



Explosive growth in pectin gummies creates opportunities and challenges for manufacturers

*Learn how **PECMATE™** made by Bartek Ingredients delivers easier product development, less scrap, and lower cost of production in pectin-based gummy systems across multiple end use categories*



Why is pectin growing?

Across all categories, demand for plant-based foods has risen substantially. Sales data from SPINS and The Good Food Institute indicate sales for plant-based foods, as of April 6, 2021, of approximately \$7 billion, a 27% year-over-year increase.

How has pectin emerged in confectionery?

Growing consumer demand for plant-based and vegan alternatives has prompted confectioners to tap into this wave by replacing gelatin, an animal derived product, with pectin as their preferred gelling agent in popular soft confections like gummies, marshmallows, pastilles, jellies, and chews. As shown in **Figure 1** below, from 2015 to 2020, pectin led the way in new soft confectionery product launches where a vegan or no animal ingredient claim was made.

Top Ingredients In New Soft Confectionery Products Making Vegan or No Animal Ingredient Claims

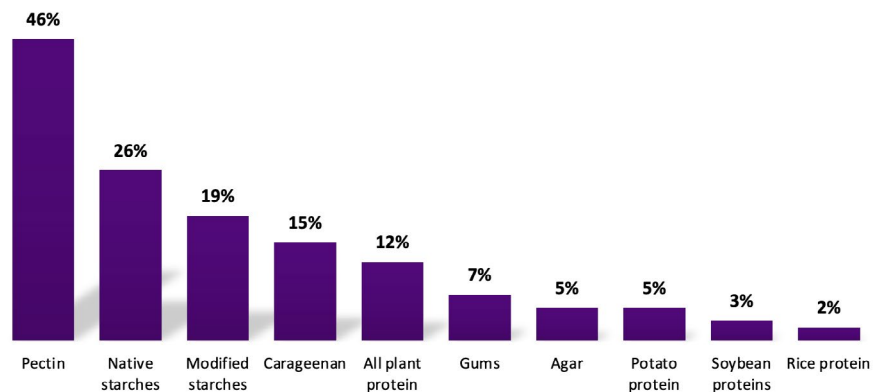


Figure 1. Source: Mintel

The emergence of gummies as mainstream products in the confectionery market is here to stay. For example, Mars Wrigley introduced new gummy SKITTLES® at the 2021 Sweets and Snacks Expo in June 2021. Likewise, many other major candy brands are leveraging their iconic brands to innovate new, innovative candies.



Are traditional gummy confectionery systems driving vitamin, mineral, and supplement growth?

There are even more growth opportunities to be realized in the explosion of gummy delivery systems for vitamins, minerals, supplements (VMS), and emerging active compounds like cannabinoids. This delivery format is especially popular among millennials and Gen Z, who have grown up with these types of products, as well as older adults who prefer the ease of consumption over tablets that can be difficult to swallow or fail to mask the taste of the active ingredient.

The same plant-based trends affecting change in the confectionery segment carry over to new product launches in the VMS gummy segment. **Figure 2** represents approximately 3x growth in the number of new VMS gummies containing pectin launched between 2016 and 2020. Further, 2020 shows 60% of all new VMS gummy products launched used pectin as their preferred gelling agent. These data suggest that pectin will continue to displace gelatin in the foreseeable future and is on a trajectory to grow in usage within both established and emerging segments.

2016 - 2020 VMS Gummy New Product Launches Containing Pectin

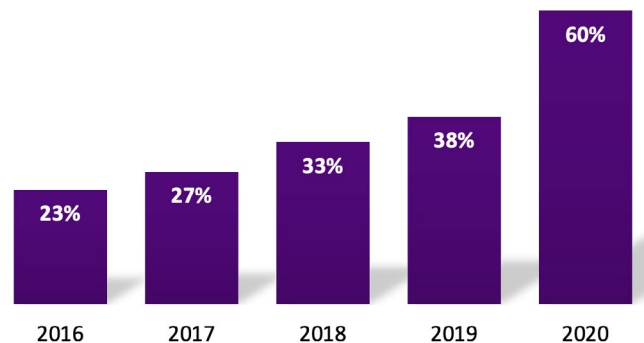


Figure 2. Source: Mintel 2020

Pectin in Gummies: Challenges & Solutions

Despite pectin's strong marketing advantages, it comes with formulation and manufacturing challenges that make it far more difficult to use than traditional options like gelatin. Stability in pH is one of the major variables that affects gelling properties of pectin. As a result, pH must be continually monitored and constantly adjusted. Otherwise, pectin could pre-gel or fail to set, creating a range of setbacks, such as lost capacity, higher scrap rates, higher costs, and more overall complexity in the development and manufacturing of these products.

