THE WORLD OF CLAIMS IN TODAY'S

Baking and Snack Marketplace

TODAY'S CONSUMER LANDSCAPE

As consumer profiles continue to evolve, it is important to understand consumers and meet their needs in order to create successful baking and snack products. Today's marketplace is more demanding than ever, because for the first time, "there are FIVE distinct generations of shoppers. Each of the five generations has distinct characteristics and attributes that influence their shopping preferences, behaviors, and ultimately, purchasing decisions."[1]

	Gen Z Shoppers	Millennials	Gen X	Baby Boomers	Silents
Age/Birth Years	18-21 1996-1999	22-36 1981-1995	37-52 1965-1980	53-71 1946-1964	72+ Before 1946
Population Size	42.1 million (7% of shoppers 18+)	67.1 million (27% of shoppers 18+)	65.7 million (26% of shoppers 18+)	72.1 million (29% of shoppers 18+)	27.5 million (11% of shoppers 18+)
Ave. Grocery Spend/Month	$269	$298	$380	$314	$287
Key Differentiators	Not big spenders yet, but they're dedicated to healthy, organic food and make frequent trips to the store	Using technology to shop and save, not particularly brand loyal, but driven by speed, convenience and variety	Biggest spenders on groceries, loyal to their brands, and big users of digital coupons	Downsizing, technology-capable, and interested in locally sourced products	Have the highest per-person grocery bill, but live on fixed incomes and are motivated by value

Information in chart sourced from Acosta's "The Why? Behind The Buy™ Profiles Five Generations of Grocery Shoppers"[2]

TODAY'S CONSUMER LANDSCAPE

The Five Generations

Each generation has specific characteristics worth noting:

The following information sourced from Acosta's "The Why? Behind The Buy™ Profiles Five Generations of Grocery Shoppers"[3]

GEN Z SHOPPERS (AGES 18-21)

- Have never experienced life without the internet
- Are multicultural
- Are dedicated to healthy, organic food

MILLENNIAL SHOPPERS (AGES 22-36)

- Are technology-driven
- Now account for 27% of U.S. shoppers ages 18+ and have lots of spending power
- Are less brand loyal than other generations
- Retailers and brands still have time to win their hearts and wallets: 45% of Millennial shoppers agree they like sharing their experiences with their favorite grocery brands with family and friends.
- Are price-conscious shoppers

GEN X SHOPPERS (AGES 37-52)

- Grew up before the internet
- Are cynical, but have the highest brand loyalty
- Are adventurous grocery shoppers

BOOMER SHOPPERS (AGES 53-71)

- Are brand loyal and interested in locally sourced products
- Consider health and wellness an imperative

SILENT SHOPPERS (AGES 72+)

- Are important grocery spenders
- Are spending the most per person on monthly groceries across all of the generations

TODAY'S CONSUMER LANDSCAPE

Looking to the Future

Younger generations are more diverse: from 2010 to 2020, 89 percent of U.S. population growth is forecast to come from racial and multicultural growth. As tastes continue to diversify[4], grocery store purchases are impacted.

Spending, Shopping and Eating

Different priorities and life stages influence each demographic group's spending and shopping habits surrounding food. For instance, Gen X shoppers with kids at home are currently at peak spending, while Boomers are downsizing and spending less. Likewise, for the first time ever, Gen Z is emerging as an influencer in grocery spending. Following these trends, by 2025 Millennials will move toward peak spending and Gen X will be downsizing.[5]

Some Gen Z consumers are getting brand information from online influencers (like well-known bloggers and other internet personalities), in addition to considering the brand recommendations of their family and friends.[6] And, Gen Z shoppers value health and wellness, and spend on natural and free-from foods. They show a high awareness of, and desire for, healthy food, with more than one-third of their grocery basket considered organic products on a typical trip.[7] Compared to total U.S. shoppers, significantly more Gen X shoppers have purchased grocery items containing all natural ingredients, products that are hormone free, antibiotic free and gluten free, as well as items containing probiotics.[8]

WHEN IT COMES TO MILLENNIAL MOMS, THEY SAY THEY WANT HELP WITH THE FOLLOWING[9]:

- Making healthy food choices for me 64%
- Making healthy food choices for my children 59%

