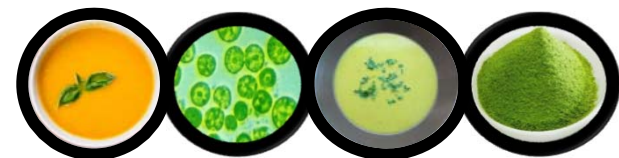


# ***Microalgae in bakery products***

**Laia Alemany Costa**

**R&D Department**

**[Laia.alemany@vickyfoods.es](mailto:Laia.alemany@vickyfoods.es)**





**VICKY**  
FOODS

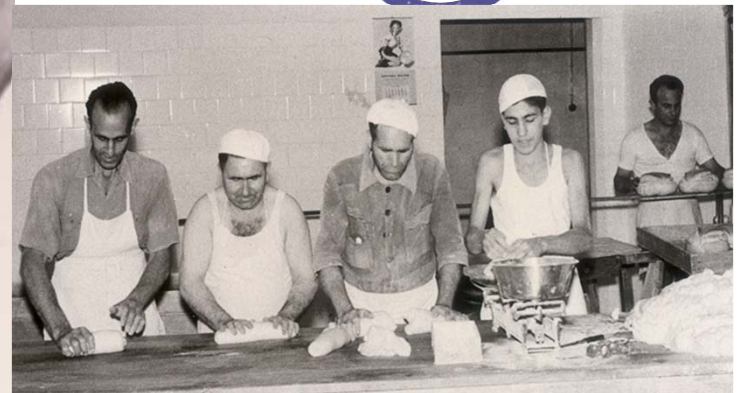
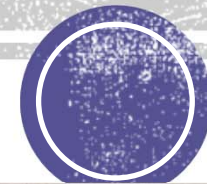
**be plus<sup>®</sup>**  
NATURAL LIFESTYLE

**Dulcesol**





**100%**  
**family**  
**company**





## GANDIA



- ❖ **Products:** Croissants, petit pain, sliced bread, milk bread, brioches, anise cake, muffins, burger bread, hot dog bread.
- ❖ **Production lines:** 15

## VILLALONGA



- ❖ **Products:** Different kind of Muffins, biscuits, cakes like apple cake, fried donuts, toasted bread chocolate creams, infant food, prepared dishes for adults and sliced bread.
- ❖ **Production lines:** 20

## ARGELIA



- ❖ **Products:** Muffins and cakes for the local market
- ❖ **Production lines:** 3





## FARM



- Fowls in 2019: + 400.000
- Production: 9.000 Tm liquid egg.
- 95% of the needs.



