

# CREATIVELY KOSHER



A SUPPLEMENT TO  
**Dairy**  
FOODS

BY DONNA BERRY  
PRODUCT DEVELOPMENT EDITOR, DAIRY FOODS



Increased consumer interest in **kosher foods** drives suppliers to scale-up kosher production of specialty ingredients, such as beef gelatin, an ingredient long sought by product developers.



*Photo courtesy of Chick-fil-A*

Prompted by concerns for health, quality and safety, Americans of all races and creed are turning to kosher foods, as such products have gained the reputation of being more carefully produced, thoroughly inspected and fully traceable. Further, due to clear labeling practices of kosher food, consumers who

have food sensitivities or allergies to certain ingredients are relying on this market to monitor their diets.

### THE KOSHER CONSUMER

In a consumer survey of adults who purchase kosher food, Chicago-based market research firm Mintel found that the number one reason people buy kosher is for food quality (62%). The sec-

ond most common reason is general healthfulness (51%) and the third is food safety (34%). This contrasts sharply to the just 14% of respondents who say they purchase kosher food because they follow kosher religious rules. Another 10% buy kosher because they follow some other religious rules with eating restrictions similar to kosher.

With these beliefs, it's no wonder dollar sales of kosher foods are projected to more than

double from 2003 (\$7.6 billion) to 2013 (\$17 billion), according to Mintel.

“Consumers are happy when they can clearly see what they are going to get,” said Marcia Mogelonsky, senior research analyst for Mintel. “With recent food safety scares causing people to rethink even the most familiar food products, we can expect more adults to turn to kosher food as a way to ensure food safety and quality.

“Vegetarians and health-conscious consumers are also influencing the kosher sales numbers,” she says. “There is a major opportunity for kosher manufacturers to build sales within this category. This category is positioned to build, specifically as sales of organic and health-oriented foods continue to rise. Due to increased awareness of food safety and preparation procedures, more consumers feel that specific ko-

sher products are more healthful than their mainstream, non-kosher counterparts.”

Rabbi Dovid Jenkins, a rabbinic coordinator with the Orthodox Union (OU), New York, the world’s largest and most respected kosher certification agency, explains that part of the appeal of kosher is the strict guidelines kosher manufacturers must follow to ensure cleanliness, purity of ingredients and safety.

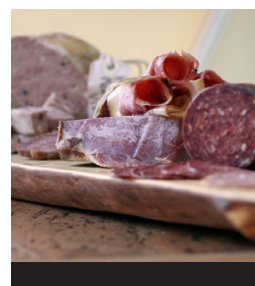
“Kosher food manufacturing is supervised by a rabbi and includes examination of all ingredients as well as processing and packaging equipment,” he says. “The OU’s standards are extremely rigorous. In fact, a food can be denied kosher certification when a single non-kosher ingredient is present, even if that ingredient is only one-tenth of one percent of the whole product.

“In order for a food, beverage or supplement to be OU-

## KOSHER GELATIN APPLICATIONS

	APPLICATION	GELATIN FUNCTIONALITIES	USAGE LEVEL *
BEVERAGE	Juice	Removal of turbidity; brilliant clear	0.002% to 0.015%
	Smoothie	Provides smooth mouthfeel; thickener	1.0% to 10.0%
	Wine ▼	Removal of turbidity and tannins	0.002% to 0.015%
CONFECTION	Gummy candy ▼	Provides smooth texture and mouthfeel; has a delicate chew; thermoreversible gel melts in the mouth; excellent clarity; neutral color and taste; assists in flavor release	5.0% to 9.0%
	Marshmallow	High-degree of gel firmness; good foam formation and stabilization; thermoreversible gel melts in the mouth	1.5% to 2.5%
	Nougat	Good foam formation and stabilization; thermoreversible gel melts in the mouth	0.2% to 2.0%
DAIRY	Ice cream ▼	Binds water; controls size and distribution of ice crystals; stabilizes overrun	0.1% to 1.0%
	Yogurt	Binds water; prevents syneresis; contributes to slippery mouthfeel	0.2% to 1.0%
DESSERT	Gelatin ▼	Thermoreversible gel melts in the mouth; excellent clarity; neutral color and taste; assists in flavor release	1.5% to 2.5%
	Mousse/pudding	Good foam formation and stabilization; thermoreversible gel melts in the mouth; prevents syneresis	0.5% to 2.0%
MEAT	Aspic	Gelling agent	1.0% to 5.0%
	Low-fat luncheon meat	Water-binding; fat replacement	1.0% to 5.0%
	Sausage ▼	Coating; adhesive agent	1.0% to 5.0%

\* Usage level is dependent on grade of gelatin and desired texture in final product.