TODAY'S CONSUMER LANDSCAPE

Snacking is Trending

According to Mintel's Snacking Motivations and Attitudes US 2015, nearly all Americans (94 percent) snack at least once a day, with half (50 percent) of adults snacking two to three times per day and 70 percent agreeing that anything can be considered a snack.[10] It's no surprise then that 2015 sales of salty snacks such as corn chips, multi-grains and popcorn rose 3.3 percent year over year to $26.8 billion, and snack sales have increased in four consecutive years, according to research from Nielsen.[11]

[94% OF AMERICANS SNACK DAILY]

Snacking by Demographic

Millennials are significantly more likely to snack, with 24 percent most likely to snack frequently, (4x or more per day) and 23 percent snacking more this year compared to last year.[12]

Yet, baby boomers like ready-to-eat snacks, buying them 20 percent more often than millennials do. Boomers eat 1,200 snacks per person each year, for a group total of 90.4 billion snacks per year, while their millennial offspring eat about 1,000 snacks per person each, or a total of 83.1 billion snacks per year, according to new research from NPD Group.[13]

iGen/Millennials are drawn to organic snacks and products with added nutrition, including protein and vitamins. Since affordability is more important to this generation, there is an opportunity for health-focused or organic brands to reach them with low-cost snacking options.[14]

Consumers are finding a balance between health and indulgence—with health playing a prevalent role in the types of snacks consumers are eating. Furthermore, 33 percent of U.S. consumers indicate they are snacking on healthier foods this year compared to last year.[15]

TODAY'S CONSUMER LANDSCAPE

ALONG WITH THESE INCREASES IN HEALTHY EATING HABITS, 60% OF U.S. CONSUMERS WISH THERE WERE MORE HEALTHY SNACK OPTIONS.[16]

"With a third of consumers saying they are snacking on healthier options more often this year compared to last year, there will be an increasing need for better-for-you snacks, in smaller portions and convenient formats. This addresses consumers' desire to balance both health and indulgence," concludes Amanda Topper, Food Analyst at Mintel.[17]

Americans also claim a preference for healthier snacking with 33 percent saying they are snacking on healthier foods this year compared to last year, specifically those with simple ingredients and low calorie counts. However, they most often snack to satisfy a craving (62 percent), highlighting the important role taste and flavor play on snacking behavior.[18]

Label Claims Speak to Consumers

So, how do consumers know what they are getting—and find what they are looking for? Label claims act as a signal to consumers, addressing their concerns about ingredients, processes and other information about the foods they eat.

Different demographic groups have different considerations and label claims that interest them.

What do Millennials, Gen X and Baby Boomers Have in Common?

They all want natural/fresh/free-from foods.

"Foods bearing 'free-from' claims also are becoming increasingly important to all Americans who perceive the products as more healthy when compared with foods without such claims," according to research from the market research firm Mintel, Chicago.[19]

In a Nielsen survey of global respondents vs. those willing to pay more, 69 percent were driven by the statement: "The product is made from fresh, natural and/or organic ingredients" and 70 percent responded to "The product is known for its health & wellness benefits."[20]

[CONSUMERS WORRY ABOUT POTENTIALLY HARMFUL INGREDIENTS IN FOOD THEY BUY]

Millennials, Gen X and Baby Boomers have similar concerns when it comes to perceptions regarding the quality of food and beverage products. Overall, 60 percent of Millennials, 55 percent of Gen Xers, and 46 percent of Baby Boomers agree that they worry about potentially harmful ingredients in the food they buy, according to Mintel.[21]

Millennial shoppers should be noted for their interest in ingredient transparency and foods they consider healthy and fresh, as well as their high awareness of product ingredients and sourcing. To reach these shoppers, successful brands will need to be transparent, and focus on fresh and healthy ingredients. Six in ten Millennial shoppers indicate they usually look at a product label or packaging before buying, and 48 percent agree that they eat healthy foods even though they are more expensive, which is counter to their price-conscious nature.[22]

WHAT ELSE DO CONSUMERS WANT?

