

KNOW WHAT'S IN (Y)OUR SAUSAGE

Have you ever read the ingredients on the back of a food product and been confused about what exactly it is you're eating? We understand that feeling! Here at Valbella, we strive to be open and honest about ALL the ingredients that we put into our products and we also want to educate our consumers so that you can make the best decision for you and your family.

At Valbella Gourmet Foods, our goal is to use the lowest amount of food additives possible while using the required amount deemed necessary by the Canadian Food Inspection Agency (CFIA) in order to produce a safe and delicious product. Think about this, salt, sugar and vinegar are food additives and preservatives that have been used for thousands of years, so let's start by clarifying some things.

❖ What are food additives and why do we use them

Food additives, in general, are substances added to food for three reasons:

- to enhance flavor
- to change or keep the natural appearance
- to preserve in order to extend the shelf life and to make shelf stable without refrigeration

At Valbella Gourmet Foods the main purpose of using food additives is preservation (e.g. antibacterial effects of nitrate), followed by appearance (e.g. keeping the red color in cured meats).

Some additives like salt, sugar, vinegar and alcohol have been used for centuries in kitchens around the world. With the advent of more processed foods in the second half of the twentieth century, many more substances have been introduced. Many of those newer additives were only used by food producers and did not find their way into private kitchen pantries. So it's a good thing to keep in mind that cooking a family meal and producing food on a bigger scale, have different requirements (e.g. taste, quality or safety standards) even though it might be the same dish.

The CFIA defines which substances are safe to use and regulates the maximum and minimum levels. Their role is to both protect consumers from food borne illness but at the same time ensuring that maximum amounts of additives are not surpassed.

For more information visit [Food Additives - CFIA](#)

❖ Some food additives – where they come from and what they do

1. Starter cultures

On the ingredients list of Landjaeger and Chimney sticks you'll find "bacterial and yeast culture". As the name suggests it is a mix of bacteria and yeast that protect the sausages from bad micro-organisms. They eat sugar, like dextrose, and produce lactic acid so the environment inside the sausage gets too acidic for other micro-organisms to survive and multiply. Those little guys are therefore very important in order to make safe and shelf stable dry-cured sausages.

2. Sodium nitrate / nitrite

Before we look at Sodium nitrate/nitrite we should talk about curing first as those two things go hand in hand.

2.1. Curing

Curing is an old and traditional form of food preservation by the addition of combinations of salt, nitrates, nitrites and sugar with the aim of drawing moisture out of the meat. The art of curing meat can be traced back to antiquity and was the primary way of preserving meat until the late 19th century. Curing was mainly developed to prevent disease and increase food security when there was no refrigeration, but nowadays it's also practiced for color and taste.

There are several quality benefits of curing with nitrates for the manufacturer as well as public health.

- Color: Meat preserved only in salt will lose its red/pink color over time and turn grey. Nitrites develop and retain the meats natural color and give cured meats the red or pink color that is associated with them.
- Flavor: The addition of nitrites also imparts a certain flavor to the product, which is expected by consumers to be present in cured meats.
- Antioxidants: Antioxidants prevent the fat molecules from turning rancid and creating an undesirable flavor/odor.
- Food safety: Nitrates inhibit the growth of pathogens such as *Clostridium botulinum*, *Listeria monocytogenes* and many more. Together with salt, nitrates make cured meats safe to eat and help prevent foodborne poisoning such as botulism. Untreated meat decomposes rapidly and cannot be kept at room temperature in excess of a few days without spoiling. Therefore curing is especially important for the safe production of air dried meats.

The food safety benefit of nitrates in cured meat is of such importance that we as manufacturers are required by the Government of Canada to add them. So without nitrates there is no curing.

2.2. Nitrite source and transformation

Nitrate and nitrite naturally exist everywhere in our environment. The highest levels of nitrate can be found in green leafy vegetables, celery, beets and radishes. As a manufacturer we have the choice between synthetically produced nitrite or a natural source like cultured celery extract. They both provide the same important food safety benefits. Our body converts the nitrates from vegetables, cheese, cured meats and even from our drinking water into nitrite and nitric oxide, this happens through normal digestion. The same transformation also occurs in cured meats through the following steps:

1. Micro-organisms present or added to meat turn Sodium nitrate (NaNO_3) to sodium nitrite (NaNO_2).
2. Next the sodium nitrite (NaNO_2) reacts with acid and changes to nitrous acid (HONO), which later forms to nitric oxide (NO).
3. The nitric oxide and the meat pigment myoglobin form together to create the red color that you see in air dried meats.
4. When this meat gets heated up, the red turns into a pink color like in a ham.

Only the first transformation step is used for so-called dry cured meats like our air dried meats (Coppa, Prosciutto, Buendnerfleisch, etc.). Usually a mix of nitrates and nitrites are used because the micro-organisms need quite some time to reduce the nitrate into nitrite. This allows for the reduction of nitrite to take place before the microbiological reduced nitrite is ready to kick in. If we didn't do it this way all the nitrites would be used up before the meat is fully dried and therefore it would spoil.

All other cured products like hams and sausages are wet cured and only contain nitrite. Once we cook the meats, nitrite oxide gasses out and only about 10-20% remains as sodium nitrite.

