



Nature-based meat preservation resonates with consumers' preferences

Visual appeal, ingredient transparency and sustainable sourcing are essential



Nature-based meat preservation resonates with consumers' preferences

Meat processors have an opportunity to increase customer satisfaction and product sales if they are attuned to emerging consumer preferences and buying behaviors.

Recent reports from major research firms, and Corbion's own studies, show that while post-pandemic consumers still have strong opinions and clear ideas about what constitutes healthy food choices and good nutrition, the persistence of habits formed during the pandemic mean that some of their buying behavior has moved online.¹ And online buying behavior greatly differs from in-store buying behavior.

This paper looks closely at the most significant trends affecting consumers' meat-buying behavior in-store versus online and describes the ways plant-derived antioxidants, such as acerola and rosemary, can help meat processors respond.

Visual appeal is still the biggest purchasing driver

The majority of consumers say color is the No. 1 indicator of freshness when purchasing meat products. This is especially true for GenX and Millennial consumers.² Whether the purchase is completed online or in-store, color plays a major influence.

How major is that influence? A recent Corbion survey³ revealed that 51% of U.S. consumers say color is one of the most important indicators for fresh meat; 53% believe any amount of discoloration



¹ Online meat sales rose 21% between 2019 and 2022 (IRI Integrated Fresh, 52 weeks ending 11/28/2021)

² Corbion proprietary survey, 2021

³ Corbion proprietary survey, June 2022

means food is unsafe to eat and would not purchase; 34% did not purchase a replacement and just walked away; and 42% returned their undesired meat to their store, asking for a refund. All of those behaviors affect the meat processor's bottom line.

“Meat processors would do well to ensure that the product a consumer sees online looks the same as the one in-store that will be delivered to them.”

For many years, meat processors have addressed this issue for specific applications by using synthetically produced sodium nitrite. It has proven itself as a preservative and color fixative, delivering the characteristics meat buyers are looking for.

Processors have also used synthetic antioxidants like BHA (butylated hydroxyanisole), BHT (butylated hydroxytoluene), PG (propyl gallate) and TBHQ (tertiary butylhydroquinone) to achieve the shelf life extension they need.

But consumers are starting to consider additional factors in their purchasing decisions. According to one study,⁴ many consumers post-pandemic are making more intentional choices across all product categories. They're looking for ways to improve their physical and mental health, and they're increasingly aware of the claims, labels, certifications and seals on packaging. Whether for packaged goods or for fresh meat purchases, consumers are interested in the overall ingredients and are paying attention to sustainability, transparency and traceability.

It's imperative, then, that processors strive to create a visually appealing product and package it with the health benefit and ingredient-origin information consumers are seeking.

When you consider how this impacts in-store versus online purchasing decisions, visual appeal presents a particular challenge. Meat processors would do well to ensure that the product a consumer sees online looks the same as the one in-store that will be delivered to them.

Consumers post-pandemic are making more intentional choices across all product categories. Consumers want to improve:



Physical Health



Mental Health



Labels



Claims, Certifications & Seals

⁴ Innova, The Pursuit of Health and Happiness, May 2021

Meat shoppers say the top three reasons they are unsatisfied with their online order are (1) difference from the online picture; (2) not meeting desired specifications and (3) having an “off color.”⁵

Discoloration has a broad economic effect. In looking at in-store meat purchases, more than half of shoppers believe a discolored product is unsafe and won't purchase it. More than a third of consumers (34%) walked away without choosing a replacement option, and more than a quarter (29%) switched to a different type of protein.⁶

Acerola and rosemary fill the bill

With consumer preferences trending toward meat products that are visually appealing and that check the boxes for ease of use, healthy for me and social responsibility, processors have a lot to balance.

Acerola cherry powder is one ingredient that ticks all those boxes. It has proven itself to be a highly effective nature-based antioxidant, color stabilizer and cure accelerator in meats. Acerola grows naturally in Brazil and is considered a “super fruit” because it is one of the richest sources of vitamin C found in nature (50 to 100 times the vitamin C content of oranges or lemons). The human body absorbs the vitamin C in acerola more readily than its synthetic counterpart, ascorbic acid.⁷ Acerola extract is a great fit for a natural cure system, offering a label-friendly replacement to sodium erythorbate to allow for natural cure accelerations.