Gummy Candy photo courtesy of National Starch. Yogurt photo courtesy of Angela McKeller. Gelatin photo courtesy of Superfos. Sausage photo courtesy of Linkery.



## GELATIN — AN IRREPLACEABLE HYDROCOLLOID

Globally recognized as a safe and highly functional natural ingredient, gelatin has been used for centuries as a means to gel and thicken foodstuffs. (See chart for key applications and functionalities.)

Gelatin ingredients are made from the connective tissue of mammals. Connective tissue, also called collagen, is the structural protein found in bones and skin. Commercially available edible gelatin is 84% to 90% protein, 8% to 12% water and 2% to 4% mineral salts.

As an ingredient, gelatin is characterized as a hydrocolloid, a term that refers to a range of polysaccharides and proteins that emulsify, foam, gel, stabilize, thicken, inhibit ice crystal formation and even control the release of flavors. Their primary function—binding water—is alluded to in the name, where the prefix “hydro” means water and “colloid” means a gelatinous substance. Hydrocolloids do not lower water activity, so they do not have an effect on microbial activity, but they have a huge impact on texture and stability. Almost all processed foods rely on one or more hydrocolloids.

“Some hydrocolloids, such as Geliko Kosher Gelatin, form thermoreversible gels, where gelation occurs after the hydrocolloid dissolves in solution and is cooled. When heat is applied, the gel melts or dissolves. This is best exemplified by gelatin dessert, which melts in the mouth at body temperature,” says McKibbin.

Gelatin is tested and graded according to the strength of the gel it produces upon dissolution in water. The grade is based on the Bloom Test, with the more rigid the sample, the higher the Bloom number and grade. The Bloom number of commercially available edible gelatins is between 80 and 280.

“There are other hydrocolloids that form non-thermoreversible gels. In other words, once the gel is formed, there is no going back to liquid form,” says McKibbin. “Some hydrocolloids form no gel at all, such as Geliko Kosher Gelatin Hydrolysate. These hydrocolloids are excellent binders and thickeners.”

Gelatin hydrolysate is produced from the same raw materials as gelatin, and has the same regulatory status and nutritional value. The differences occur during processing.

“Whereas gelatin is obtained by the partial enzymatic hydrolysis of collagen, gelatin hydrolysate results from the complete enzymatic hydrolysis of collagen,” says McKibbin. “The end result is an ingredient with different application and functionality.”

In addition to extensive use in the food and beverage industries, gelatin ingredients have a long history in the pharmaceutical industry, as gelatin encapsulates and protects a variety of prescription and over-the-counter capsules. Further, select gelatin ingredients are now being used in the cosmetics industry in products that claim to protect skin, hair and more. And, research suggests that gelatin ingredients, in particular gelatin hydrolysate, when consumed orally, can help treat bone and joint discomfort.

certified kosher, all of the ingredients must be OU-certified,” he adds. “Our clients have told us that the OU symbol gives them a competitive edge in the crowded marketplace. The cost of kosher certification is minimal when compared to the return on investment, as some products have experienced as much as a 65% increase in sales after certification.”

The impressive aforementioned data are driving many food manufacturers to revisit product formulations that do not qualify for OU-certified kosher. In many instances, there might be only one ingredient preventing a finished product from being certified kosher. When the food was originally formulated, a kosher version of that ingredient may not have been available. Today, suppliers that anticipated the boom in kosher foods have identified processing technologies to industrialize production of kosher specialty ingredients. One such company is New York-based Geliko LLC, a global leader of OU-certified kosher gelatin and gelatin hydrolysate.

### KOSHER GELATIN DEBUTS

Product developers know that no single ingredient can replace the functional characteristics

of beef gelatin. (See sidebar on gelatin’s functional attributes.) Yet, many have historically foregone use of this label-friendly ingredient in order for a product to be OU-kosher certified, as the ingredient was not available. With industrial-scale commercial production now underway for Geliko, product developers no longer need to compromise quality for OU certification.

“We believe kosher gelatin was the piece of the puzzle preventing many products from being OU certified,” says Zach Rubin, president and CEO of Geliko.

Rubin explains that gelatin is derived from collagen, a substance found in the skins and bones of animals. “Standard beef gelatin is produced from the trimmings and splits of cattle purchased in bulk from leather processors. To make our

kosher gelatin, we source the entire hide from cattle that has been slaughtered and certified kosher following the strictest kosher guidelines.”

