

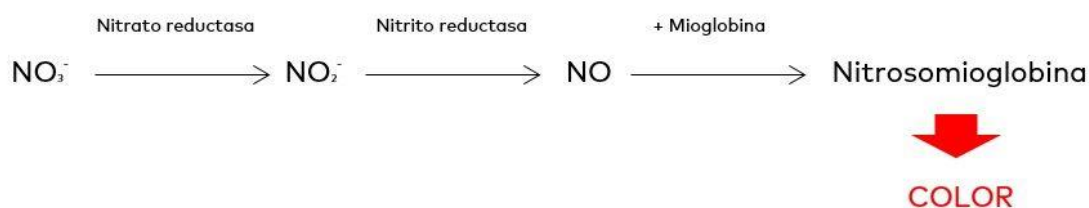
Withdrawal and replacement of nitrites with natural preservatives

In the food industry there are several sectors in which the chemical additives nitrates and nitrites are commonly used. In the meat or fish sector, for example, nitrates and nitrites are considered necessary to carry out the nitrification process that gives a characteristic colour to the final product as well as protection against anaerobic pathogens and sporogens.

Below we explain why nitrites are used in feed and introduce you to Amerex's specialist product for the natural replacement of nitrites: Biamex NC.

What is the nitrification process of nitrites?

In the nitrification process, nitrate is reduced to nitrite, from which nitric oxide is produced. Nitric oxide combines with muscle myoglobin to form nitrosomyoglobin, which is responsible for the typical colour of cured meats, e.g. in the meat industry. In the case of cooked meats, the temperature causes this nitrosomyoglobin to be transformed into nitrosylhaemochrome, which is responsible for the characteristic pink colour.



Why have nitrites been considered technologically necessary in the food industry?

Nitrates and nitrites have been considered necessary in the food sector, in addition to the generation of colour that they provide to food, making it more attractive to consumers, because they guarantee certain safety in products by preventing the development of pathogenic bacteria, specifically *Clostridium botulinum*, which causes the well-known botulism disease.

Like any other additive, nitrites are regulated by [Annex II of Regulation \(EC\) No 1333/2008](#) of the European Parliament and of the Council and the Annex to Commission Regulation (EU) No 231/2012. It regulates the maximum dose that can be incorporated in each foodstuff under a [specific legislation](#).

Why is nitrite substitution being pursued in different food sectors?

There is increasing talk of replacing nitrites with other types of natural preservatives and of regulating more strictly the permitted dosage in the various foods in which they are used.

The problem is that, although nitrates occur naturally, for example in various vegetables (e.g. lettuce, celery) or even in water, some of them are converted into nitrites during the digestion process, reacting with amino acids in the

stomach and giving rise to nitrosamines, which are carcinogenic substances. In the case of foodstuffs from the above-mentioned sectors they are found directly in the form of nitrites. For this reason it is important to find substitutes that avoid the presence of these additives in products that we normally consume.

What nitrite substitutes are available on the market and what does Amerex offer?

There are many natural substitutes for nitrites on the market. As mentioned above, they are found naturally in vegetables such as lettuce and celery, and some companies use natural extracts of this type. We must not forget also the risk of sporogen poisoning that can be caused by poor nitrite substitution.

In our case, we have a transparent natural technology for nitrite substitution: the use of starters.

Our product [Biamex NC](#), has a very innovative technology for the generation of the typical colour that nitrifiers would provide. In this way, thanks to a fixation reaction of the meat/fish protein itself, you can achieve an optimum replacement of nitrates, nitrites and/or nitro salts. In addition, this product incorporates another of our strains of ferments specialised in the action against sporogens such as clostridium botulinum.

In which products can Amerex nitrite substitute Biamex NC be used?

Biamex NC, as a nitrite substitute, can be applied in any food where a substitution of this chemical additive is necessary.

It is very common to substitute nitrites in meat products as we have mentioned above. Here is an example of injected turkey:



Another food where the use of nitrites is also common is in various fish. Biamex NC also has experience with this type of food. Here is a test on injected swordfish:



In conclusion, we can state that the use of starters is a very good alternative to nitrites, in particular the use of the Amerex Biamex NC product, as it significantly reduces the appearance of this colour in meat and fish products. In addition, this product includes Amerex's protective technology to maintain product safety equivalent to the protection provided by nitrites.

Would you like more information about this star crop? You can contact us for a closer and more personalised advice through:

- You can write us an email to: imasd@amereXingredientes.com
- Call us on: +34 91 845 42 14
- Fill in the form below

See you neXt time!