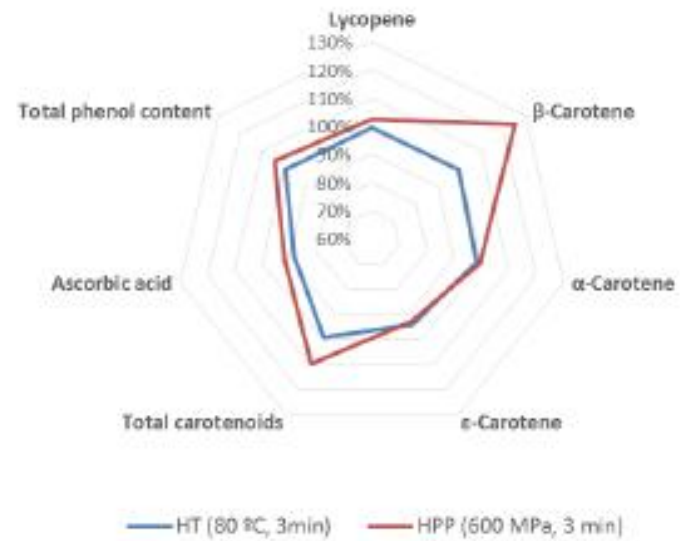


From: Zhao et al. (2013)

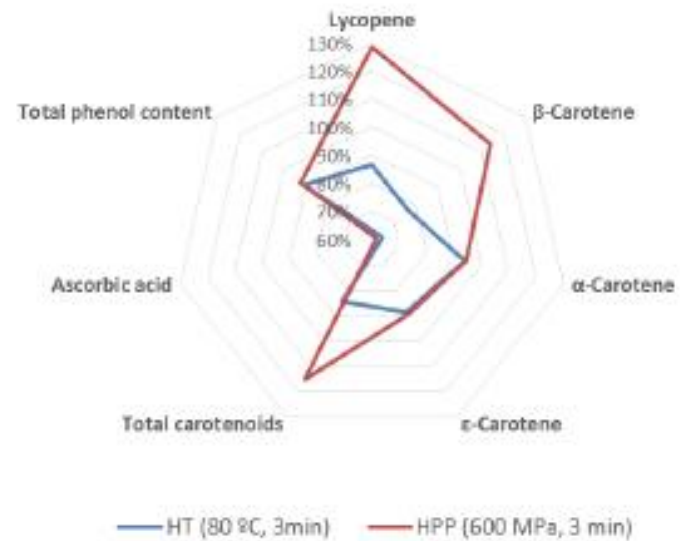


CALIDAD NUTRICIONAL

Day 0



Day 45



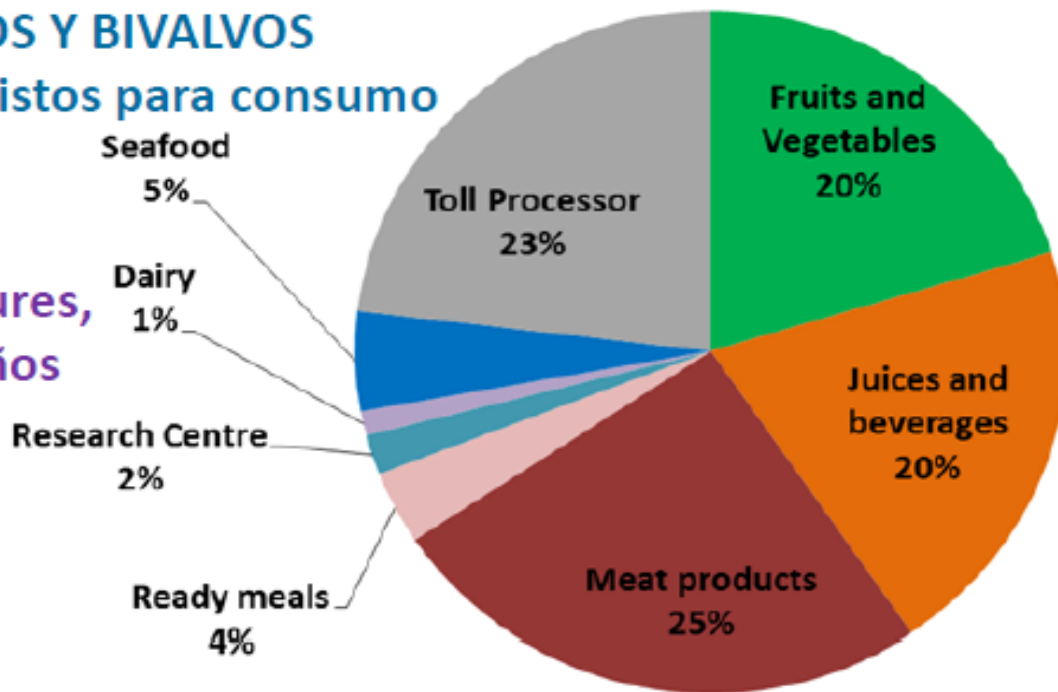
From: Andres et al. (2016)

