Plant-Based Dairy Alternatives

A widening audience, expanding presence
Dairy alternatives are moo-ving into the mainstream.

The dairy alternative category is not a new one. But with all the evolution and diversification it’s undergone since aseptically packaged soy milk was commercially introduced in the late 1970’s, it may as well be.

Changing consumer lifestyles and attitudes, paired with a new generation of refrigerated non-dairy plant-based milks offering unique flavors and functional benefits, have channeled plant-based dairy alternative products directly into the mainstream. From 2000 to 2016, non-dairy plant-based milk consumption increased by triple digits.1 Going forward, Packaged Facts forecasts that dairy alternatives will come to represent 40% of the total dairy and dairy alternative market, with $28 billion in sales, by 2021.1

A bumper crop of influences

As consumers scrutinize their food choices more closely, plant-based dairy alternatives resonate with many who believe that eating plant-based foods is healthier than eating animal-based foods – whether due to concerns about antibiotics, hormones, sustainability or animal welfare. Nondairy alternatives also provide a source of protein and nutrients for consumers with dairy tolerance issues. According to the National Institutes of Health, approximately 65% of the population has a reduced ability to digest lactose after infancy.2 It’s unclear whether that number is on the rise; some sources cite “self-diagnosis” of lactose intolerance as a driving force in the growth of dairy-free products.3

While less than 15% of consumers identify as vegan or vegetarian, a growing number are pursuing “flexitarian” or “lessitarian” eating habits. According to the Nutrition Business Journal Report, about a quarter of the U.S. population says they are trying to cut back on animal-based foods and beverages in a consciously balanced way. Packaged Facts credits this group as the most significant influencer on the shift from dairy milk to non-dairy plant-based milk.4

As traditional dairy consumption ebbs, dairy alternatives flow

(Millions of dollars, percent) 2

<table>
<thead>
<tr>
<th>Year</th>
<th>Dairy Beverages</th>
<th>Dairy Alternative Beverages</th>
<th>Total</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$</td>
<td>% of Total</td>
<td>$</td>
<td>% of Total</td>
</tr>
<tr>
<td>2021</td>
<td>$16,775</td>
<td>60.0%</td>
<td>$11,175</td>
<td>40.0%</td>
</tr>
<tr>
<td>2020</td>
<td>17,100</td>
<td>63.3</td>
<td>9,900</td>
<td>36.7</td>
</tr>
<tr>
<td>2019</td>
<td>17,450</td>
<td>66.6</td>
<td>8,750</td>
<td>33.4</td>
</tr>
<tr>
<td>2018</td>
<td>17,800</td>
<td>69.7</td>
<td>7,750</td>
<td>30.3</td>
</tr>
<tr>
<td>2017</td>
<td>18,150</td>
<td>72.6</td>
<td>6,850</td>
<td>27.4</td>
</tr>
<tr>
<td>2016</td>
<td>$18,500</td>
<td>75.0%</td>
<td>$6,075</td>
<td>25.0%</td>
</tr>
</tbody>
</table>

Almond dominates, new sources gaining ground

Soy and almond milk are well-established options for dairy alternatives. As consumer interest has grown, so too has the breadth of origin plants. Legume-based varieties made from cashews, hazelnuts, macadamias, peas, peanuts, pecans, and even tiger nuts are increasingly found on store shelves.

In its report, "Dairy and Dairy Alternative Beverage Trends in the U.S.," Packaged Facts predicts a range of novel sources to gain attention, including non-dairy milks made from barley, flax, hemp, pea and quinoa. These novel sources can offer the added appeal of rich nutrient content, high protein content and more sustainable production methods.

“Innovation will be a catalyst to drive the category forward in 2018, as both mainstream bases like almond and alternative plant bases offer added functional benefits and unique flavors,” observed Megan Hambleton, Beverage Analyst at Mintel.

What are non-dairy consumers looking for?

Non-dairy consumers tend to consider more factors in their purchases:

<table>
<thead>
<tr>
<th>Factor</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flavor</td>
<td>48%</td>
</tr>
<tr>
<td>Natural</td>
<td>46%</td>
</tr>
<tr>
<td>Vitamins/Minerals</td>
<td>43%</td>
</tr>
<tr>
<td>High in Protein</td>
<td>42%</td>
</tr>
<tr>
<td>Organic</td>
<td>33%</td>
</tr>
</tbody>
</table>

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How do non-dairy milks stack up nutritionally?6
While plant-based milks may not offer calorie reduction or protein enrichment, they can provide a source of healthy fats, nutrients like Omega-3’s, reduced sugar content, and are often nutrient-fortified.

