

# A natural attraction



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Natural labeling attracts shoppers. Refrigerated, frozen, ready-to-eat or ready-for-cooking, all types of meat and poultry increase their chance of purchase when the package sports a natural claim, even when the claim comes with a higher price.

All natural draws the highest awareness among shoppers who have seen production claims on packages of fresh meat and poultry, according to the Power of Meat 2018 report. On the other hand, as important as claims of being humanely raised and vegetarian-fed are to some shoppers, these claims have gone unnoticed by the majority of shoppers.

“Natural is the largest segment with the highest awareness,” says Anne-Marie Roerink, principal, 210 Analytics, San Antonio, Texas, and author of the report. “Dollar sales for natural meat and poultry are nearly four times that of the organic segment, with sizeable sales across all proteins. Organic has the second-highest awareness, despite being a small segment. It is likely that awareness is affected by organic availability.

“Claim awareness is the first step in potentially justifying a price differential and building a point of differentiation for the retailer or brand,” she says. “For each claim, the share of shoppers who would be more likely to buy it when they see it is higher than the share who say the claim has no impact on their likelihood to purchase. The gaps are particularly significant for humanely raised, hormone-free, antibiotic-free and all natural.”

## Making a claim

Unlike for most foods where no definition for the term natural exists, the US Dept. of Agriculture (USDA) has defined natural as it pertains to meat and poultry. The definition, however, can be confusing and at times even misleading. The USDA states that meat and poultry products can be

labeled natural if they are only minimally processed and don't have any artificial flavorings, colorings, preservatives or other additives.

So what's minimally processed?

Some argue that deboning chicken breast is more than a minimal process. What are "artificial other additives?" There's a great deal of latitude with interpretation of that one.

For many marketers, humanely raised, hormone-free, antibiotic-free and similar claims are part of their justification of a natural claim. Research has also shown that consumers tend to associate natural meat and poultry labels with local, family farms.



"The ingredient label is still a major consideration for consumers who want to steer clear of things with chemical-sounding names," says Tom Rourke, director of business development, Corbion, Lenexa, Kansas. "Even if they don't know what might be unhealthy about some of those more traditional ingredients, they are still not comfortable with them. Many natural solutions make successful replacements for synthetic options in terms of efficacy, flavor, functionality and cost-in-use."

### Flavor and texture adventure

The USDA specifically prohibits the use of artificial flavors in meat and poultry labeled as natural. Identifying natural options that deliver on flavor throughout shelf life, and after cooking, if applicable, can be challenging.

"Functionally natural flavors perform very similarly to artificial flavors, though some artificial flavors are difficult to replicate using natural flavors," says Roger Lane, marketing manager, savory flavors, Sensient Flavors, Hoffman Estates, Illinois.

Yeast extracts are often part of a seasoning mix, as they enhance flavor and may be considered a clean-label alternative to monosodium glutamate. Yeast are microorganisms consumers are familiar with.

Many yeast extracts in the market are made from strains of baker's yeast. The yeast grows and ferments a sugar source, and is then exposed to enzymes that break the yeast cell wall, a natural process called autolysis. This allows the flavor components of protein and amino acids from the yeast cell to be extracted.

"Yeast extracts can provide taste enhancement when less clean ingredients are removed," Lane says. "Since we produce our own yeast extracts, we're able to meet the unique needs of each of our customers. If a manufacturer wants to go even cleaner than flavor or yeast extract, we also have a range of from-the-named-source extracts that are labeled as natural extract."

“Most taste issues can be solved either with a yeast extract alone or a combination of yeast extract and natural flavor,” he says.

Flavors and seasonings are often delivered through breadings and batters. Manufacturers must be mindful of the multiple ingredients that go into coating the protein.

“In the process of breading a protein, the three basic steps include a pre-dust, the batter and the breading itself. Egg white proteins can aid with binding the breading to the protein substrate,” says Elisa Maloberti, director, egg product marketing, American Egg Board, Chicago. “Egg white works well in a high-adhesion pre-dust at levels of 5 to 7 percent.”

Egg whites are a clean-label alternative to chemical-sounding ingredients. They are a natural option and labeled simply as egg white on the ingredient statement.

### **Succulence and safety**

Phosphates and modified food starches have long been used to bind moisture in proteins, improving succulence. They are very effective, however, they are not considered label friendly by some shoppers.



Plum ingredients are an alternative. They also possess other functional properties that can help clean up labels.

“Because of their high antioxidant levels, plum ingredients can improve display appearance and reduce lipid oxidation,” says Kate Leahy, spokesperson for Sunsweet Ingredients, Yuba City, California. “Plum ingredients enhance browning, eliminating the need for caramel color. They also enhance the taste of seasonings, so formulators find they can reduce total sodium and spices in a product to reach a more balanced flavor. By reducing the amount of seasoning necessary, the cost of switching to plum ingredients often balances out.”

For whole-muscle cuts, such as steaks, ribs or roasts, adding 1 percent fresh plum concentrate to a marinade, either through an injection or vacuum-tumbling process, will bind moisture and provide shelf life benefits. With cuts such as boneless, skinless chicken breasts that will be sold already cooked, the same concentration of fresh plum concentrate can be used, but it works best when also combined with a natural fruit powder to ensure moisture stays in the muscle.

“With sausages, adding 1 percent to 2 percent plum puree to the meat matrix during the emulsification process will bind moisture in both cooked and fresh sausages,” Leahy says. “An additional benefit of using prune puree in sausage making is it allows for fat reduction without a loss of texture and flavor.

“For light-colored sausages, we recommend using 1 percent to 1.5 percent fresh plum concentrate. It binds moisture without darkening the meat,” she says. “The concentrate will help brown the meat as it is cooked, enhancing taste and appearance.”