PECMATE™ – Advantages Over Sodium Citrate

The challenges of working with pectin are currently managed mostly with sodium citrate – a sub-optimal buffer for pectin’s gelling range of pH 3.2 to 3.6.

Figure 3 shows that sodium citrate, as well as the commonly used citric and malic acids, consistently falls outside pectin’s gelling range.

In contrast, PECMATE™ pectin enhancer not only demonstrates consistent performance within pectin’s gelling range but also delivers optimal performance within pectin’s ideal gelling range of pH 3.4 – 3.52.

Therefore, PECMATE™ pectin enhancer achieves multiple advantages in formulation and manufacturing:

- Better product consistency
- Less product loss
- Less production downtime
- Clean release from molds
- Expanded workable pH range
- Optimal buffering with any acidulant
- Candies that hold their shape

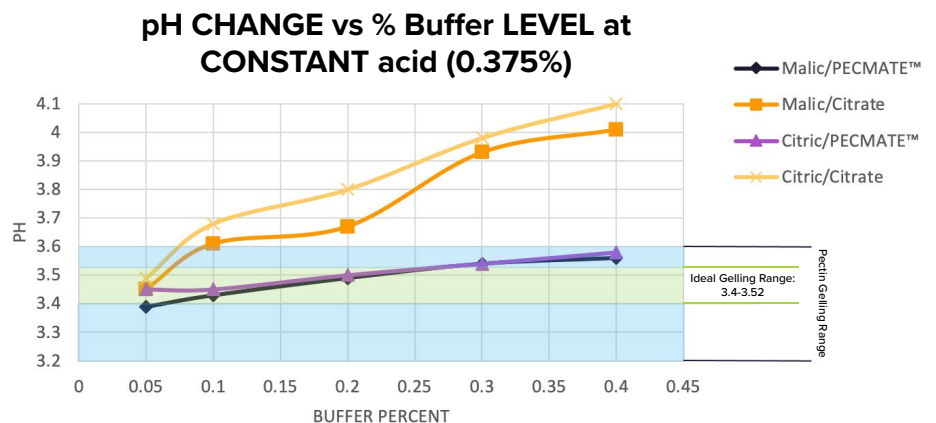


Figure 3. Source: Victus ARS, Chicago, IL

PECMATE™ Case Study – Vitamin-Fortified Gummies

The introduction of active compounds into any system will affect pH. This especially applies in VMS gummies, where buffer salts are used to reduce pH variability. In Figure 4 below, in a side-by-side comparison, VMS gummies produced using PECMATE™ held an **ideal pH range (3.40 to 3.52)** during production, whereas gummies formulated with sodium citrate resulted in a wider range (3.35 to 3.75). These results demonstrate that using PECMATE™ is more effective than sodium citrate at reducing pH variability and results in better consistency with less scrap in production.



Figure 4. Source: Victus ARS, Chicago, IL

PECMATE™ – The Potential to Revolutionize Pectin Gummy Production

Spanning traditional confectionery to more complicated VMS products, PECMATE™ functions as the perfect partner for pectin in gummy systems. Using PECMATE™ in conjunction with pectin helps to reduce product loss, streamlines R&D, and contributes to an overall more consistent consumer experience from pectin-based gummy systems.

Bartek: Trusted Ingredient Solution Provider

With decades of experience in delivering malic and fumaric acidulants for food and beverage applications, Bartek has expanded its offering as it continues to focus on solving the major challenges facing today’s food and candy formulators. PECMATE™ Pectin Enhancer is Bartek’s latest innovation to help confectionery and VMS gummy brands lower production costs and capitalize on current consumer trends with speed and ease.

Want to find out more about Bartek’s innovative solutions like PECMATE™? Please contact us to schedule a meeting and discuss!

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