<table>
<thead>
<tr>
<th></th>
<th>Calories</th>
<th>Fat</th>
<th>Sugars</th>
<th>Protein</th>
<th>Calcium (% DV)</th>
<th>Vitamin D (% DV)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dairy Milk, 1%</td>
<td>103</td>
<td>2.4g</td>
<td>13g</td>
<td>8g</td>
<td>30%</td>
<td>25%</td>
</tr>
<tr>
<td>Almond Milk</td>
<td>60</td>
<td>2.5g</td>
<td>7g</td>
<td>1g</td>
<td>45%</td>
<td>25%</td>
</tr>
<tr>
<td>Soy Milk</td>
<td>130</td>
<td>4g</td>
<td>7g</td>
<td>11g</td>
<td>45%</td>
<td>30%</td>
</tr>
<tr>
<td>Coconut Milk</td>
<td>70</td>
<td>4.5g</td>
<td>6g</td>
<td>0g</td>
<td>45%</td>
<td>25%</td>
</tr>
<tr>
<td>Flax Milk</td>
<td>50</td>
<td>2.5g</td>
<td>7g</td>
<td>0g</td>
<td>30%</td>
<td>25%</td>
</tr>
<tr>
<td>Rice Milk</td>
<td>120</td>
<td>2.5g</td>
<td>10g</td>
<td>1g</td>
<td>30%</td>
<td>25%</td>
</tr>
<tr>
<td>Hazelnut Milk</td>
<td>110</td>
<td>3.5g</td>
<td>14g</td>
<td>2g</td>
<td>30%</td>
<td>25%</td>
</tr>
<tr>
<td>Hemp Milk</td>
<td>140</td>
<td>5g</td>
<td>14g</td>
<td>3g</td>
<td>30%</td>
<td>25%</td>
</tr>
<tr>
<td>Quinoa Milk</td>
<td>100</td>
<td>15g</td>
<td>10g</td>
<td>2g</td>
<td>30%</td>
<td>25%</td>
</tr>
<tr>
<td>Cashew Milk</td>
<td>60</td>
<td>2.5g</td>
<td>7g</td>
<td>&gt;1g</td>
<td>45%</td>
<td>25%</td>
</tr>
</tbody>
</table>

More than just milk

As plant-based nutrition gains momentum, innovative manufacturers are making forays into other plant-based dairy alternative products. Leading ice cream makers have launched indulgent non-dairy frozen desserts based on soy, almond and coconut ingredients – frequently marketed as a rich source of vitamins, proteins and minerals – for feel-good indulgence.

Dairy-free yogurts are poised to claim a foothold in the neighborhood grocery store. Some industry observers expect 2018 to be “the year of alt-yogurt,” with non-dairy options finally able to deliver on taste and texture, and smaller producers receiving cash infusions from major players to help bring their products to the mass market.7

The CAGR for the global non-dairy yogurt market through 2027 is forecasted at 4.9%.8 And according to market research firm Bharat Book Bureau, the dairy-free or vegan cheese market will experience a compound annual growth rate (CAGR) of 7.6% in the next six years, which would make it worth nearly 4 billion by 2024.9
Navigating non-dairy

Clearly, the dairy alternatives market offers significant growth opportunity. However, the potential is not without challenges.

**Legislative challenges.** In the U.S., producers of traditional dairy have encouraged the Food and Drug Administration (FDA) to exclude plant-based beverage products from its definition of the food standard for milk. Federal courts have ruled against the effort, saying any reasonable consumer would understand there is no dairy component in plant-based milk. However, Canada, the UK and EU do not allow manufacturers to use the term “milk” on plant-based beverages.

**Formulation challenges.** Depending on the plant source and application, non-dairy formulations can require some fine-tuning to achieve the desired taste and texture. “The challenge is that plant proteins create textural differences, which we can manage with other ingredients in our portfolio,” explains Christine Addington, a texturizing specialist for Cargill. In almond milk, for example, canola lecithin can provide the emulsification required to mix water in almond paste. A non-dairy yogurt may incorporate pea protein to meet consumer expectations for protein content.

**Partner with an expert**

From non-dairy milk to yogurt, vegan cheese to dairy-free ice cream, depend on Cargill’s formulation expertise, broad ingredient portfolio and reliable supply chain to help you bring consumer-pleasing dairy alternatives to market.

**Contact us at 1-877-SOL-UTNS (765-8867)**

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**Our dairy alternative ingredient portfolio includes:**

- **Sugar Reduction Solutions**
  - Stevia Leaf Extract
  - Erythritol
  - Chicory Root Fiber
  - Custom Texturizing Systems
  - Reduced-Sugar Corn Syrup
  - Pectin

- **Label-Friendly Solutions**
  - Stevia Leaf Extract
  - Chicory Root Fiber
  - Custom Texturizing Systems
  - Pectin
  - Lecithin
  - Starch
  - Vegetable Proteins

- **Texturizing Solutions**
  - Pectin
  - Carrageenan
  - Lecithin
  - Chicory Root Fiber
  - Starch
  - Vegetable Proteins
  - Custom Texturizing Systems

- **Sweetness Solutions (Zero & Full-Calorie)**
  - Stevia Leaf Extract
  - Erythritol
  - Sugar
  - Corn Syrup and Reduced-Sugar Corn Syrup

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**SOURCES:**

7. Well and Good. “Attention: Nut-Milk Yogurt is now Colonizing a Dairy Case Near You (or will be soon),” 12/6/17  
   http://vegnews.com/articles/page.do?pagId=10502&catId=1

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