

ALLAND & ROBERT

**SYNDEO® GELLING,**  
**A PLANT-BASED**  
**GELLING AGENT**  
for ultimate textures

WWW.ALLANDROBERT.COM



## INTRODUCTION

Jelly candies, marshmallows and other confectioneries give consumers of all ages pleasure, fun and enjoyment! However, many sweets call for gelatin as an ingredient which is usually made from animal-derived collagen.

In all categories of food products, vegan options are increasingly purchased by consumers who are concerned by the impact of their consumption on the environment and on animal welfare. Other consumers may wish to avoid products such as gelatin for religious practices. Today, an increasing number of consumers are looking to purchase plant-based products, including confectioneries, mousses and more.

However, finding plant-based substitutes to non-vegan gelling agents can be a challenge if you're looking for that perfect texture and sensory experience.

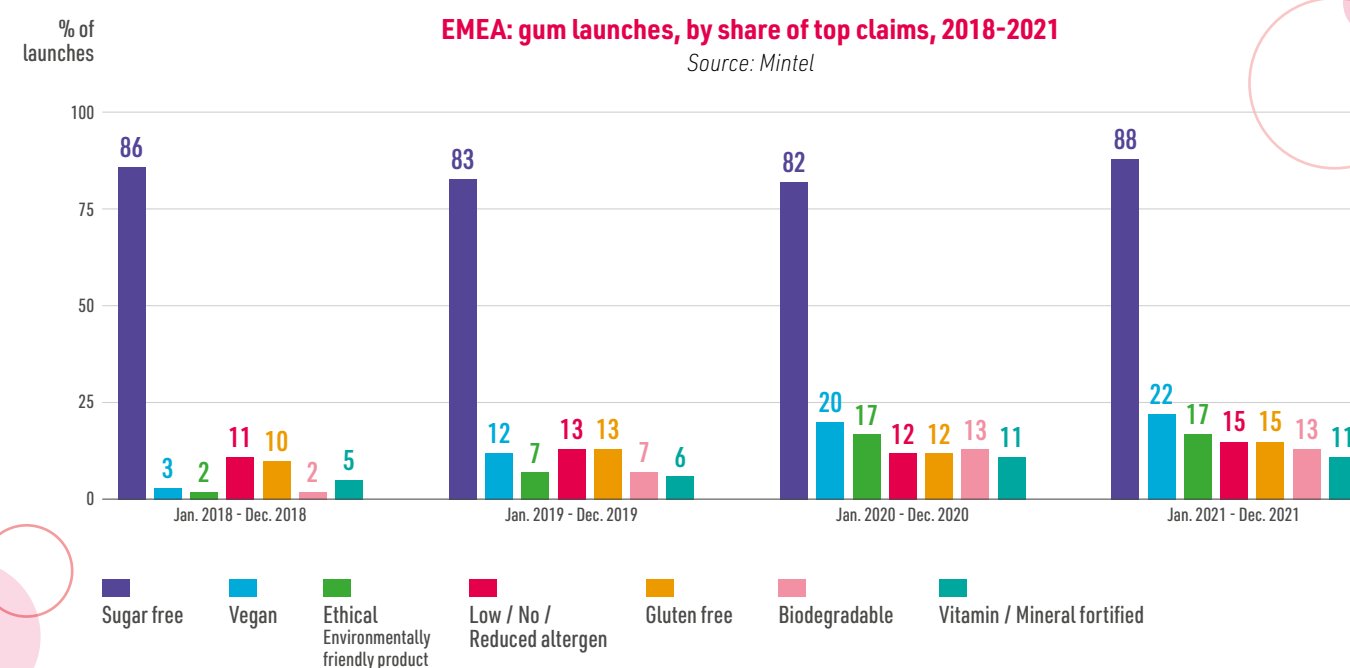
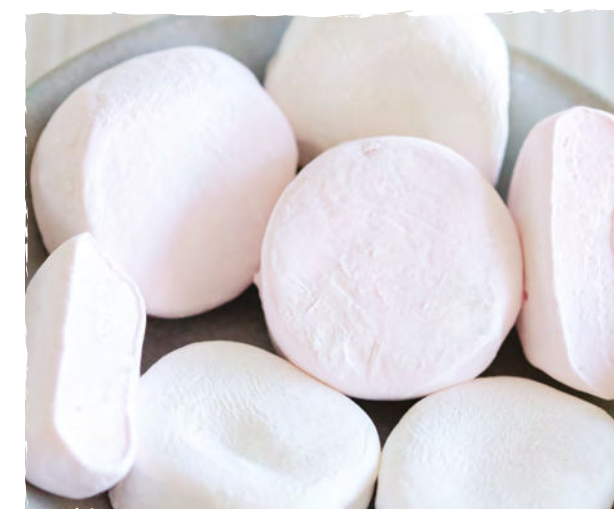
If vegan options for plant-based gelling agents such as pectin already exist, they do not answer all texturing needs. As a leading manufacturer of natural gums, Alland & Robert has researched a plant-based solution that brings excellent stabilizing and texturing properties and help manufacturers find the right balance in formulation.

