



# Beyond encapsulation: Acids in tortillas

Gemma Marin  
R&D department

Borja del Real  
Technical Sales Representative



GMO  
FREE



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# Tortilla's quality

## Key factors

### Rollability

flexible and fold easily  
without breaking

### Roundness

symmetric shape, with  
minimal deviations or  
irregularities in its perimeter

### Opacity

some consumers associate  
higher opacity with a more  
substantial, higher-quality  
product

### No stickiness

tortilla with little to no stickiness  
is easier to handle and use

### Shelf life

longer shelf life are more desirable for retailers and  
customers, but without compromising on quality

# ACIDULANTS play a key role in PRESERVATION

✓ Retaining freshness

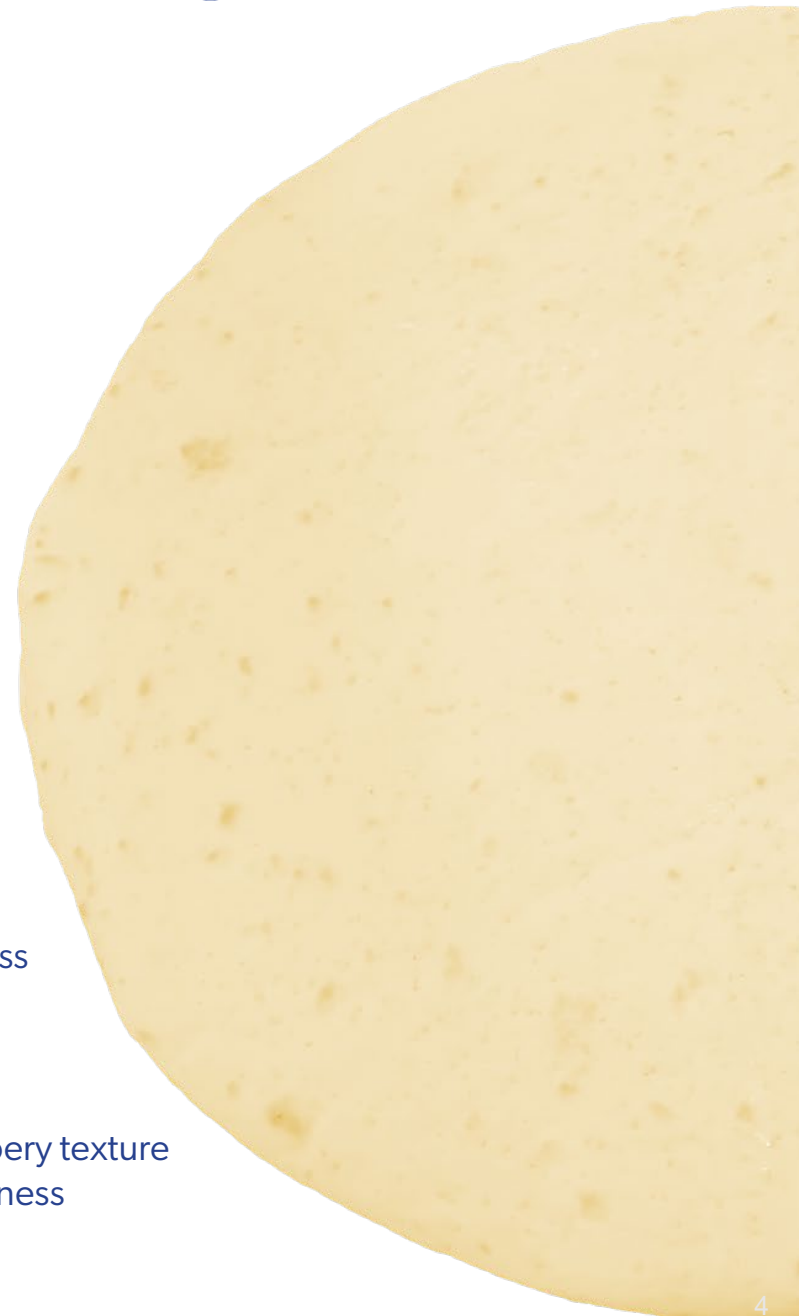
✓ Enhancing flavor

✓ Preserving texture

✗ Dryness

✗ Excess sourness

✗ Tough or rubbery texture  
Reduced puffiness



# Tortilla's quality

Interaction with other ingredients

Acidulants can interact with a variety of ingredients in tortillas. These interactions can affect the quality of the final product, including its texture, flavour, colour and shelf life.