Taste is Paramount

Though fresh/natural and 'free-from' claims are important, taste is still paramount. "Mintel research shows that even though consumers want more healthy snack options, they place more importance on taste and flavor than healthfulness when making purchase decisions. When it comes to choosing snack options, 74 percent of consumers agree flavor is more important than brand, while 51 percent agree taste is more important than health."[23]

"'Taste' still reigns supreme (as it has every year the Food and Health Survey has been conducted), with 81% saying it has at least some impact in their buying decisions."[24]

Consumers want familiar-sounding ingredients

Following taste, 65 percent of respondents in the same survey say that familiarity has at least some impact in their buying decisions.[25]

Consumers distrust artificial/unfamiliar-sounding names

"When asked to choose between two versions of the same product—an older one that includes artificial ingredients and a newer version that does not—seven in ten (69 percent) chose the product with no artificial ingredients, while one-third (32 percent) chose the one containing artificial ingredients."[26]

GIVING CONSUMERS WHAT THEY WANT

In today's marketplace, consumers have a world of bakery and snack options to choose from—and high expectations regarding their choices. In a 2017 Shopper Confidence Survey:[27]

- **98% of consumers believe it's important for them to consider ingredients in the food products they buy**
- **3/4 of consumers avoid specific ingredients when shopping for food products**
- **91% of consumers say that descriptions that appear on packaging influence what food products they purchase**

"Food values" continue their growth as a factor in consumers' decision-making, with "organics" and "natural" becoming increasingly popular purchasing choices. When shopping for foods and beverages, 29 percent buy those labeled "organic," up from 25 percent in 2017. Similarly, 37 percent of shoppers bought foods and beverages billed as "natural," up from 31 percent in 2017.[28]

Almost all consumers are interested in getting specific health benefits from food or nutrients and 36 percent of Americans reported following a specific eating pattern or diet within the past year.[29]

GIVING CONSUMERS WHAT THEY WANT

What Consumers Want to See on the Products They Purchase

CLEAN LABEL

Has become the "de facto standard" in mainstream foods[30]

SIMPLE, MADE WITH REAL...

Familiar-sounding ingredient names play a central role in the clean-label landscape, while unfamiliar, chemical-sounding and difficult-to-pronounce names raise consumer concerns[31]

ORGANIC

25% of Americans report that they regularly buy food labeled as organic[32]

GLUTEN-FREE

2 in 5 consumers say gluten-free products are beneficial for everyone, not just those with gluten allergy/intolerance/sensitivity[33]

NON-GMO

73% seek non-GMO labels, considering them healthier, safer, or better for the environment[34]

PLANT DERIVED/ PLANT-BASED INGREDIENTS

83% of U.S. consumers want to include more plant-based foods in their diet to improve health and nutrition[35]

NO ADDED SUGAR

43% say that 'low sugar' on a package influences their food purchase[36]

FREE FROM ALLERGENS

Almost 70% of Americans buy 'free-from' food products mainly for health and nutritional reasons[37]. Self-reported food allergies are increasing among U.S. adults[38]

NO ARTIFICIAL COLORS

2/3 of consumers surveyed reject artificial colors in food and beverages[39]

PHO FREE

Health claims are most important to the 49% who say they always read the ingredients label[40]

PROTECTING QUALITY AND SHELF LIFE

Meeting Consumer Demands and Protecting Shelf Life at the Same Time

So, what shelf-life options do bakery and snack manufacturers have to meet these claims? It can be detrimental to manufacturers and their brands to simply remove negative-sounding ingredients, since reformulations can impact shelf life and therefore, put brands at risk. Instead of wholesale removal of these ingredients, replacing them with effective clean label solutions can significantly delay or prevent lipid oxidation to lengthen shelf life and help maintain consumer brand loyalty. The right solutions can provide stability while also meeting brand goals for label claims and transparency.

Kemin provides technical solutions to keep bakery and snack products fresher, longer with value-added antioxidant and mold inhibiting products.

Real-Life Solutions to Protect Quality and Shelf Life

A recent study on the shelf life of shelled walnuts[41] illustrates the effectiveness of antioxidant and plant extract ingredients against oxidative rancidity. Shelled walnuts, which are widely used as snack items or as an ingredient in candies, cereals, and baked goods, contain approximately 66 percent fat. Quality loss in food products containing fat is typically caused by color, odor, and flavor changes that signal the onset of oxidative rancidity. Walnuts are highly susceptible to oxidative rancidity, due to their higher level fat content.