Our research showed that vegetal and natural hydrocolloids can be combined in order to create a credible and efficient substitute to gelatin.

# 1 / THE EVOLUTION OF CONFECTIONERY

The global confectionery market has been constantly growing over the last few years and is projected to grow at a CAGR of 3.45 % from 2022 to 2027<sup>(1)</sup>. Among confectioneries, sugar confectionery including jellies, gums, pastilles and chews is expected to grow at the higher rate of 4.7 % during the forecast period<sup>(2)</sup>.

However, the growth of obesity-related diseases and the shifting preference for vegan products will weigh in the balance and impact the evolution of the market. Most manufacturers focus on improving the nutritional profile of their products and formulating them to be environmental-friendly, vegan, with low-calorie-value. Other options include going organic, eliminating unhealthy ingredients and reducing sugar content. In EMEA, gum launches with vegan and environmental-friendly claims have significantly increased since 2018.



(1) <https://www.mordorintelligence.com/industry-reports/confectionery-market-industry>  
(2) <https://www.polarismarketresearch.com/industry-analysis/sugar-confectionery-market>

Despite a huge expectation from consumers to deliver on indulgence, sugar confectionery consumption patterns show that the most natural and healthy options are increasingly preferred all over the world by consumers who want to fight against obesity, create better eating habits and reduce their environmental footprint.



