The Perfect Blend
MEETING CONSUMER PREFERENCES FOR PLANT-BASED PROTEINS
Evolving Consumer Preferences Create New Challenges

The explosive growth in consumer demand for plant-based protein has been driven primarily by the flexitarian movement to reduce meat in the diet, not eliminate it entirely. This presents a unique opportunity to deliver consumer-preferred, protein-forward foods and drinks.

Crafting successful products that fit the bill takes a sophisticated approach. Taste, texture and other sensory attributes are all legitimate concerns as manufacturers strive to add new variety to the category. Finding the right blend of plant-based ingredients, or even the right blend of animal and plant-based ingredients, is essential.

Taste & nutrition are critical to flexitarians—they have to have it all.

—ADM OutsideVoice™ Protein Perception & Awareness Study

UNDERSTANDING THE OPPORTUNITY

The rapid growth in consumer demand for plant proteins challenges us all to bring our “A” game. With no room for false starts, it’s all about formulating without compromising on great taste, ideal texture or superior nutrition.
CONSUMER PERCEPTIONS OF PLANT-BASED PROTEINS:¹

<table>
<thead>
<tr>
<th>TASTE/FLAVOR NOT IDEAL</th>
<th>TEXTURE NOT IDEAL</th>
<th>LACK OF VARIETY</th>
</tr>
</thead>
<tbody>
<tr>
<td>51%</td>
<td>33%</td>
<td>29%</td>
</tr>
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As consumer expectations increase, so do the opportunities.
Retail sales of plant-based products have generated more than five times the dollar sales growth of the overall U.S. retail food market.² Restaurant sales of meat-alternative products jumped 268% from 2018 to 2019.³ Research tells us that blending proteins could hold the key to profiting from this burgeoning market.

TO PUT IT ALL IN PERSPECTIVE, ADM CONDUCTED A STUDY TO MEASURE CONSUMER ACCEPTANCE ACROSS FOUR TYPES OF BURGERS.⁴

Flexitarian consumers preferred the burger that was a blend of 50% soy and 50% other plant proteins. They also said they would pay more for it. This test highlights consumer perceptions of plant-based foods and shows how a customized blend can overcome many of the sensory and functional challenges.

At ADM, we’ll work with you to develop a blended solution that offers the nutritional profile consumers prefer and the eating experience they demand.
What are some other considerations?

Consumers today want it all. They demand more from their food than ever before.

An increasing number of consumers seek plant-based products that deliver quality protein without sacrificing taste. The challenge for product developers and formulators is to compete with the tastes, textures, functionality, visual appeal and nutritional profile of meat, poultry and dairy products.

IT TAKES A DEEP UNDERSTANDING OF CONSUMER TRENDS AND PREFERENCES, THE RIGHT BLEND OF INGREDIENTS, AND TECHNICAL INGENUITY TO BRING IT ALL TOGETHER AND ACHIEVE SUCCESS.
How to win with consumers

The challenge isn’t just about what proteins work well together. It’s about understanding the desired eating or drinking experience and finding the best ingredient and flavor combinations to win with consumers.

HERE ARE THE FIVE KEY ATTRIBUTES THAT MATTER WHEN CREATING PROTEIN-FORWARD FOODS:

1. **TASTE**
   
   *It’s not about dropping in flavor.* Instead, achieving great taste requires bringing together high-quality, neutral-tasting plant-based proteins and combining them with the latest food technologies and deep technical expertise to create complementary solutions.

   That’s why we start with an unparalleled portfolio of plant-based proteins and taste solutions. Then, our cross-functional team of culinary, flavor, ingredient, product development, marketing and sensory experts collaborate to quickly solve your application challenges and deliver on consumer expectations for great taste.

2. **TEXTURE & CHEW DOWN**

   *Authenticity plays a huge role when it comes to texture.* That’s why formulation often requires an assortment of proteins with different qualities to deliver a familiar experience and avoid creating one homogenous, unappetizing bite. Other times, it’s about making plant-based products that are decidedly whole-food forward. Whether it’s a mix of beans, seeds for crunch or grains for chewiness, we’ve got just what you need to deliver whole-food nutrition and diverse layers of texture for the perfect bite.
3. **FUNCTIONALITY**

When it comes to functionality, it’s important to understand how all of the different ingredients work together. Soy tends to be the gold standard. It can help with gelling, binding, water retention, texture and so much more. We’ve also invested in perfecting the many functional qualities of pea—making it a great solution for those seeking to avoid allergens. Beans, pulses, seeds and grains are also excellent options, each with their own specific benefits.