The overall objective of the study was to compare the efficacy of an oil-soluble green tea and rosemary extract blend, a straight rosemary extract blend, and butylated hydroxytoluene (BHT) against an untreated control in improving the oxidative stability of walnuts. Based on primary and secondary oxidative byproducts and sensory analysis, the plant extracts tested in this study performed similar to BHT. The plant extracts performed better than the untreated control, providing extended shelf life over untreated walnuts.

PROTECTING QUALITY AND SHELF LIFE

The Study Compared the Performance of the Following Kemin Products vs. Untreated Walnuts:

- **EN-HANCE® A109 (A109)**
  containing 20% butylated hydroxytoluene (BHT) at 1000 ppm

- **CA-FORT™ 1010 LIQUID (CA-FORT)**
  composed of rosemary extract as the active portion in a sunflower oil carrier at 1500 ppm

- **NATURFORT™ LGR 105 (LGR)**
  composed of oil-soluble green tea extract and rosemary extract as the active portions in a sunflower oil carrier at 1000 ppm

Details of the Study

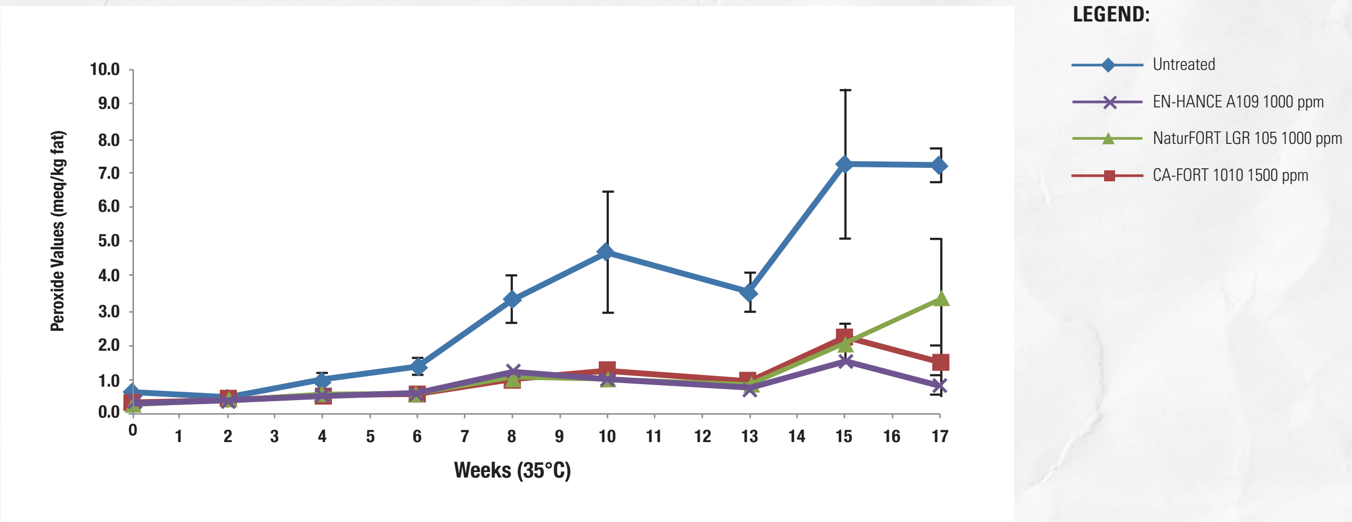
Testing of walnuts was carried out over 17 weeks at 35°C in the dark. Treatments were topically sprayed onto walnut halves and samples were prepared in replicates (n=2) and were analyzed for peroxide values (PV-Primary oxidative byproduct); alkenal values (secondary oxidative byproducts); and acceptability at weeks 0, 4, 6, 10, 13, 15, and 17.

PROTECTING QUALITY AND SHELF LIFE

PV Testing Results

Starting at week 6, the untreated walnuts had significantly higher ($p<0.05$) PV than all treated samples. There was no significant difference between samples at the initial test and week 2 ($p>0.05$), and the treated samples were statistically the same starting at week 4.