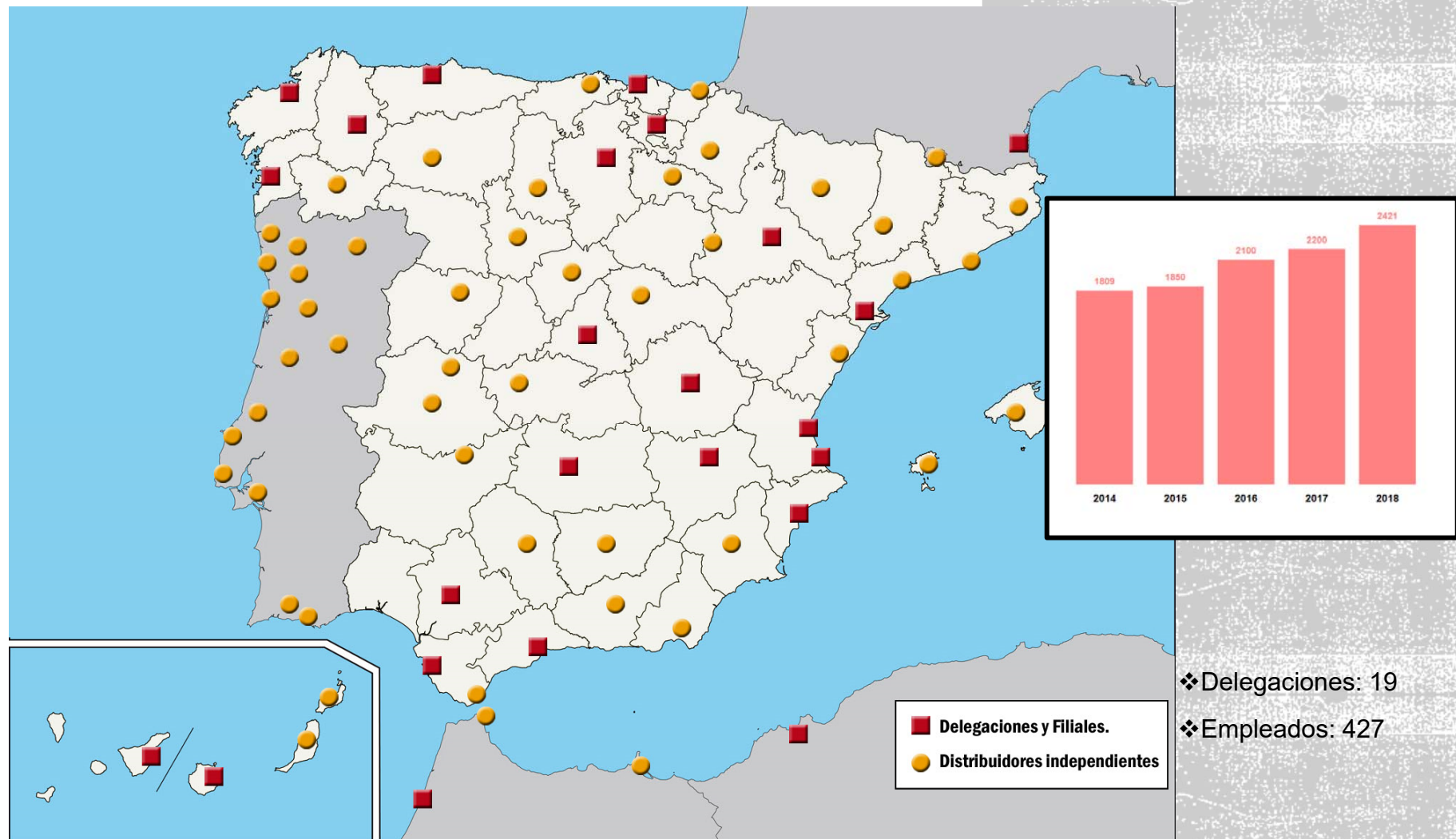
## DUCPLAST



- Plant of printing plastic for packaging.
- 3 printing machines
- It produces about 90% of the material used in the bakery-bread factory.
- Employees: 46
- Producción 2019: 3000 Tm .

06/02/2020

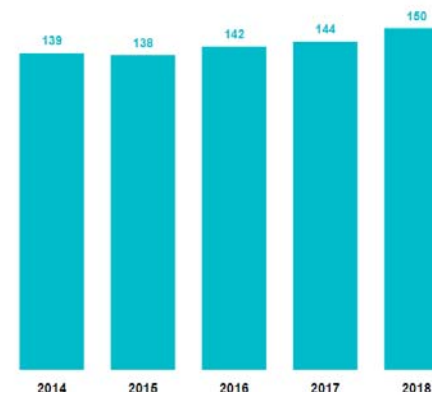
## DISTRIBUTION NETWORK IN SPAIN & PORTUGAL