#### HEALTHIER OPTIONS

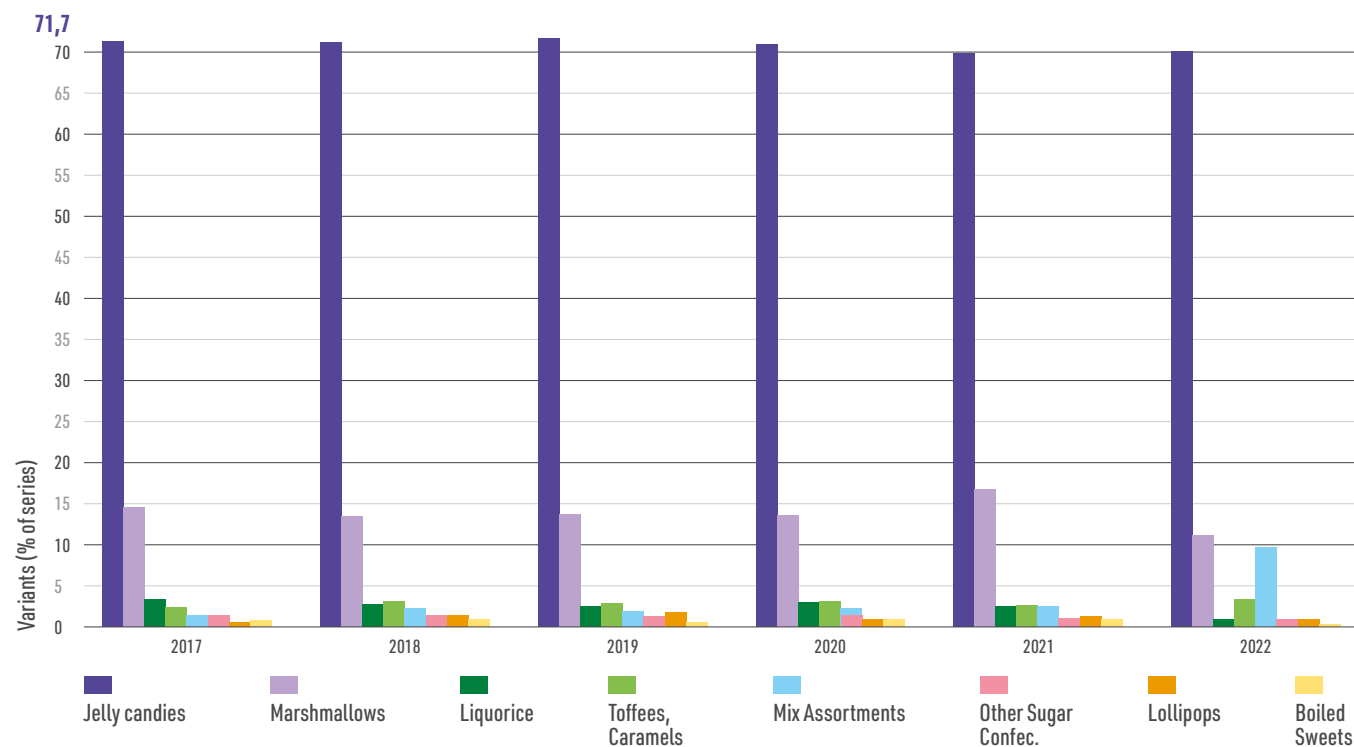
Source: Mintel

**35%** of US category users ate more candies in the past year thanks to the accessibility of more healthier options.

In this context, the number of formulators who wish to innovate with products free from gelatin is growing. At the same time innovation around sensory experience is highly

expected. Memorable textures and multi-sensory features are indeed increasingly important to consumers, especially younger ones.

Subcategories of products containing gelatin inside the sugar & gum confectionery since 2017 Source: Mintel



Pastilles, gums, jellies and marshmallows represent over 80% of the products from the sugar confectionery category containing gelatin. When trying to substitute gelatin, the challenge for these types of confectionery manufacturers is to offer products that provide a perfect texture and mouthfeel that will meet the consumers' expectations. In addition, alternatives to gelatin must be suitable for a vast range of confectionery applications, they must be available in a post-pandemic world where ingredients can be difficult to source and their pricing should be competitive.



## 2 SYNDEO® GELLING: AN INNOVATIVE TEXTURING SOLUTION

No single ingredient can mimic the characteristics of gelatin. The market for vegan alternatives to gelatin continues to soar. However, finding the right texture and hardness can be very challenging for manufacturers. Syndeo® Gelling is an effective vegan gelling agent that will bring texture and mouthfeel improvement to candies, marshmallows, jellies, mousses and more.

Thanks to Alland & Robert expertise and research, Syndeo® Gelling is specifically designed to bring stabilizing and texturing properties to plant-based food products.

#### COMPOSITION

Syndeo® Gelling is made with acacia gum mixed with plant-based, natural hydrocolloids perfectly designed for the formulation of vegan food products. More information and labelling upon request.



#### APPLICATIONS



#### BENEFITS OF SYNDEO® GELLING:

- Gelling, thickening, stabilizing and binding properties
- Fulfills new needs regarding texture improvement
- Provides sensory experience and mouthfeel improvement

#### SYNDEO® GELLING IS EASY-TO-USE:

- Odorless, tasteless and colorless
- Compatible with any ingredients

#### INSTRUCTIONS TO ACTIVATE AND PRESERVE SYNDEO® GELLING FUNCTIONALITIES:

- Boil a few minutes
- Use in presence of ions Na<sup>+</sup>, K<sup>+</sup> or Ca<sup>++</sup>
- If applicable, acids must be added at the end of the recipe



# 3/ OUR RESEARCH:TEXTURE AND SENSORY ANALYSIS

## Texture Profile Analysis (TPA)

TPA is used to characterize the many aspects of the texture of a product, and a method conventionally used to simulate the behavior of a product during chewing. Our research defined and evaluated 4 key texture attributes that are important for the sensory perception of the consumers in confectioneries.

- **Hardness (g):** Highest peak force measured during first compression
- **Adhesiveness (mJ):** Area under the curve for the first negative peak
- **Cohesiveness:** Measurement of how well the structure of a product withstands compression
- **Resilience:** Measurement of how well a sample recovers from deformation in relation to speed and forces delivered

These characteristics are key to perfectly design a gelling agent that meet consumers' expectations for perfect textures as well as formulators' needs for specific properties.

