

## Case Study

# Reimagining Plant-based Meat:

Sustainable Binders and Natural Colorants for the Future



## Client's Objective

The client aimed to reformulate their plant-based meat (PBM) products by exploring sustainable and clean-label alternatives to methylcellulose as binders. Additionally, they sought natural color additives that could replicate the visual appeal of real meat, addressing both sustainability and consumer preferences.

## Our Strategic Approach

To support the client's objective, we adopted a systematic, research-driven methodology that involved material investigation, competitive landscape analysis, and partner identification. This approach ensured alignment with market trends and provided actionable solutions around:

### Comprehensive Analysis of Sustainable Binders

- We conducted an in-depth evaluation of potential binders that are clean-label, sustainable, and derived from natural origins to prioritize them based on their functional properties, including texture and consistency, and regulatory compliance across key areas.

### Colorant Solution Identification

- We explored natural colorants capable of replicating the color & visual appeal of traditional meat by assessing colorants for stability, production capacity, dosage levels, and cost-effectiveness.
- Ensuring alignment with regulatory requirements and specific use-case scenarios in PBM production.
- Highlighting colorants derived from sustainable sources with minimal environmental footprint.

### Ingredient Landscape and Partner Mapping

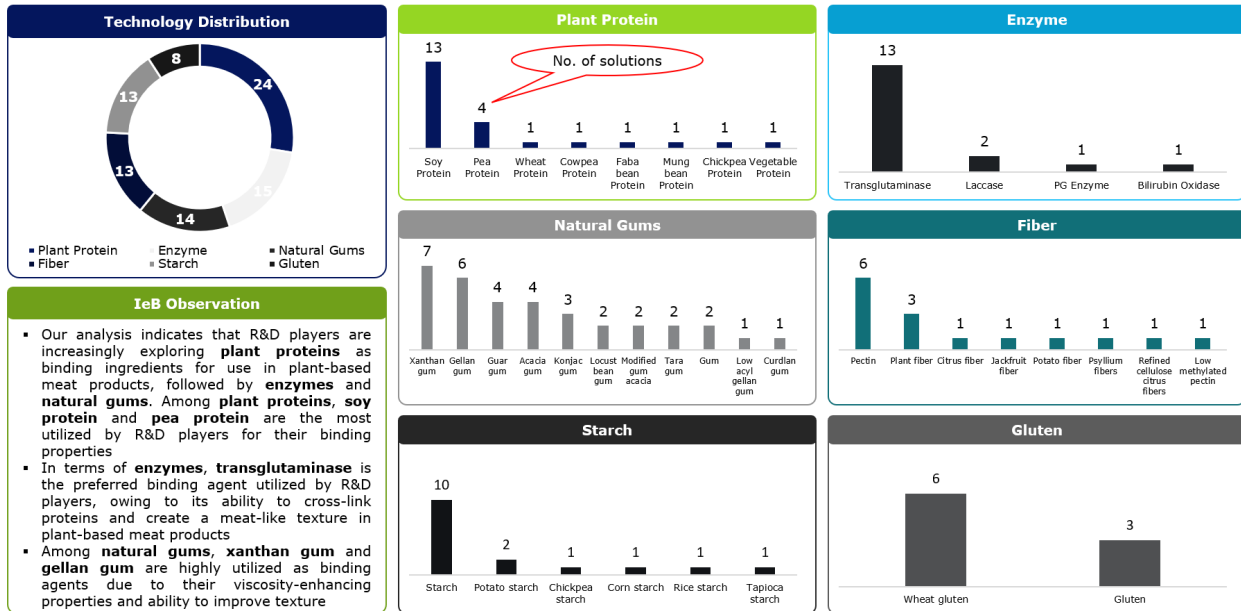
- We conducted an ingredient landscape analysis to identify key innovative and sustainable solutions for binders and colorants. Through an evaluation of market strategies, production capabilities, and technology readiness, we shortlisted 2 to 3 best-fit methyl cellulose replacers within the binder category and 2 to 3 best-fit partners in the colorant category.