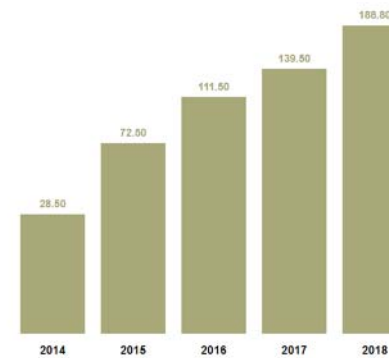


# Some numbers

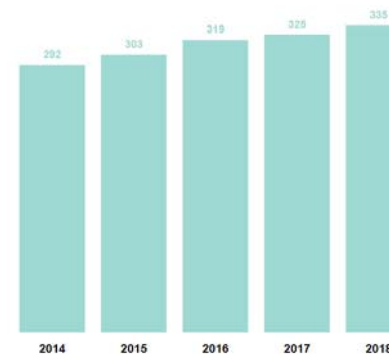
**Tons produced**



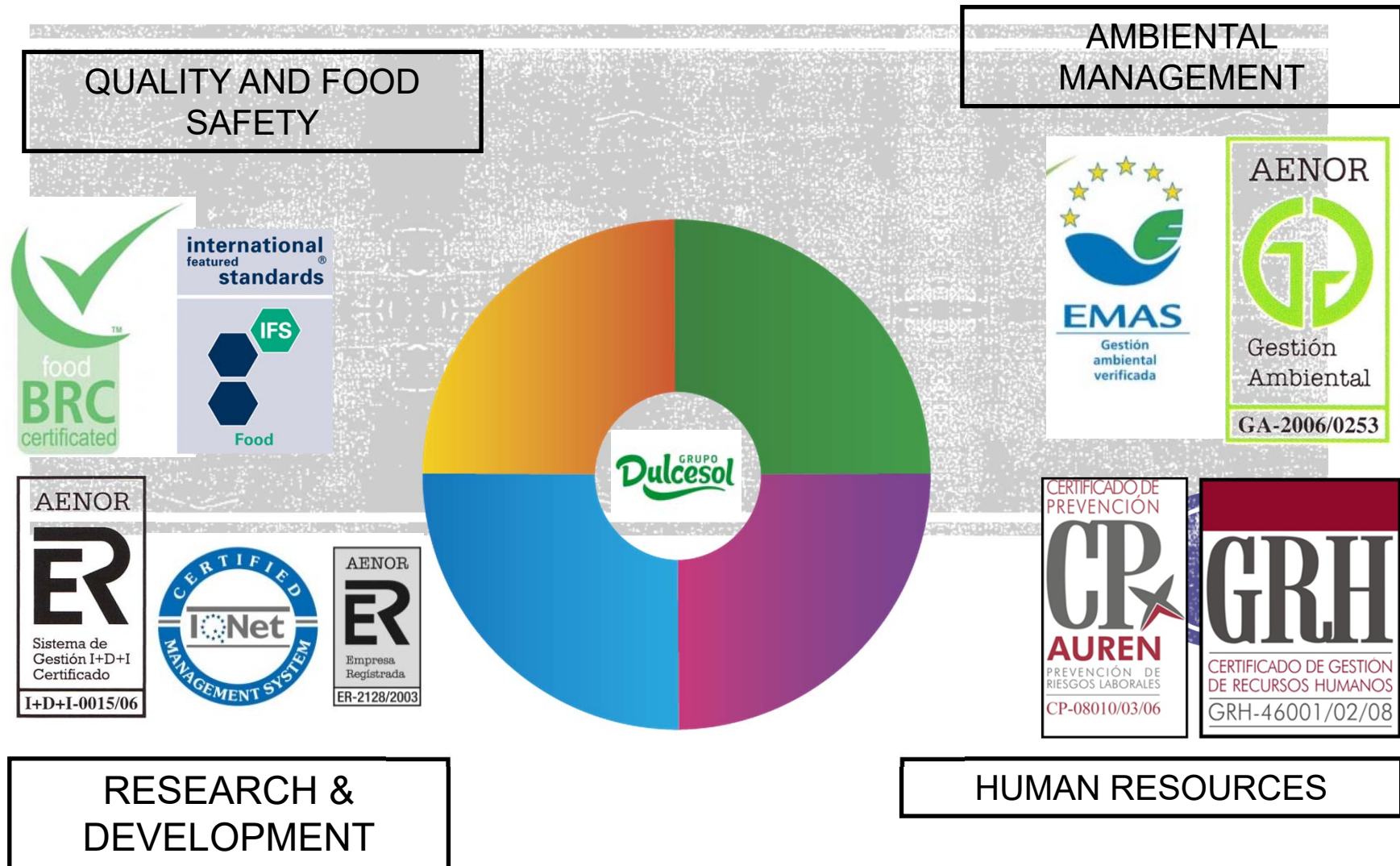
**Investments**



**Total sales**



# *Integrated management system*





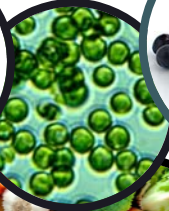
# Our products



06/02/2020



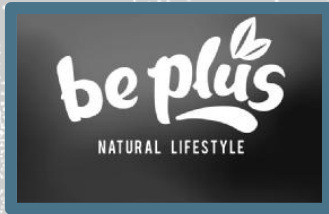
# Trends



06/02/2020



# New developments



# Background



Creation of  
Innovation,  
Nutrition and  
Health Center  
of Dulcesol  
(CINS)