Peroxide Values (meq/kg fat) of Walnuts Stored at 35°C



Treatment / Week	0	2	4	6	8	10	13	15	17
Untreated	0.60	0.50	0.97^{b}	1.38^{b}	3.35^{b}	4.70^{b}	3.54^{b}	7.27^{b}	7.24^{b}
CA-FORT 1500 ppm	0.31	0.44	0.51^{a}	0.59^{a}	1.01^{a}	1.27^{ab}	0.96^{a}	2.26^{a}	1.48^{a}
LGR 105 1000 ppm	0.27	0.41	0.62^{ab}	0.6^{a}	1.08^{a}	1.04^{a}	0.86^{a}	2.07^{a}	3.39^{a}
A109 1000 ppm	0.29	0.37	0.55^{ab}	0.58^{a}	1.20^{a}	1.00^{a}	0.73^{a}	1.52^{a}	0.85^{a}

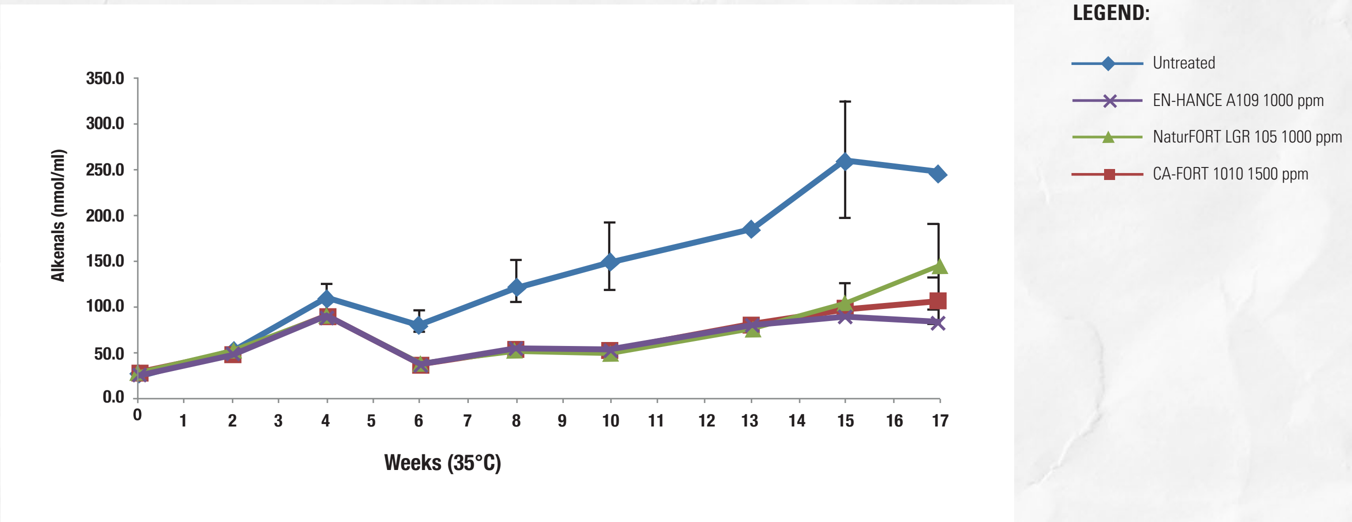
Peroxide Values (meq/kg fat) of walnuts stored at 35°C. Different superscripts in a column indicate a significant difference ($p<0.05$).

PROTECTING QUALITY AND SHELF LIFE

Alkenal Testing Results

Starting at week 6, the untreated control had significantly higher ($p<0.05$) alkenals compared to all treated samples. There were no significant differences at initial, week 2, and week 4 ($p>0.05$). From week 6 onwards, all treated samples were statistically the same in alkenal levels.

Alkenals (nmol/ml) of Walnuts Stored at 35°C



Treatment / Week	0	2	4	6	8	10	13	15	17
Untreated	18.90	52.61	109.49	78.49[b]	121.89[b]	151.32[b]	189.67[b]	268.53[b]	255.49[b]
CA-FORT 1500 ppm	24.85	45.64	88.84	35.53[a]	47.98[a]	51.08[a]	81.47[a]	97.04[a]	106.98[a]
LGR 105 1000 ppm	25.45	49.20	88.28	34.10[a]	48.12[a]	48.51[a]	76.48[a]	105.39[a]	149.10[a]
A109 1000 ppm	19.88	45.01	91.14	33.28[a]	51.92[a]	50.75[a]	79.30[a]	88.56[a]	81.52[a]