DÓNDE SE APLICA

Apertura de
CRUSTÁCEOS Y BIVALVOS
Productos listos para consumo

QUESOS
Leche, yogures,
salsas y aliños

COMIDAS PREPARADAS
A base de carne, cereales, vegetales



GUACAMOLE
Salsas y dips
Purés de frutas
Alimentos infantiles

JUGOS
de frutas y verduras
Leches vegetales
Bebidas de café, té,
chocolate

CECINAS REBANADAS
Cárnicos curados
y otros productos listos para consumo
Cárnicos crudos y alimentación de mascotas

2017: +1200 millones de kg de productos en el mundo
Zumos HPP y bebidas sector que más rápido crece

Petfood
Industry
.com

Home » Using HPP to produce clean-label raw pet foods

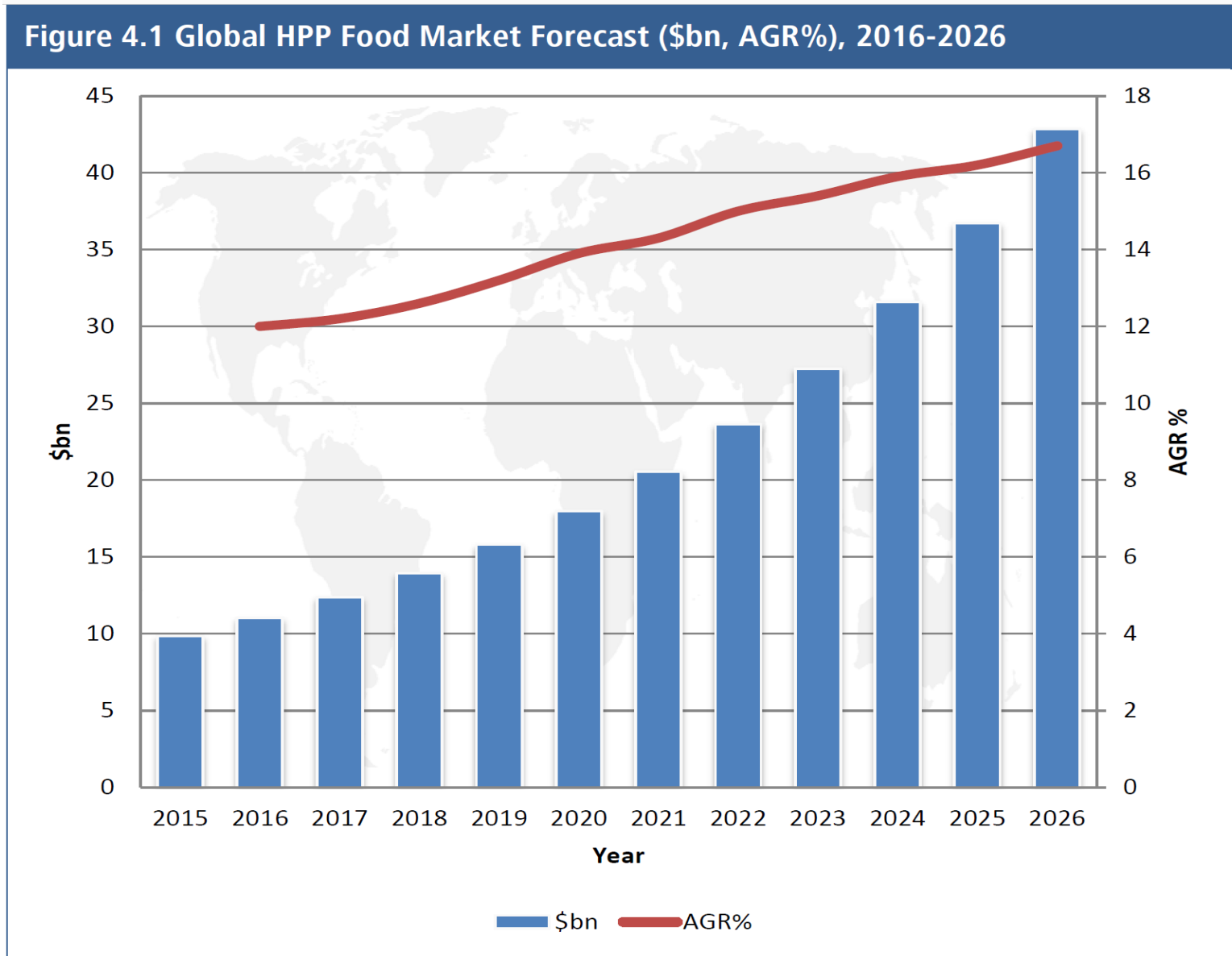
PET FOOD PROCESSING / PET FOOD NEWS / PETFOOD FORUM NEWS / PET FOOD SAFETY

BY ALYSSA CONWAY ON APRIL 25, 2018

Using HPP to produce clean-label raw pet foods

High-pressure processing is an effective method for creating a safe, healthy raw pet food and can help pet food companies avoid recalls to protect their reputations.

FRESH
BUSINESS PERÚ
FOOD & NUTRITION INNOVATION



Source: *visiongain 2016*



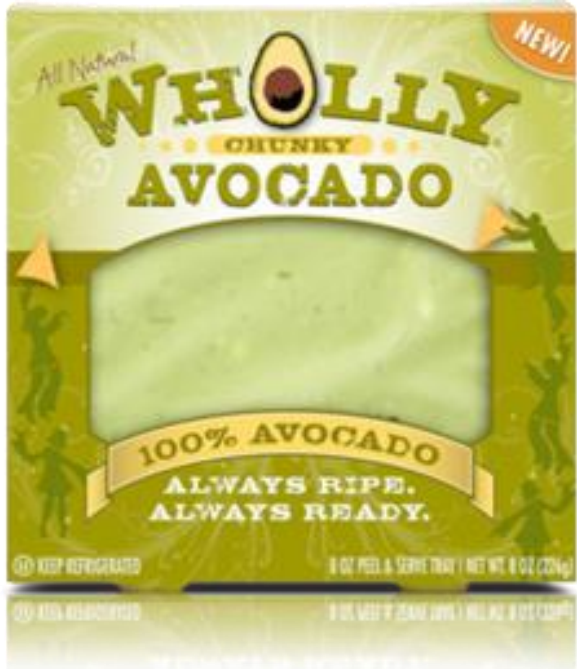
BEBIDAS



SOPAS



PALTA



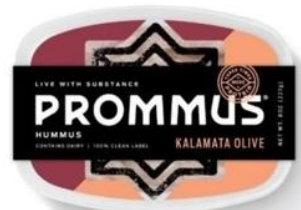
COLD PRESSED

NO HEAT TREATING KEEPS THE FLAVOUR FRESH!