## Snippet

### Technology Distribution of Binding Ingredients

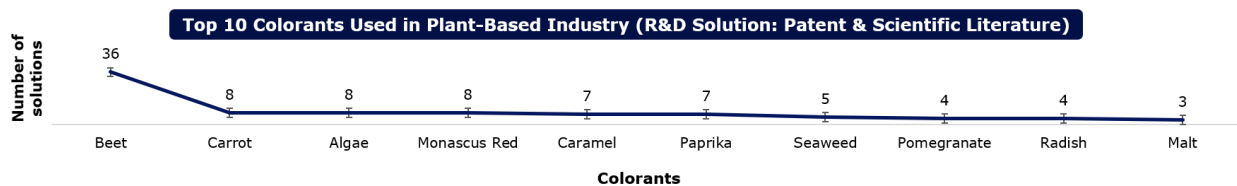
R&D players are actively exploring plant proteins, enzymes, and natural gums among others as binding ingredients to enhance the texture and mouthfeel of plant-based meat products



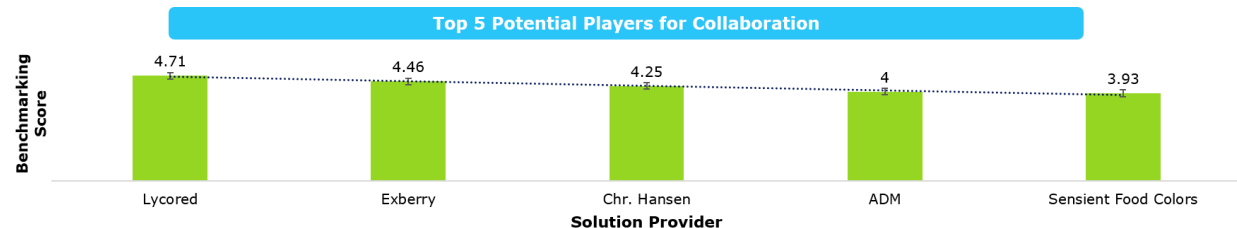
Note: Here, number denotes the number of R&D solutions (patents + scientific literature)

### Executive Summary: Sustainable Colorants for Plant-Based Meat

Lycored is a top-performing company based on evaluated parameters and its emphasis on sustainability and natural ingredients makes it an attractive partner for potential business alliances



- Based on a comprehensive analysis of **80 R&D solutions (70 patents and 10 scientific literature)**, it has been determined that natural colorants derived from sources such as beet, carrot, algae, monascus red, caramel, paprika, seaweed, pomegranate, radish and malt are being extensively researched by R&D (Patent & Scientific Literature) players for the creation of meat analogue products
- The research findings indicate that **beet** is the most frequently used natural colorant, followed by **carrot** and **algae**



- Based on an in-depth analysis of 30 players, we have benchmarked these companies based on several key parameters such as advantages offered, certification, regulatory status of colorant, market reach, and company revenue, among others, to identify the best-fit partners for a potential business alliance
- After evaluating the companies, we have determined that Lycored emerges as the top-scoring player based on the afore-mentioned parameters, followed by Exberry and Chr. Hansen



## Impact to Client

Our recommendations enabled the client to prioritize and implement the most suitable options for reformulating their PBM products:

### ● Methylcellulose Replacers

The client prioritized 2 to 3 best-fit binders chosen for their sustainability potential, natural origin, clean-label compliance, and regulatory feasibility. These alternatives maintained the desired texture and binding properties of their PBM products while aligning with the client's sustainability goals.

### ● Natural Colorant Solutions

The client also identified and partnered with 2 to 3 key providers offering natural colorants that met cost, dosage, and production requirements. These solutions successfully replicated the appearance of real meat, enhancing the visual appeal of PBM products and satisfying consumer expectations.

## Conclusion

Through a targeted, data-driven approach, we empowered the client to reformulate their PBM products with sustainable, clean-label solutions. By identifying high-impact binders and natural colorants, we ensured the reformulated products met regulatory standards, addressed market demands, and aligned with the client's sustainability commitments. Our insights facilitated strategic partnerships with industry leaders, enabling the client to achieve their goals of product differentiation and consumer appeal in the competitive PBM market.



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