### RESEARCH EQUIPMENT: CT3 Texturometer

with 4.5 kg load cell

Probe cylinder 2 mm D, 20 mm L (TA 39)

Fixture Base Table (TA-BT-KIT)

Texture Pro CT Software

## Comparison of textures

TPA was performed for gummies and marshmallows.

For gummies, three different type of products were manufactured using gelatin, pectin, and Syndeo® Gelling as jellifying agents on representative samples.

For marshmallows, three different type of products were manufactured using gelatin, a mix of carrageenan and starch, and Syndeo® Gelling as gellifying agents on representative samples.

The research successfully discriminated the samples and demonstrated the hardness and the adhesiveness as key parameters of this differentiation.

The parameters of resilience and cohesiveness provided an invaluable indication of products elasticity and overall strength respectively.

## Sensory analysis

Alland & Robert uses a trained panel for sensory analysis in applicative research. Examining new products is essential to assess and evaluate properties such as texture, flavor, appearance, smell and other more detailed characteristics. This method is key to Alland & Robert research, in order to assess the quality, perception and acceptability of products developed by the applicative research team.



# 4/ SYNDEO® GELLING IN VEGAN PRODUCTS

## Vegan jellified candies

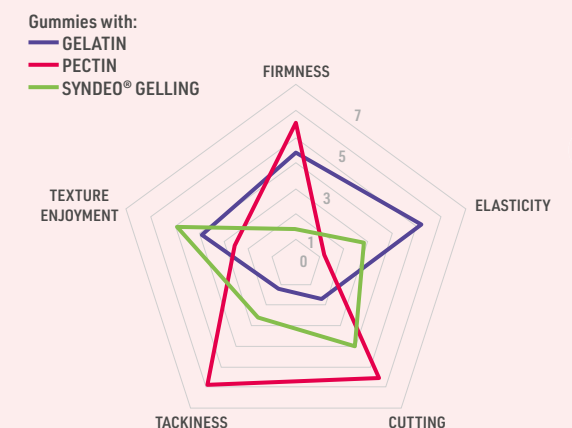
Characteristics of a gelatin-free product must maintain easy depositing, sensory experience, product integrity and overall product quality.

- Gelatin is identified thanks to its elasticity and low adhesiveness. Pectin provides much harder textures, glue-like texture and low elasticity.
- Syndeo® Gelling provides low hardness and much more elasticity than pectin, while not creating adhesiveness.

Syndeo® Gelling offers a texture that's perfectly balanced between a gelatin gel and a pectin gel.

### SENSORY ANALYSIS

The sensory analysis is in line with the results obtained by the texturometer.



### Vegan jellified candies

#### Ingredients (in % weight)

|                       |      |
|-----------------------|------|
| Water                 | 38.3 |
| Sucrose               | 19.2 |
| Glucose syrup 40 DE   | 11.5 |
| Glucose syrup 60 DE   | 26.9 |
| SYNDEO® GELLING       | 3.1  |
| Citric acid (E330)    | 0.6  |
| Sodium citrate (E331) | 0.4  |

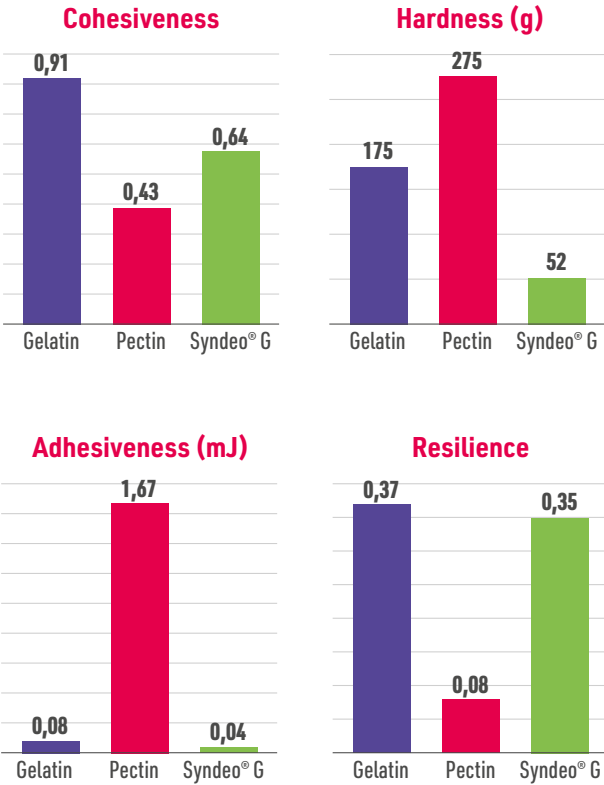
#### Instructions

- 1/ Mix water, glucose syrups and sodium citrate for 2 minutes at 80°C;
- 2/ Add sucrose and the SYNDEO® GELLING under stirring: blend 8 minutes at 120°C;
- 3/ Add and mix citric acid just before starch deposit step;
- 4/ Deposit in starch trays and dry jellies for 72 to 96 hours at 32°C.