- NO ARTIFICIAL FLAVOURS OR COLOURS
- NO ARTIFICIAL PRESERVATIVES
- CHOLESTEROL FREE
- GLUTEN FREE
- RIFE AND RIPE



PLATOS PREPARADOS



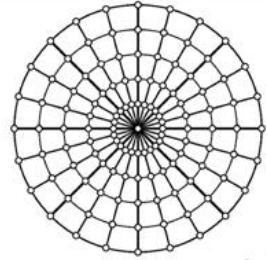
PESCADO Y MARISCOS



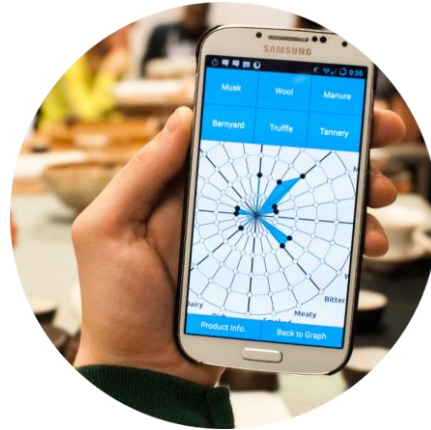
Fresh Fish

OTRAS FOODTECH

INTELIGENCIA ARTIFICIAL Y REALIDAD AUMENTADA



Gastrograph®
What are you tasting?™



FRESH BUSINESS PERÚ
FOOD & NUTRITION INNOVATION

SOSTENIBILIDAD & ECONOMÍA CIRCULAR



743423

SLICES OF BREAD
UPCYCLED

263751

LITRES OF BEER
BREWED

12122

£ DONATED TO CHARITY

6

COUNTRIES BREWING



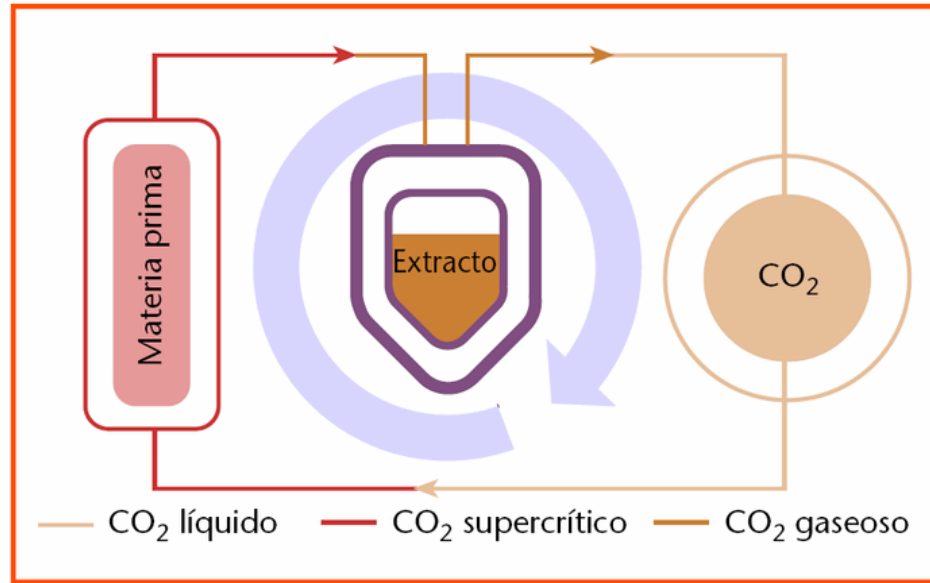
The four flavors are:

- from **rescued veggie puree**
- chicken carrot-curry
- chicken celery-mojo

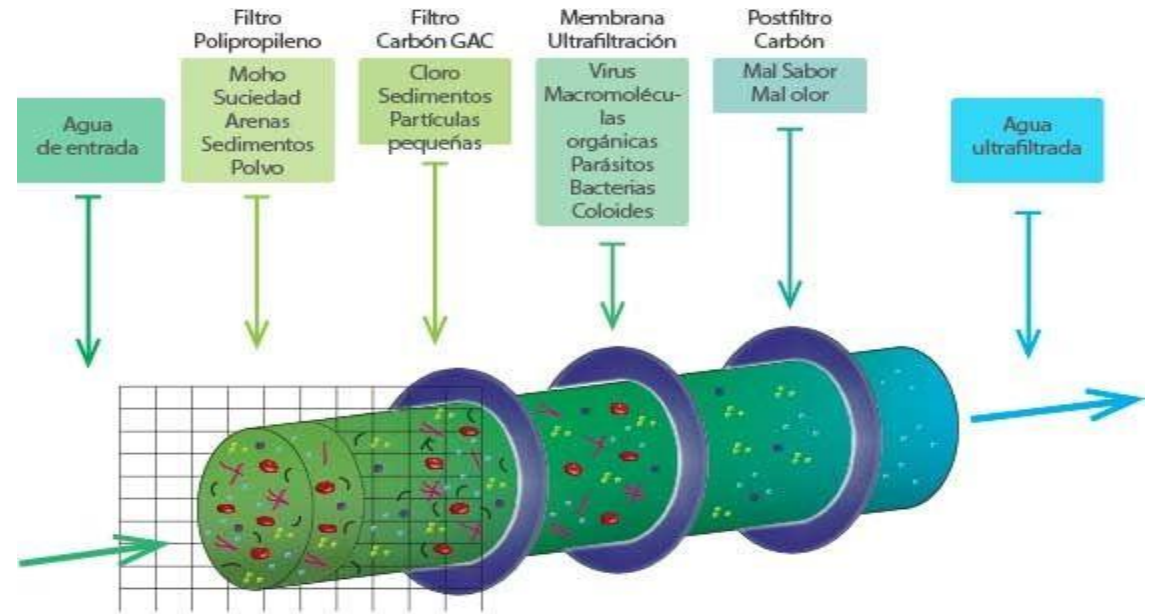
The flavors using **rescued spent grain** are:

- chicken IPA (India pale ale) white cheddar
- Chicken-shandy beer

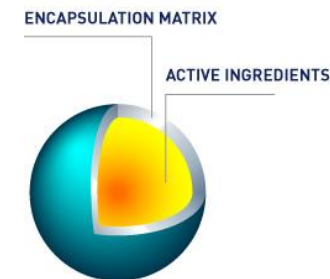
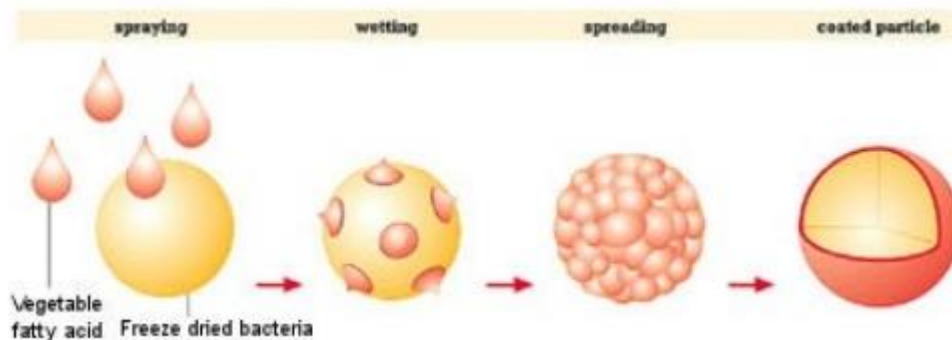
OBTENCIÓN DE INGREDIENTES/COMPUESTOS BIOACTIVOS



Fluidos SUPERCRITICOS



Ultrafiltración



Nanotecnología y Microencapsulación

RECETA PARA INNOVAR

Ingredientes:

1 1/2 tazas de MOTIVACIÓN y DETERMINACIÓN

500 grs. De CURIOSIDAD INTENSA

1Kg de ACTITUD POSITIVA

Decoracion

Trabajo en EQUIPO "al gusto"

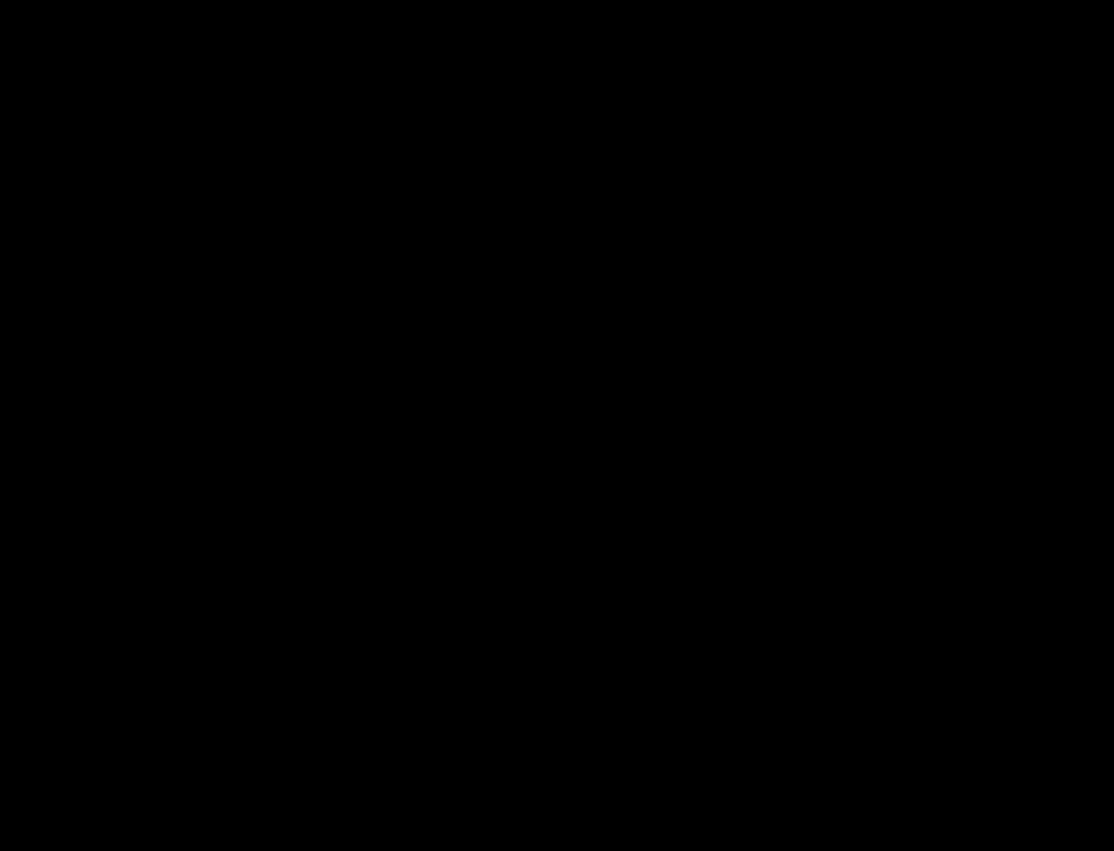
Preparación

3 Cucharadas de VALENTÍA





¿FUTURO O PRESENTE?



<https://www.youtube.com/watch?v=J4dyrZnV-98>



<https://www.youtube.com/watch?v=NfZFUHQKjw>

¿FUTURO O PRESENTE?