Leavening agents

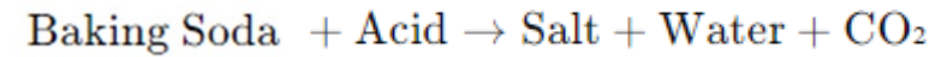
Starch

Gluten

Preservatives

Sugar

# Leavening agents



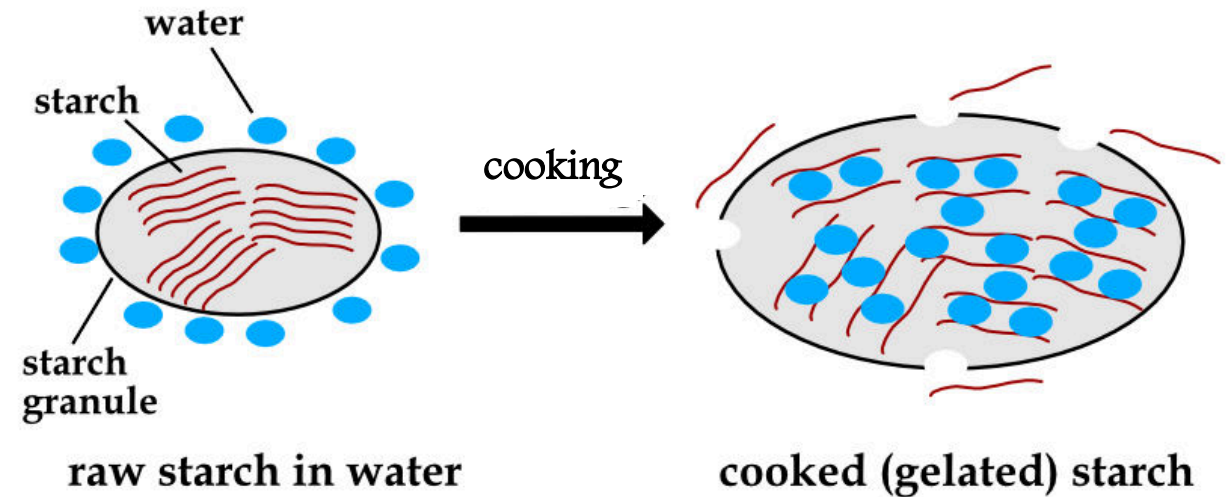
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The reaction of acidulants with baking soda can happen too early, during mixing or dough resting, which can lead to loss of gas and a dense, flat product.

# Starch

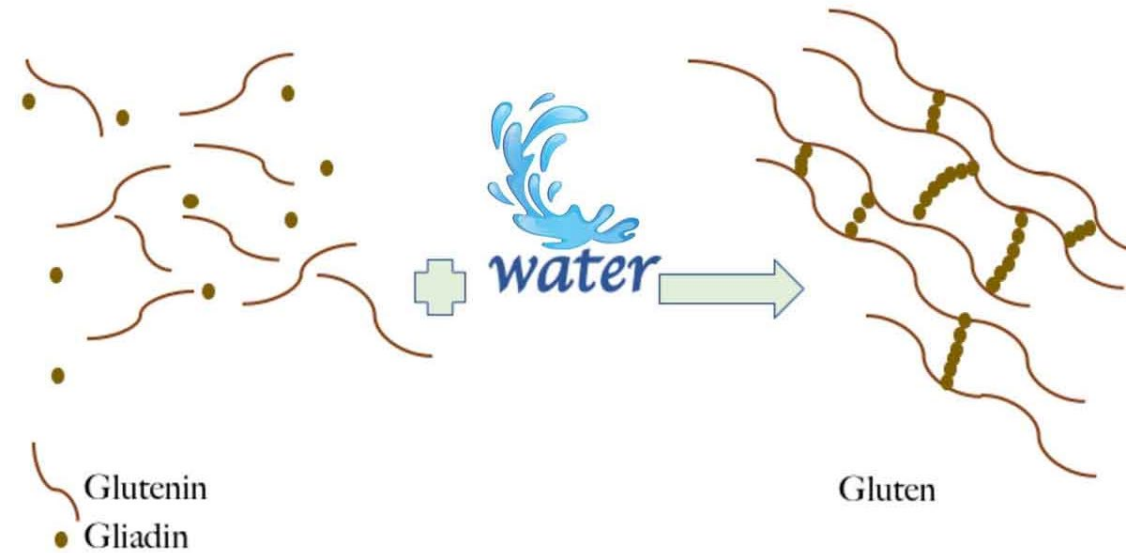
Organic acids can affect the gelatinization and retrogradation of starch during tortilla production. During gelatinization, starch granules absorb water and swell. Acidulants can reduce this water absorption leading to incomplete gelatinization.

## Starch gelatinization



# Gluten

The acidic environment can tighten the gluten network, making the dough more elastic and cohesive. However, excessive acidity can weaken the gluten structure, leading to a tougher or less elastic tortilla.





# Preservatives

Preservatives are most effective in their acidic form, which allows them to better inhibit the growth of microorganisms and prolong the shelf life of tortillas. Although acids help to activate preservatives, too much acidity can alter the taste and texture of tortillas.