06/02/2020

12



# Main axes of CINS



## HEALTH

MOTIVATE SCIENTIFIC  
RESEARCH FOR NUTRITIONAL  
IMPROVEMENT



## COMPOSITION

NUTRITIONAL IMPROVEMENT  
IN PRODUCTS

## LIFESTYLE

ENCOURAGE HEALTHY  
HABITS IN CONSUMERS



06/02/2020

13



# R&D projects

- ❑ ROBOTIC INSTRUMENT FOR PACKAGING
- ❑ DEVELOPMENT FUNCTIONAL PRODUCTS
- ❑ INTELLIGENT PACKAGING DESIGN
- ❑ CREATION OF A SIMULATED 3D-PRINTER
- ❑ USE OF MICROALGAE IN BAKERY PRODUCTS

06/02/2020

14







# ***Microalgae in bakery products***

15

06/02/2020

# Microalgae



## What?

- microscopic and photosynthetic organisms
- Autotrophic, heterotrophic (C, N, P, K, Mg,  $\mu$ nutrients)
- **Biomass generation. Uses**  
Energetic (biodiesel, bioethanol, biomethan...), human consumption, animal feed, PUFA/ $\omega$ 3-6 extraction, cosmetics, fertilisers..



## Benefits

- Vegetal proteins. High nutritional value.
- PUFA  $\omega$ -3
- Antioxidants, pigments, minerals, vitamins
- Influence in immune system



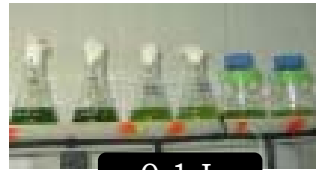
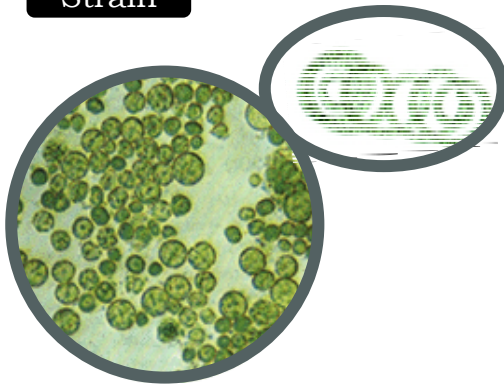


# Microalgae



Scale up

Strain



0.1 L



1.5 L



100 L



5 L



1200 L

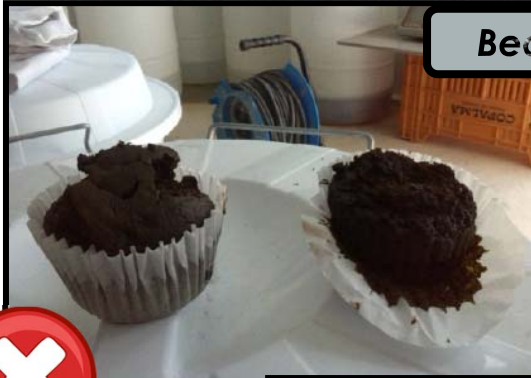


Final product

# Microalgae



Initial tests on formulations



Beaten dough



Fermented dough



New developments. Laboratory scale





# Microalgae

Biomass



Muffins



Sweet creams



Manjú



Crackers



Pain au chocolat



# Microalgae

Milk bread



Croissant



Bread





# Microalgae

Cakes



Biscuits



Macarons



Toast bread



# Microalgae

Biscuits



Cookies



Vegetables creams



Cacao muffin



Toasted bread



Peach biscuit



Smoothies





# Vickyfoods Group



[Laia.alemany@vickyfoods.es](mailto:Laia.alemany@vickyfoods.es)



06/02/2020