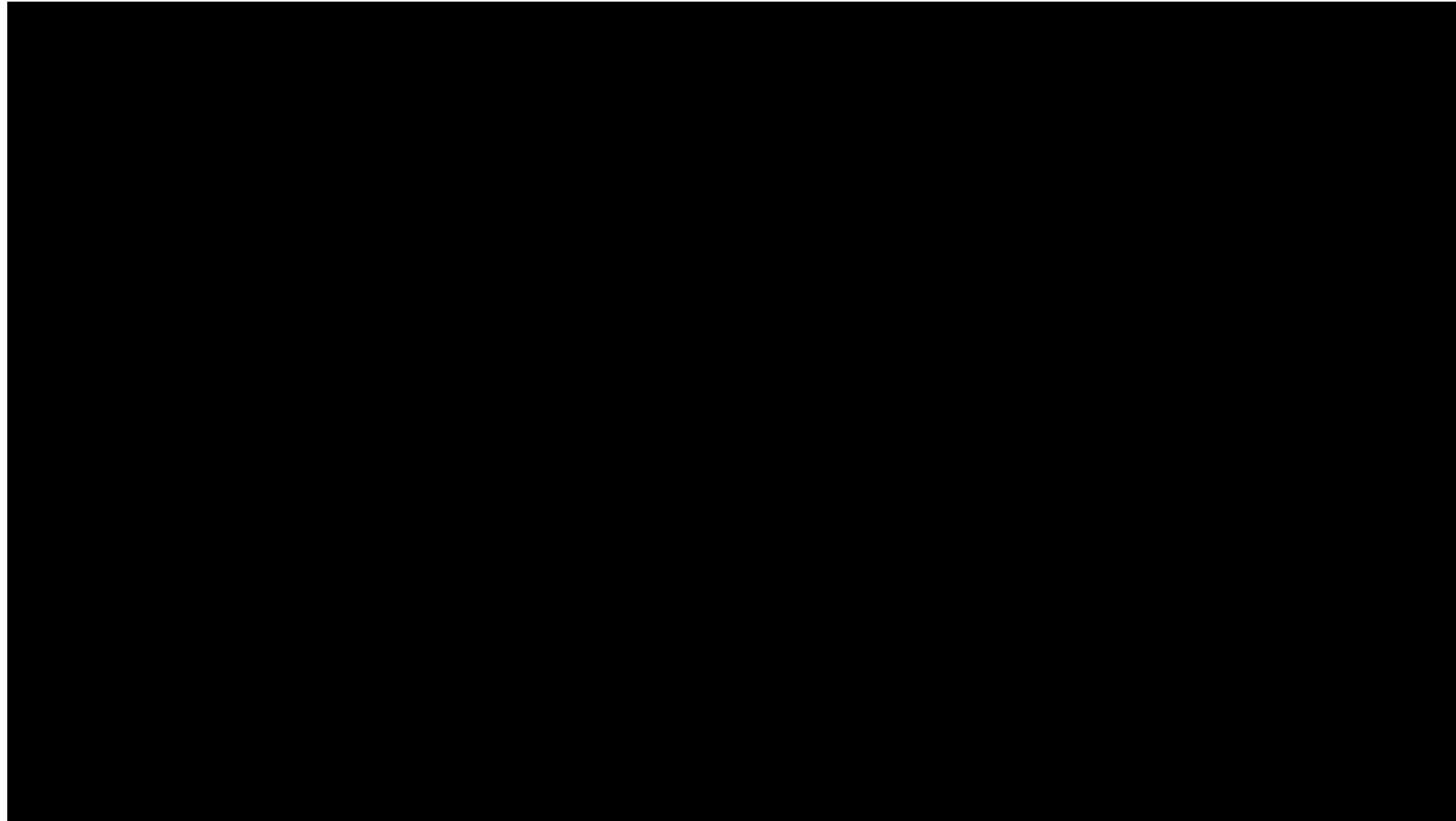


https://www.youtube.com/watch?v=xk9hNin_sag&t=70s



<https://www.youtube.com/watch?v=gpNS6h7toxU>

¿FUTURO O PRESENTE?



<https://vimeo.com/280127769?from=outrio-embed>

GRACIAS

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