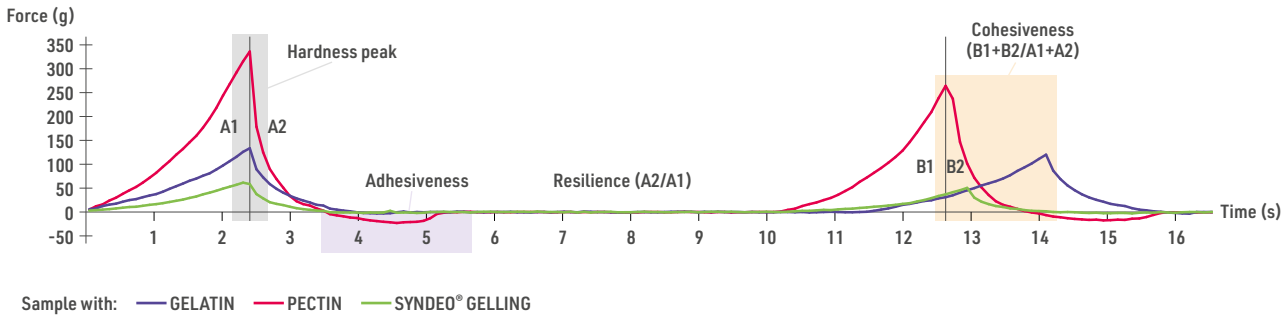




The signature of a gelatin gel is high cohesiveness and relatively high hardness. Pectin gels show higher hardness and adhesiveness than gelatin. On cohesiveness, Syndeo® Gelling provide a middle ground between gelatin and pectin. Pectin shows low resilience (elastic recovery) and high adhesiveness, although Syndeo® Gelling and gelatin provide a similar expected resilience.



Texture Profile Analysis of jelly candies



Syndeo® Gelling offers a new original texture for jellified candies, softer than gelatin and more elastic than pectin.

|            | Gelatin | Pectin | Syndeo® G |
|------------|---------|--------|-----------|
| Firmness   | +++     | ++++   | +         |
| Elasticity | ++++    | -      | ++        |
| Tackiness  | +       | ++++   | ++        |

CONCLUSION

Syndeo® Gelling is likely to bring more softness than pectin and create less glue-like products. It provides a resilient and adhesive behavior that is similar to gelatin.

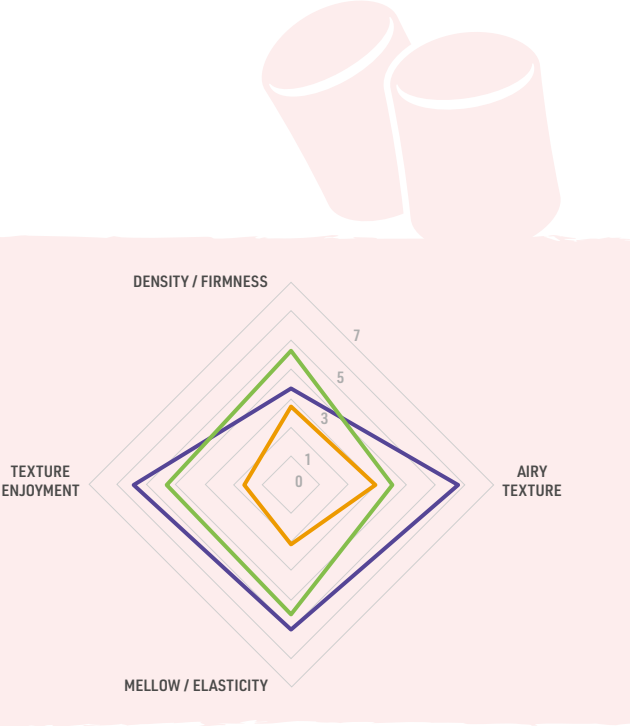
Vegan marshmallows

Syndeo® Gelling is an effective substitute for gelatin that does not compromise on the sensory properties or the stability of marshmallows.

