

A new approach to fortified gummy production

Using starch-free technology, Gelita, Hänsel and WDS have developed a revolutionary method to manufacture gelatine gummies in less than two hours.

Gummies with active ingredients are on trend. Today, millions of consumers have turned to fortified gummies as a convenient and healthy dietary supplement. Until now, these gelatine gummies have been produced on regular mogul lines to achieve the desired texture, taste and bite. Although the ability to produce a variety of different shapes and sizes is a huge advantage of this processing method, there's also a massive downside: the combined use of active ingredients and starch can lead to cross-contamination. Now, Gelita, a global leader in gelatine and collagen proteins, has joined forces with Hänsel Processing GmbH and Winkler und Dünnebier Süßwarenmaschinen (WDS) to revolutionise gelatine gummy production. The company's new Fast Forward Process technology is a starch-free production method that employs reusable silicone moulds in-



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Taking gummy production to the next level

stead of traditional starch trays. This innovative solution creates significant added value for manufacturers by providing a cleaner working environment, accelerating production and facilitating fortification.

A segment on the rise

In the late 1990s, fortified gummies made their first appearance in the US as an alternative delivery method for children's vitamins and minerals. With the US being a pioneer in this sector, gummy multivitamins ac-

counted for 7.5% of the United States' \$6 billion multivitamin market in 2016, according to estimates from the Nutrition Business Journal and projections from research company IBISWorld, the New York Times reports. And although the market for classic confectionery gummies is a mature one with relatively small margins around the world, fortified gummies have experienced double-digit growth. According to Innova Market Insights, global CAGR between 2012 and 2016 was +26%. The segment is



The new depositing line from WDS makes it possible to produce gummies without starch.

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growing in Asia (+39%) as well as in Western and Eastern Europe (+29% and +28%) and North Africa (+25%). Margins are also considerably higher, making fortified gummy production profitable for smaller manufacturers as well.

The success of supplements in this indulgent form is based on three key factors: first, quite simply, gummies taste better than traditional supplements. Secondly, chewable products eliminate the most common obstacle among older users, namely, the difficulties associated with swallowing large tablets or capsules. And, thirdly, switching to a gummy version of a vitamin or dietary supplement makes people feel as though they're not taking so many pills.

Taste matters, safety counts

When it comes to choosing confectionery products, consumers are predominantly looking for a treat. Therefore, taste and texture are critical. People won't buy gummy candies just because they promise to deliver certain health benefits. So, although the wellbeing aspect of a product may well stimulate consumer interest, that product will only be successful if it meets and delivers the expectations of a confectionery treat. Today, the immense popularity of both gummy candies and fortified gummies is due primarily to the texture-providing properties of gelatine.

The big advantage of the mogul lines currently in use are their flexibility. Endless shape and size variations are possible simply by changing the stamp. There's no better processing method for companies that need to adapt quickly to current trends and consumer demands with their gummy portfolio. However, when it comes to producing fortified gummies, other priorities dominate. Product safety and hygiene are paramount. A critical problem when bringing active ingredients into the formulation is starch-based cross-contamination. This can only be avoided by completely replacing the starch during each changeover.



Starch-free production of gelatine gummies.

However, this would be an almost impossible task and entail unreasonable cost. Approximately 5–6 kg of starch are used for each mogul machine tray. A regular mogul line can process approximately 30 trays per minute, which adds up to 10.8 tonnes of starch per hour. This means that, on one day alone, almost 260 tonnes of starch are used on a regular mogul line.

Another downside of the traditional manufacturing method is its long production time. The drying time for gummy candies is approximately 24 hours, sometimes even 48 hours. The gummies have to remain in the starch trays to set, lose moisture and obtain the required texture for demoulding. As a consequence, large

storage facilities with controlled temperature and humidity are an absolute necessity.

Starch-free production

To overcome the challenges of cross-contamination and time, starch-free production offers a solution. This approach has been already working well with gelling agents such as pectin and carrageenan. However, these products don't provide the required texture and chewiness that can only be achieved with gelatine. This is why Gelita has collaborated with Hänsel and WDS to produce the first gelatine gummies using a starch-free processing method. Dr Margarethe Plotkowiak from Gelita comments, 'We're really excited about present-

ing this outstanding new method to our customers. Fast Forward Process technology reduces the time required to make a gummy to a fraction of the standard starch mogul system while immensely improving the hygiene required for the new product developments. Our new high-speed setting solution allows for almost immediate demoulding and marks the beginning of a new era in gelatine gummy production.'

The new technology is tailored to the requirements of quick demoulding. This has resulted in an innovative gummy formulation from Gelita, a novel cooking process developed by Hänsel and a new depositing line from WDS to handle the depositing masses successfully. The combination of these three elements shortens the gelatine gummy production time up to the moment of demoulding from one day to less than two hours. Lengthy drying times in the tray are no longer required. Whereas tens of thousands of starch trays were needed previously, the new process only requires some hundreds of reusable silicone moulds. This not only leads to savings in energy costs and personnel, production space can be minimised as well. Furthermore, the absence of starch significantly reduces materials handling and avoids dust, residues as well as cross-contamination when using different fortification ingredients such as vitamins, minerals or other active ingredients in the formulation.

A partner for the industry

Gelita is a provider of premium ingredients for the production of fortified gummies with high consumer appeal. But, more than that, the company also delivers a wide range of comprehensive business services starting with the development of concepts, formulations and prototypes and extending to the selection of the ideal type of gelatine for optimised processes, marketing support and technical assistance. With their decades of experience, the company's technical experts are put their exten-



Gelita

Gummies: the market is growing for fortified ones

sive know-how in fortified gummy manufacturing to use for new and established customers alike. At the same time, its research specialists are continually exploring new and innovative gelatine application areas that help clients to enter new markets all over the world.

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Fast-growing market for fortified gummies

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