“Purchasing the entire hide ensures full traceability and eliminates the chance of non-



The Orthodox Union was founded in 1898 and today is the world’s largest, most respected kosher certification agency. The agency certifies more than a half million products from around 4,500 manufacturers produced in nearly 9,000 plants in 83 countries. The OU symbol is one of the world’s best-known trademarks.

## KOSHER PAREVE GELATIN FOR DAIRY APPLICATIONS

Kosher laws are very strict concerning the segregation of milk and meat; thus, one might wonder how gelatin derived from cattle can be used in dairy products. The good news is that it can, as a result of the unique full-hide sourcing of kosher ritually slaughtered cattle by Geliko.

"The process renders the hides pareve, which means the OU kosher gelatin can be used in OU kosher dairy products," says Rabbi Jenkins.

### What is pareve?

Foods that do not contain either meat or dairy ingredients are termed pareve, which indicates a neutral state. All fruits, grains and vegetables in their natural state are kosher and pareve. A pareve item becomes kosher dairy or kosher meat when it is cooked together with dairy or meat, respectively.

This is important because of the waiting period kosher law requires between consuming certain food items. For most orthodox Jews, one cannot consume dairy until six hours after eating meat; however, on the reverse, meat can be consumed about an hour after eating dairy. With hard cheese the wait is about two hours. It all has to do with food residue and aftertaste in the palate.

### Highly functional ingredient

Gelatin's functionality in many dairy products is irreplaceable. Now with OU kosher gelatin, processors can switch gelatins and apply for OU certification.

In yogurt, the star of today's dairy case, gelatin stabilizes the creamy mixture by interacting with the gel formed by the casein curd. This prevents syneresis and at the same time provides lubricity to the yogurt's mouthfeel. The latter is a particularly useful attribute in low-fat and nonfat yogurts. The same is true with sour cream.

Ice cream and other frozen dairy desserts benefit from gelatin's ability to interact with overrun (air) that is whipped into these products prior to freezing. Gelatin stabilizes the matrix, immobilizing free water and slowing undesirable ice crystal formation that often develops during freeze-thaw situations.

In processed cheese and cheese spreads, gelatin acts as an emulsifier and water binder. This contributes to a creamy mouthfeel and improved spreadability. With low-fat and nonfat cottage cheese a little bit of gelatin in the dressing will thicken the product, adding body without adding fat.

Ready-to-eat aerated dairy desserts such as mousse and pudding rely on gelatin for form stabilization. Gelatin also contributes a rich, creamy mouthfeel, which allows for a fat reduction in the final product.

kosher hides from entering our gelatin manufacturing process," says Rubin. "Whole hides are much more expensive than hide trimmings or splits. Some dairies and other food manufacturers are finding they can manage costs by sourcing the gelatin directly from us instead of going through a blender. They appreciate the value of OU kosher certified gelatin."

### MODERN MANUFACTURING

Gelita, the world's largest gelatin producer, is contract manufacturing Geliko's kosher gelatin product line. The pro-

cess employed renders the gelatin ingredients pareve, which means that even kosher ice cream can be made with kosher beef gelatin.

Gelita starts by thorough cleaning and pre-treatment of the kosher cattle hides with an alkali process followed by an acid treatment, which renders the collagen soluble in warm water. After rinsing, gelatin is

extracted from the raw materials using a continuous or a multi-stage extraction process. High-performance separators concentrate and purify the gelatin, which is then sterilized and extruded through perforated disks to form "noodles." The gelatin noodles are dried, coarsely ground and placed in quarantine for quality control testing.



Photo courtesy of Vitamix

"Only when comprehensive physical, chemical and biological testing has been completed is the product released for further processing, which includes granulation into specific particle size," says Mindi McKibbin, specialist-edible technical services at Gelita. "All phases of manufacturing, from raw material sourcing, processing, production and packaging are meticulously monitored by Geliko, Gelita and the OU to ensure consistently high quality, safe and completely traceable OU kosher gelatin ingredients.

"The kosher gelatin ingredients have the same functionality in food applications as the standard versions, which means product reformulating is not necessary," McKibbin concludes. "There are foods, beverages and supplements in the marketplace today where gelatin is the only ingredient preventing OU-kosher certification. Now there's nothing holding them back." ■■

Geliko LLC, New York, is the global leader in OU kosher gelatin and gelatin hydrolysate produced from kosher cattle hides. Geliko Kosher Gelatin products are distributed by FIT Technologies, Miami, and Gelita USA, Sioux City, Iowa. For more information, visit [www.geliko.com](http://www.geliko.com), or call Geliko's President and CEO Zach Rubin at (212) 876-5620.