Meat snacks may also benefit from prune ingredients. Prune puree, for example, can help reduce both sodium and sugar while slowing lipid oxidation, improving texture and chew, and replacing caramel color.

“As meat snacks – both in snack bar and jerky forms – continue to gain interest among consumers, the challenge becomes making these products palatable, with good flavor and texture, while also being lower in sodium and sugar,” Leahy says. “Natural, functional ingredients, like prune-based ingredients, can go a long way in improving the flavor, appearance and acceptance of these foods.”

For prepared meats containing modified corn starches, functional native starches are also an option to enhance texture and viscosity while allowing for a natural claim.

“We offer a functional native potato starch that provides water-holding capacity, purge control and stability, comparable to traditional modified starches in cooked meat and sausage applications,” says Melissa Machen, senior technical services specialist, Cargill Texturizing Solutions, Minneapolis. “It appears on ingredient statements as simply ‘potato starch.’”

Isolated fiber ingredients are also a natural alternative. Not only do they bind water, they add fiber to otherwise fiber-void foods.

“Chicory root fiber offers meat processors a label-friendly option to retain water in processed meats, improving the product’s sensory characteristics and boosting yields through cook cycles,” Machen says. “It may also be used as a fat replacer in low-fat meat applications.”

“Many natural solutions make a successful replacement for synthetic options in terms of efficacy, flavor, functionality and cost-in-use.” - Tom Rourke

Jefferson, Georgia-based World Technology Ingredients (WTI) Inc., has a lemon juice and vinegar blend, as well as a rice flour and lemon juice product to replace phosphates, while delivering excellent yields with great flavor profiles.

“Our natural phosphate alternatives achieve very comparable yields at around 1.0 percent usage rate in sausage, poultry and red meat applications, compared to traditional phosphates,” says Klaus Kreuzner, director of sales at WTI.

Wenda Ingredients, Naperville, Illinois, offers a phosphate replacer that is a blend of brewer’s yeast extract and citrus extracts. It is labeled simply “yeast extract, natural flavors.”

“It can be used in injected or tumbled applications, as well as in ground and emulsified meats,” says Brian Metzger, vice president of sales and business development.

Food safety and shelf life extension ingredients may also be cleaned up to allow for a natural claim. Rourke suggests replacing lactate or diacetate with vinegar for pathogen control and replacing propionate and benzoate with a cultured sugar ingredient. The latter is a natural option for inhibiting the growth of spoilage organisms and thus extending shelf life.

“While manufacturers are pushing for effective food safety solutions, consumers are also demanding familiar ingredients to do the job,” says Travis Krause, proteins business manager, Kemin Food Technologies, Des Moines, Iowa. Kemin recently launched a reduced-flavor dry vinegar to round out its vinegar ingredient portfolio. It’s available in liquid, dry, high-concentration and as organic.

“Use rates of 0.4 percent to 0.8 percent will inhibit microbial spoilage organisms in fresh meats and will inhibit Listeria in ready-to-eat meats,” Krause says. “It can even be topically sprayed onto fresh meat cuts to extend days of packaged shelf life.”

Plant extracts are often used for shelf life extension, as they are inherent sources of antioxidants.

“Acerola extract blends with rosemary and green tea allow for color and flavor protection compared to straight acerola, which controls color specifically,” Krause says. “This blend can be used in naturally cured meat products as a cure accelerator to improve cure color.”

Dollar sales for the natural segment is nearly four times that of the organic segment, according to Anne-Marie Roerink, author of the 2018 Power of Meat study.

Camlin Fine Sciences, Urbandale, Iowa, uses rosemary, green tea, mixed tocopherols and acerola, as well as clean-label chelators, such as ascorbic acid, to create synergistic combinations tailored for specific applications.

“Our natural offerings can replace synthetic antioxidants and, in most cases, provide equal or better shelf life management,” says Jennifer Igou, general manager, North America at Camlin. “When comparing these clean-label products versus traditional antioxidants, the natural options do tend to be more expensive.

“Not only is the price-per-pound more, but typically a higher application rate is needed to get the shelf life that is desired,” she says. “We work closely with the customer to understand all the needs including cost limitations when recommending a product.”

In an application such as fresh ground chicken meat, the use of a natural shelf management product is common. In both a raw or cooked form, oxidation needs to be mitigated.

“The use of rosemary extract or a rosemary and green tea blend can significantly increase the shelf life by keeping oxidative by-products low, improving flavor and other sensory attributes of the ground meat,” Igou says. “Pork sausage is an application where synthetic antioxidants are still very much being used. However, by switching to plant extracts, oftentimes an increase in shelf life can be achieved.”

That’s because synthetic antioxidants have limitations on their application rates, while for the most part, there is no upper limit restriction for their natural counterparts. Higher application rates can be used without impacting the flavor profile.

Wenda Ingredient’s chemical antioxidant replacement solution combines sea salt with fruit and spice extracts. It is labeled “sea salt, natural flavors” and extends shelf life by protecting fresh meats from color degradation, spoilage microorganisms and oxidation. It protects against pathogens, too, according to Metzger.

“We also offer a true ‘uncured’ meat solution,” Metzger says. “Fruit and spice extracts with polyphenols and flavonoid antioxidants fix the iron in the meat myoglobin and create cured color and flavor with no or very miniscule amounts of residual nitrites. This all-in-one solution eliminates chemical nitrates and nitrites, erythorbate, celery powder, lactates, diacetate, and cherry powder, and eliminates the need for high-pressure processing.

Using ingredients sourced from food rather than concocted in a lab assists with natural label claims.

“Brands and processors who proactively offer consumers cleaner, more natural, delicious meat and poultry products have an opportunity to elevate their brand and capture market share in this faster growing market segment,” Metzger concludes.

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