2.3. The nitrite debate

In recent news, you've probably been hearing that nitrites can cause cancer, so let's talk about that:

During the 1950s and 1960s some animal studies indicated the potential for nitrite to form nitrosamines, a carcinogenic compound. In some of those studies it was found that when nitrites, together with protein, in cured meats get heated up to high temperatures, nitrosamines could be formed, for example, when bacon is cooked at 170°C or higher.

In 1975 the Food and Drug Regulations limited the addition of nitrites in cured meat products. The limit for nitrites in bacon is lower than in other cured meat products to assure no nitrosamines can form during the high cooking temperatures. We also add Ascorbic acid (Vitamin C) and sodium erythorbate to our products which inhibit the formation of nitrosamines even more. Nitrites are pre mixed into our salt and levels are tested with each batch.

So besides everything we do to make sure no nitrosamines can form, there is also new and ground breaking research that finds no association between nitrite and cancer. Sodium nitrite is also not on the list of chemicals that are likely carcinogenic. The latest research results go even further and state significant health benefits of nitrite.

When nitrite's safety was first questioned in the 1970s, we didn't yet know about the normal, healthy nitrogen cycle in the human body where nitrite is formed. Research has shown numerous positive effects of nitrite in the prevention of high blood pressure, stomach ulcers and wound healing. Even though we know about the latest positive news, the nitrate debate continues, so just make sure to not overcook your bacon!

If you want to know more about what happens in your body when eating nitrates/nitrites read here: [Nitrates - Old Dominion University](#)

For more information about nitrates/nitrites visit these webpages:

- [Know Your Nitrites](#)
- [Nitrite In Cured Meat Products - Canadian Meat Council](#)

3. Salt

In our daily business at Valbella Gourmet Foods we get asked a lot about low sodium/salt products. It seems like some consumers are concerned about their salt intake, which is a good thing of course – just not when it comes to charcuterie!

Thanks to salt we are able to make charcuterie meats and it's been used to preserve meat as well as fish for centuries. Salt inhibits the growth of micro-organisms and improves the taste.

In the Canadian food regulations it is set to what extent you can call a product "low sodium" but with our charcuterie and deli meats being manufactured the traditional way we can't meet this low sodium level. We could use some synthetically sourced salt replacers but they change the taste and texture, therefore we believe that this is not a good solution for our products. Salt has many benefits that our body needs to function normally, so just keep in mind that our nutrition is about balance.

4. Sodium erythorbate

Sodium erythorbate is a food additive very similar to vitamin C. The use of sodium erythorbate and nitrate/nitrite always go together in charcuterie as sodium erythorbate helps reduce nitrite faster. As an antioxidant, it prevents the formation of carcinogenic nitrosamines (see section about nitrates/nitrites) and helps prevent rancidity.

Sodium erythorbate is gained by fermenting sugars from beets, rice and corn with bacteria. Besides the use in cured meats, sodium erythorbate is widely found in products like fruit juices, tea, wine, beer, jam and canned foods. Sodium erythorbate also replaces sulfites as a former food preservative as allergies from sulfites are increasing.

5. Ascorbic acid – Vitamin C

Ascorbic acid is the chemical name of vitamin C and has the same job in cured meats as sodium erythorbate. It prevents the formation of nitrosamines. While sodium erythorbate has no nutritional value, our body can absorb ascorbic acid and use it as an essential nutrient. Ascorbic acid is produced by fermenting glucose, a simple sugar found in many starchy crops.

6. Glucono- δ (delta)-lactone GDL

Glucono-delta-lactone helps to turn sodium nitrite into nitrous acid. We use it in our fermented sausages such as Landjaeger to make sure that together with the fermentation cultures the environment in the sausage is acidic enough to make the transformation from sodium nitrite to nitrous acid. Besides fermented meats, GDL is widely used in foods like honey, fruit juices and wine. Glucono-delta-lactone is prepared by fermenting corn or rice and has nothing to do with lactose.

7. MSG Monosodium glutamate

All products manufactured by Valbella Gourmet Foods are free of MSG. We believe that our meats are delicious enough without the use of MSG as a flavor enhancer.

8. Sodium phosphate

We use sodium phosphate in our cured sausages to make sure that they don't dry out and to maintain the deep red colour of the meat.

9. Dextrose

Dextrose is a nutrient for the micro-organisms which ferment our dry-cured sausages. We could use white sugar instead but dextrose reaches the micro-organisms faster, making sure the starter culture stays happy and active.

10. That's it...

After reading about food additives your brain is full and your stomach is probably empty. Should you avoid all food containing additives from now on? That is a choice we all have to make on a daily basis, but we hope that with the knowledge we have given you, the decision will be easier to make. We will end it on this note: Paracelsus said "all things are poison and nothing is without poison, only the dose makes the difference". It's about moderation and knowing what's in your food.

If you have some more questions, below are a couple links to sites offering further information. Feel free to contact us at Valbella Gourmet Foods for any other questions regarding what's in your meat, we are here to help you understand!

- [Additives Have Legal Limits - Michigan State University](#)
- [Cured Meat Color - Michigan State University](#)