The challenge for meat processors is to verify the sources and production methods of the acerola they use. Demand is high, and acerola is expensive to produce, so there is market pressure to bring it to market quickly and cheaply. This can lead to exploitative labor practices or false claims about a product's natural origins.



**Acerola cherry powder
has proven to be a:**



**Nature-based
antioxidant**



Color stabilizer



Cure accelerator

⁵ Corbion proprietary survey, June 2022

⁶ Corbion proprietary survey, June 2022

⁷ Assis, et al, 2008

It is therefore in the processor's interest to require the supplier to provide scientific validation of an ingredient's authenticity — proof that it is of natural origin and was harvested sustainably. At Corbion, the Origin® portfolio of products uses carbon dating to verify authenticity, and the company adheres to a code of conduct that ensures social responsibility.⁸ These approaches assure processors that they are getting a verifiable acerola cherry ingredient for their lists and are responding to consumer preferences for natural, healthy, sustainably sourced foods.

Rosemary extract is another nature-based antioxidant that works exceptionally well in meats. It contains carnosic acid, a naturally occurring antioxidant that extends the shelf life of meat products by slowing the oxidation process and preventing rancidity. Corbion gently processes rosemary to remove characteristic spice notes and allows higher use rates without impacting the final product's organoleptic quality while conveying freshness that appeals to consumers seeking simpler labels with all-natural, plant-derived ingredients.

By delaying the oxidation of fresh and processed meats, carnosic acid helps them retain their fresh color, taste and aroma. Ground beef, ham and bacon keep their reddish-pink color, and sliced turkey breast remains bright white or golden brown. And rosemary extract has long been used in other meats, like hot dogs, sausages and other products.



Rosemary has been proven to:



Delay oxidation



Prevent rancidity



Retain color, taste and aroma in meat

“ In addition to its preservative benefits, rosemary within Corbion's Origin® portfolio delivers on the social preferences consumers look for. ”

In addition to its preservative benefits, Corbion's Origin® Portfolio delivers on the social preferences consumers look for. It is naturally grown and sustainably harvested in Morocco and comes with an authenticity guarantee. Corbion works closely with local suppliers and processors, which minimizes the carbon footprint made by processing and shipping, and creates opportunities in the region that enrich the local economy.

⁸ Corbion received the coveted Ecovadis Platinum Sustainability Rating in 2021. This distinction is based on the Guidelines for Multinational Enterprises from The organization for Economic co-operation and

Development (OECD) and the eight fundamental conventions defined by the International Labor Organization (ILO).

A natural advantage

Plant-derived preservatives continue to offer meat processors effective alternatives to traditional preservative ingredients — alternatives that help create products that align with current and emerging consumer preferences. Online and in-store shoppers bring high expectations to their purchasing decisions, are increasingly selective about their choices and look to labels for essential information.

There is an opportunity in the meat industry for processors who take emerging consumer behaviors and preferences to heart. As online purchasing increases and consumers rely on in-store order fulfillment, they increase transit time from store to customer and from different storage conditions. This could affect the appearance and quality of the product. As these qualities play an increasingly important role, preserving that appearance will become even more important.⁹

In addition, label information, whether for in-store or online products, must go beyond what is required by regulation and contain the information consumers are looking for. Labels that describe a product's health benefits and its use of natural, responsibly sourced ingredients will have a strong appeal to consumers.

By using plant-derived antioxidants to give their meats the fresh look that shoppers seek, and ensuring their packaging and labeling showcase those nature-based ingredients, meat processors can generate a strong appeal to current and emerging consumers.



⁹ The Future of Dinner, The NPD Group, 2022



For more information, please contact:
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Corbion partners with the world's food manufacturers to put truly sustainable food solutions to work. Our state-of-the-art ingredient solutions redefine preservation, inspiring and enabling forward-thinking companies to create and prolong all the hallmarks of freshness and safety — like texture, taste and antimicrobial control — that shape delightful eating experiences, all while protecting the planet future generations will inherit. We deliver both tangible and intangible value, helping our customers craft delicious, nourishing foods consumers can trust. At Corbion, our priorities as consumers shape the products we help make possible — products that allow our families, our friends, and our customers to thrive.