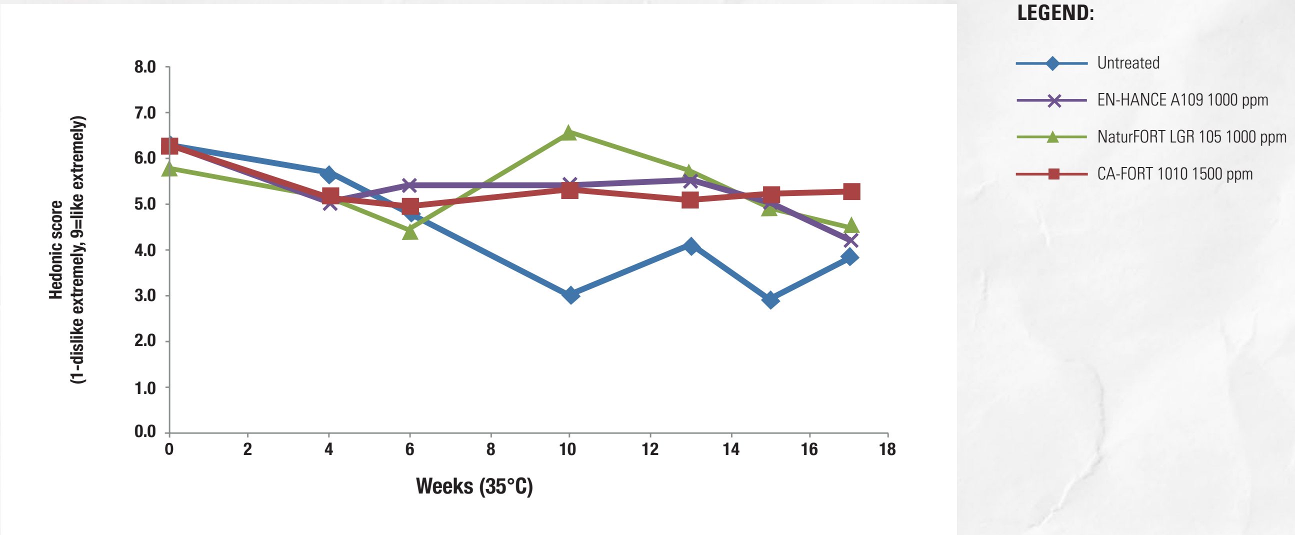
Alkenals (nmol/ml) of walnuts stored at 35°C. Different superscripts in a column indicate a significant difference ($p<0.05$).

PROTECTING QUALITY AND SHELF LIFE

Sensory Evaluation Results

Untreated samples had a lower score starting at week 10. Plant extract had a similar score to BHT over 17 weeks.

Hedonic Score of Walnuts Stored at 35°C



The addition of plant extracts did not change the sensory scores, which indicates that addition of these extracts at the levels used in this study did not negatively impact the flavor of the walnuts. Further, it shows that these plant extracts were efficacious in preventing off-flavors due to oxidative rancidity over a period of 17 weeks at accelerated conditions.

While manufacturers have routinely added synthetic antioxidants to extend the shelf life of foods containing lipids, rising consumer concerns over the use of chemical preservatives continue to increase demand for more label-friendly options. For manufacturers who want to meet this demand, rosemary extract and oil soluble green tea extract blends from Kemin give similar performance to BHT in shelled walnuts while providing a consumer-pleasing clean-label option. Plant extracts tested in this study provided substantial shelf-life extension over the untreated ingredient.

REAL SOLUTIONS TO KEEP PRODUCTS FRESHER, LONGER

The experienced technical team at Kemin develops antioxidant, antimicrobial, mold-inhibiting and performance-enhancing solutions that positively affect shelf life. The Kemin team understands how different factors including mixing procedures, baking and storage temperatures, water activity, and pH affect the shelf life and consumer appeal of baking and snack products, and they provide solutions to address those particular needs. They offer simple solutions as well as complex blends to help baking and snack manufacturers solve their color, flavor and microbial stability requirements. Onsite Customer Laboratory Services (CLS) demonstrate efficacy in customer's food matrices, so manufacturers can be confident that their products stay fresher, safer, longer. With their formulation expertise and extensive portfolio of shelf-life solutions, Kemin helps manufacturers achieve 'claimability' with label claims that meet consumers' demands without sacrificing shelf life or sensory appeal.

For more information, visit kemin.com/markets/food/market-segments/bakery-snack or call 800.777.8307

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