# Sugar

These acids can also affect Maillard reactions during cooking, impacting the tortilla's browning and flavor development. This reaction is crucial for developing flavor, color, and aroma in tortillas.



# Technical Solution

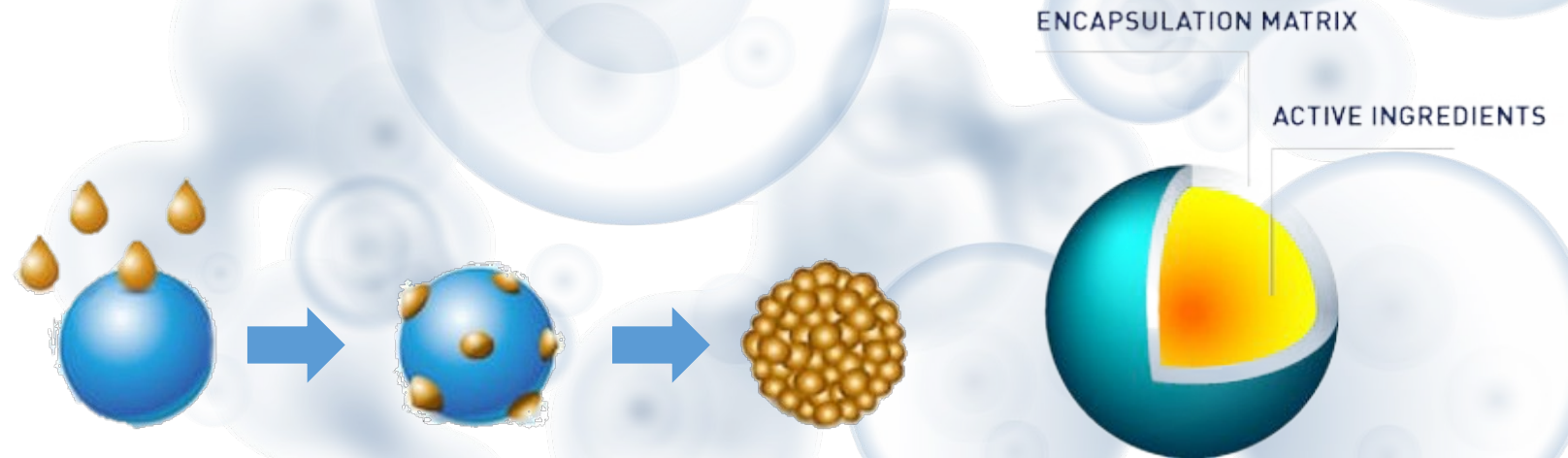


# Encapsulation

# Encapsulation process

The encapsulation protects the acidulant from interacting with other.

The release of the acidulant occurs at a specific moment, allowing the acid to interact at the optimal time.



# BENEFITS of acids encapsulation in Tortillas

- ✓ Prevents unwanted interactions with proteins, starches, or leavening agents
- ✓ Enhances flavor without overly sour notes
- ✓ Maintains dough texture and handling properties
- ✓ Improves shelf life by controlling microbial growth
- ✓ Controlled release of acidulants at optimal moments (e.g., during baking)



# Most common encapsulated acidulants in Tortillas

MIRCAP®-CT

MIRCAP®-ML

MIRCAP®-FM

# MIRCAP® - Personalized solutions for each product

VEDEQSA specializes in the production of microencapsulated products that have a significant impact on enhancing the quality and extending the shelf life of food products. The MIRCAP® range offers various encapsulated products for different applications, including tortillas.

**Different  
encapsulated  
acids with  
MIRCAP®**

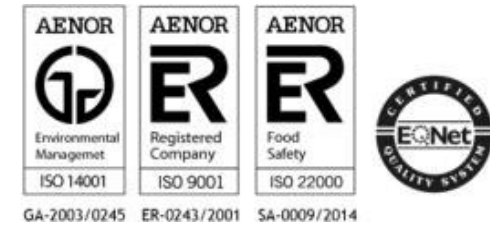
**Usual protective  
coatings includes  
with MIRCAP®**

—  
RSPO PALM OIL

—  
SUNFLOWER OIL

# MIRCAP® - Personalized solutions for each product

VEDEQSA has all the certifies to meet the highest standards.



RSPO

Halal

Kosher

GMO-free

Allergens-free





**THANK YOU**

 **VEDEQSa INC**

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Géminis, 4 Políg. Ind. Can Parellada, 08228  
Terrassa (Barcelona), Spain.

Tel. (+34) 93 731 50 94

[comercial@vedeqsa.com](mailto:comercial@vedeqsa.com)

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201 N. Forest Ave, Suite 220 Independence (MO)  
64050, USA.

C: +1 612 542 7894

[info@vedeqsainc.com](mailto:info@vedeqsainc.com)

[vedeqsa.com](http://vedeqsa.com)

[mircap.com](http://mircap.com)