SENSORY ANALYSIS

The sensory analysis is in line with the results obtained by the texturometer. It showed that Syndeo® Gelling is able to perfectly mimic the gelatin behavior, while providing the same sensory enjoyment.

Marshmallows with:  
— GELATIN  
— STARCH + CARRAGEENAN  
— SYNDEO® GELLING



Vegan marshmallows

Ingredients (in % weight)

| BLEND 1               |      |
|-----------------------|------|
| Water                 | 18.5 |
| Sucrose               | 18.5 |
| Glucose syrup 40 DE   | 11.9 |
| Glucose syrup 60 DE   | 27.9 |
| SYNDEO® GELLING       | 3.0  |
| Sodium citrate (E331) | 0.4  |
| BLEND 2               |      |
| Water                 | 9.2  |
| Sucrose               | 9.4  |
| Vegetal proteins      | 1.2  |

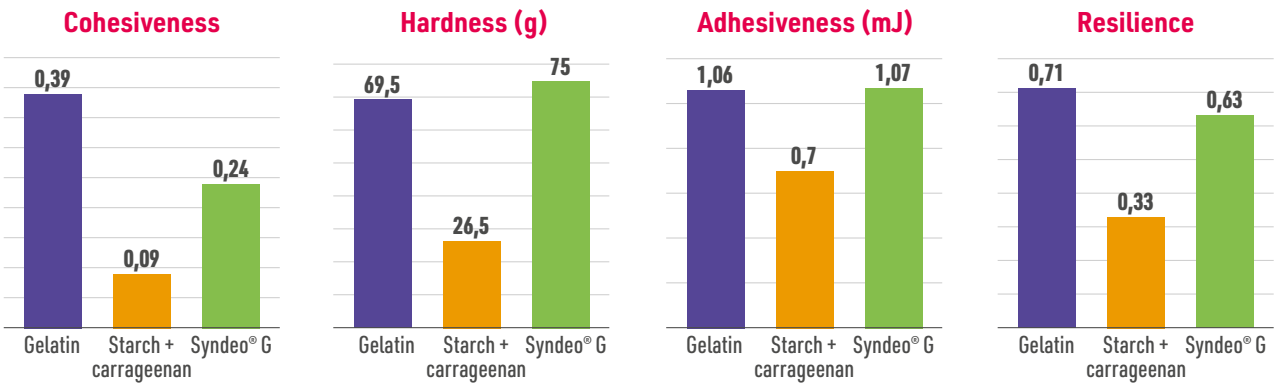
Instructions

- 1/ Blend 1: mix all the ingredients with a powerful heating mixer (speed 7) for 5 minutes at 120°C;
- 2/ Blend 2: mix all the ingredients with a powerful heating mixer (speed 7) for 5 minutes at 70°C;
- 3/ Mix the 2 blends with the mixer with a lower speed (3) for 2 minutes;
- 4/ Deposit in starch trays and dry marshmallows at least 24 hours at 32°C.