One of the distinct advantages of working with ADM is our broad expertise. Our culinary and product development teams are able to cross collaborate and take learnings from our myriad of expertise across the food and beverage landscape. It’s never just one function or benefit. We think about your product holistically and are here to deliver the total package.

4. **NUTRITIONAL PROFILE**

Nutrition is key. Whether you’re looking to create a more complete protein, deliver protein levels comparable to animal protein or simply create a well-rounded nutrition panel, there isn’t a one-size-fits-all approach.

Our team is constantly working on matching complementary ingredients to achieve the nutritional profiles that consumers demand. With a knowledge base that knows no equal, we’ll help you build a nutritional profile that’s simply irresistible.

5. **COLOR & VISUAL APPEAL**

Authenticity in color and appearance is very important—especially in meat and dairy alternatives. And, aligning the appearance to the flavor and texture is critical.

While our product development and culinary teams perfect other sensory and functional elements, our dedicated natural color designers focus on balancing color blends for an appetizing, authentic look.
Chicken-Style Patty

CHALLENGE
Produce a chicken-style patty with the appearance, bite and flavor consumers expect from chicken that is a 100% plant-based protein product.

THE ADM ADVANTAGE
Our development and culinary teams are adept at blending plant-based proteins to replicate various meat products.

SOLUTION
We blended two high-quality soy proteins to perfectly mimic the appearance of a chicken patty—with the familiar flavor and chew down experience consumers expect.

Concept Highlights
- 21g of plant-based protein per serving
- Gluten free

Featured Ingredients
- Arcon® T Textured Soy Protein Concentrate
- Pro-Fam® Soy Protein Isolate
- Natural Chicken-Type Flavor (Vegan)
- Natural Protein Masking Flavor

Insight:
Consumers are choosing to eat more plant-based proteins and want better tasting options.

Nutrition Facts

CONSUMERS TOLD US
“Nice chicken-like aroma!”
“I like that this is high in protein and fiber.”
The Perfect Blend: Meeting Consumer Preferences for Plant-Based Proteins

Peruvian Black Bean “Meatball”

CHALLENGE
Deliver a whole-food, nutritious and 100% plant-based meatball with great texture.

THE ADM ADVANTAGE
Our ability to blend ingredients and create diverse textures is unmatched.

SOLUTION
Packed with fiber and an alluring mix of whole-food ingredients, we came up with a surefire winner. A blend of black beans, soy and seeds recreated an authentic meatball texture that stands up to reheat-and-hold situations with or without sauce.

Concept Highlight
- 9g of plant-based protein per serving

Featured Ingredients
- HiSolate™ TexSoy crumbles
- HiSolate™ Soy Flour
- VegeFull™ Black Bean Grits
- VegeFull™ Whole Black Beans
- Red Quinoa
- Chipped Pepitas
- Natural Roast Pork-Type Flavor (Vegan)
- Natural Protein Masking Flavor
- Peruvian Roasted Spice Paste

Nutrition Facts

<table>
<thead>
<tr>
<th>Amount Per Serving</th>
<th>Calories</th>
<th>180</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Fat</td>
<td>7g</td>
<td>9%</td>
</tr>
<tr>
<td>Saturated Fat</td>
<td>0.5g</td>
<td>3%</td>
</tr>
<tr>
<td>Trans Fat</td>
<td>0g</td>
<td></td>
</tr>
<tr>
<td>Cholesterol</td>
<td>0mg</td>
<td>0%</td>
</tr>
<tr>
<td>Sodium</td>
<td>850mg</td>
<td>28%</td>
</tr>
<tr>
<td>Total Carbohydrate</td>
<td>20g</td>
<td>7%</td>
</tr>
<tr>
<td>Dietary Fiber</td>
<td>3g</td>
<td>11%</td>
</tr>
<tr>
<td>Total Sugars</td>
<td>3g</td>
<td></td>
</tr>
<tr>
<td>Added Sugars</td>
<td>1g</td>
<td>2%</td>
</tr>
<tr>
<td>Protein</td>
<td>9g</td>
<td></td>
</tr>
<tr>
<td>Vitamin D</td>
<td>2mcg</td>
<td>10%</td>
</tr>
<tr>
<td>Calcium</td>
<td>80mg</td>
<td>6%</td>
</tr>
<tr>
<td>Iron</td>
<td>3mg</td>
<td>15%</td>
</tr>
<tr>
<td>Potassium</td>
<td>394mg</td>
<td>8%</td>
</tr>
</tbody>
</table>

*The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

CONSUMERS TOLD US
“It looks great...nutty, seedy, meaty and beany all in one!”
“The beans and seasoning are great!”
Chorizo-Style Crumbles

CHALLENGE
Make a delicious, plant-based and non-allergen topping.

