

# Improvement of Viquipèdia article about food preservatives and creation of new related articles

LAURA MARTÍNEZ ROVIRA - JUNE 2020

## BACKGROUND

Expiration is the leading cause of **waste** in households and in the food industry

## OBJECTIVES

1. To discuss the importance of using food preservatives
2. To publish an objective text about the relation between nitrifying salts and nitrosamines

## 1. CONTEXTUALIZATION

- Food:
  - Excellent substrate for the **development of pathogenic microorganisms**
  - Subject to chemical or biochemical reactions that can **affect** their **nutritional value** and **organoleptic qualities**

→ Preservatives can **prevent** these two circumstances

**DISTRUST:** 30-49%<sup>1</sup> of the Spanish population considers

- Synthetic additives → **suspicious**
- Food containing preservatives → **inferior or unsafe**

Upward trend in demand for **clean label**

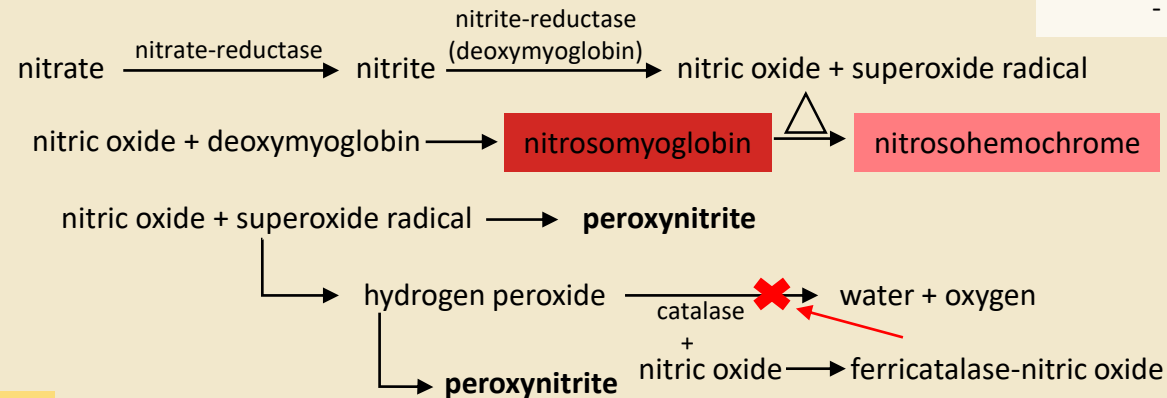
1. Shorter service life
2. Unknown whether food is just as safe
3. Selling price increases

## 2. DISCUSSION

- **Toxicity** of a substance is **not determined by its origin**
- Precautionary principle and risk assessment → **SAFETY**

## 3. PRESERVATIVES

- **Nitrifying salts**



### Nitrosamines:

- $\uparrow\uparrow$  [nitrites]    -  $\uparrow$  temperature } nitrosamines formation
- Amines or amides    - pH  $\downarrow$
- Evidence between the relation of nitrosamines, meat and cancer
- **No evidence between nitrifying salts and cancer** (or low effects) → Group 2A (IARC)<sup>2</sup>
- Antioxidants inhibit the nitrosamines formation

## - Preservatives produced by microorganisms

1. Bacteriocins: **X** G+ bacteria  
**Nisin (E 234)**
  - Cheese, meat, canned products, desserts that include flours, sugar and creams
  - Active packaging
  - $\downarrow$  use of sulfites in wine

## 2. Natamycin (E 235):

- X** fungi → surface treatment
- **EU countries:** cheese or dried cured cold meat
- Some **non-EU countries:** purees, fruit juices and bakery products

## CONCLUSIONS

1. It could be a great idea to study closely about the application of nisin and natamycin in other products. It would be a possible alternative for companies that want to bet on use of natural preservatives
2. For now, nitrifying salts have more advantages than disadvantages. It is highly necessary to disseminate unbiased information about the use of preservatives to avoid public distrust

<sup>1</sup> European Food Safety Authority (2019). *Food safety in the EU*. DOI: 10.2805/661752

<sup>2</sup> Coglianò et al. *Preventable exposures associated with human cancers*. JNCI. DOI: 10.1093/jnci/djr483