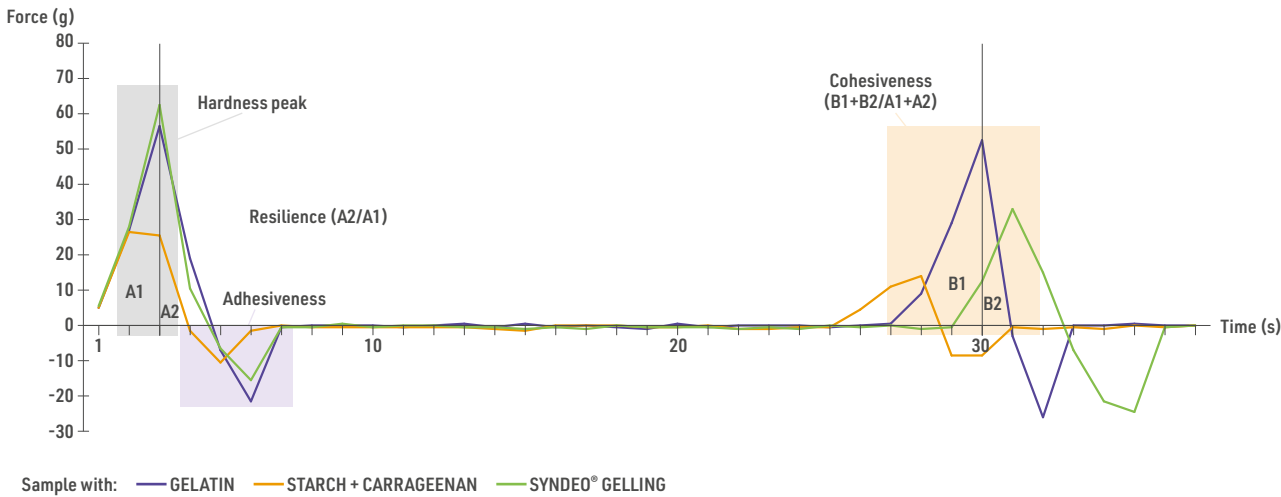


Marshmallows manufactured with gelatin behave similarly to vegan marshmallows prepared with Syndeo® Gelling, in terms of hardness, adhesiveness and resilience. Syndeo® Gelling provides a balanced cohesiveness between

the gelatin gel and the gel made with a mix of starch and carrageenan. Syndeo® Gelling provides excellent results for the manufacturing of vegan marshmallows.



Texture Profile Analysis of marshmallows



CONCLUSION

Syndeo® Gelling is a very efficient and convincing solution for gelatin replacement in vegan marshmallows.



Vegan mousses

Thanks to Syndeo® Gelling, replicating the mouthfeel and texture of a regular mousse as a delicious vegan mousse is possible. Whether chocolate or fruit mousse, Syndeo® Gelling

provides consumers with a creamy but not fatty mouthfeel and great sensory experience, including the softness, light and airy texture.

Further information about using Syndeo® Gelling in mousses is available upon request.



Vegan mousses

Ingredients (in % weight)

| BLEND 1               |      |
|-----------------------|------|
| Water                 | 20   |
| Vegetal proteins      | 2.5  |
| Icing sugar           | 2.5  |
| BLEND 2               |      |
| Mango puree           | 37   |
| Coconut milk          | 37   |
| Sodium citrate (E331) | 0.13 |
| SYNDEO® GELLING       | 0.87 |

Instructions

- Blend 1:**
- 1/ Mix water and vegetal proteins for 2 min at speed 5; Whisk for 2 min at speed 8; Add icing sugar and mix for 30 sec at speed 5; Whisk for 2 min at speed 8;
- Blend 2:**
- 2/ Mix all the ingredient together for 1 min at speed 3; Heat at 90°C for 3 min at speed 3;
  - 3/ Slowly mix together with a spatula until getting an homogeneous mousse;
  - 4/ Pour into small glasses and refrigerate for at least 4 hours.

# ALLAND & ROBERT

## We are your expert of acacia gum.

Created in 1884, Alland & Robert is a family company and a leader in tree exudates, with a strong focus on acacia gum. Alland & Robert's main focus is on customized R&D, customer service and partnerships with internationally recognized universities.

Alland & Robert exports to over 70 countries through a network of 40 distributors.

### PRODUCT CHARACTERISTICS

Creamy white powder available in 25 kg paper bags. Other packaging available on request.



- GMO-free, allergen-free
- Halal and Kosher certified
- Vegan ingredient
- Shelf stable with a shelf life of 3 years

## Why choose us?

- A strong expertise on vegetal and natural hydrocolloids thanks to a dedicated R&D and laboratory team, investment in ultra modern equipments, research programs and exclusive partnerships with globally recognized universities.
- Production and laboratory that reach the highest quality standards through international certifications, including BRC and ISO certifications, HACCP procedures, social and societal commitment through a membership to the SEDEX.
- A strong will to develop the quality and safety of products through investments in highly technical production equipments on two different plants.
- Solid partnerships with an extensive network of African suppliers to ensure security of supply and work to develop local communities related to tree exudates.
- A focus on sustainable development, social investment and environmental awareness to maintain the naturality of products, a sustainable harvest of natural resources and the respect of people and stakeholders.



Ask us anything at: [info@allandetrobert.fr](mailto:info@allandetrobert.fr)

Discover more about us:

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