THE ADM ADVANTAGE
Our culinary-focused teams expertly blend and test ingredients until they achieve the preferred flavors and textures.

SOLUTION
A carefully selected blend of peas, seeds and grains delivered chorizo’s signature texture, bite and chew down. The result was a craveable, indulgent, non-allergen topping for anything from pizza to salads to nachos.

Concept Highlights
• 13g of plant-based protein per serving
• Non-allergen

Featured Ingredients
• VegeFull™ Red Bean Grits
• ProFam® Pea Protein
• Sorghum Crisps
• Sunflower Seeds
• Hemp Seeds
• High-Oleic Sunflower Oil
• Natural Roast Pork-Type Flavor
• Natural Chorizo Spice-Type Flavor

Nutrition Facts
servings per container 3/4 Cup (85g)

Amount Per Serving Calories 180

% Daily Value*
Total Fat 9g 12%
Saturated Fat 0.5g 3%
Trans Fat 0g
Cholesterol 0mg 0%
Sodium 500mg 22%
Total Carbohydrate 16g 6%
Dietary Fiber 2g 7%
Total Sugars 1g
Includes 0g Added Sugars 0%
Protein 13g
Vitamin D 0mcg 0%
Calcium 56mg 4%
Iron 3mg 15%
Potassium 368mg 8%

*The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

CONSUMERS TOLD US
“This tastes like chorizo. Flavorful!”
“This would be a great topping for pizza, nachos, or a cracker”
Make ADM Your First Call for Protein Solutions

A pioneer and global leader in plant-based proteins, ADM has the technical ingenuity, extensive product portfolio and deep understanding of how ingredients work together to help you get ahead and stay ahead in the market.

As both a nutrition company and a flavor company, we don’t just drop in flavor or ingredients. We bring together our culinary, marketing, product development and ingredient development experts to help you quickly get to market with products that consumers love.

ADM’S Protein Pantry

No matter what the challenge is, ADM’s vast portfolio, technical ingenuity and creative approach can help you solve it.

<table>
<thead>
<tr>
<th>SOY</th>
<th>BEANS, PEAS &amp; PULSES</th>
<th>ANCIENT GRAINS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whole – Dehulled</td>
<td>Black Beans</td>
<td>Amaranth</td>
</tr>
<tr>
<td>Flour &amp; Grits</td>
<td>Chickpeas</td>
<td>Barley</td>
</tr>
<tr>
<td>Standard &amp; Non-GMO Identity Preserved</td>
<td>Dark Red Kidney Beans</td>
<td>Buckwheat</td>
</tr>
<tr>
<td>Expeller Pressed</td>
<td>Fava Beans</td>
<td>Flax</td>
</tr>
<tr>
<td>Non-GMO &amp; Organic</td>
<td>Great Northern Beans</td>
<td>Millet</td>
</tr>
<tr>
<td>Textured Soy Flour (TVP)</td>
<td>Green Lentil</td>
<td>Quinoa</td>
</tr>
<tr>
<td>Standard &amp; Non-GMO Identity Preserved</td>
<td>Green Pea</td>
<td>Sorghum</td>
</tr>
<tr>
<td>Texturized Inclusions</td>
<td>Light Red Kidney Beans</td>
<td></td>
</tr>
<tr>
<td>Standard &amp; Non-GMO Identity Preserved</td>
<td>Mayocoba Beans</td>
<td></td>
</tr>
<tr>
<td>Non-GMO &amp; Organic</td>
<td>Mung Bean</td>
<td></td>
</tr>
<tr>
<td>SPC</td>
<td>Navy Beans</td>
<td></td>
</tr>
<tr>
<td>Standard &amp; Non-GMO Identity Preserved</td>
<td>Pea Protein</td>
<td></td>
</tr>
<tr>
<td>Textured Soy Protein Concentrates (SPC)</td>
<td>Pink Beans</td>
<td></td>
</tr>
<tr>
<td>Standard &amp; Non-GMO Identity Preserved</td>
<td>Pinto Beans</td>
<td></td>
</tr>
<tr>
<td>Expeller Pressed</td>
<td>Red Lentil</td>
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</tr>
<tr>
<td>Non-GMO &amp; Organic</td>
<td>Small Red Beans</td>
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</tr>
<tr>
<td>Functional Concentrates</td>
<td>White Kidney Beans</td>
<td></td>
</tr>
<tr>
<td>Standard &amp; Non-GMO Identity Preserved</td>
<td>Yellow Pea</td>
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</tr>
<tr>
<td>Expeller Pressed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-GMO</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organic Concentrates</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Isolates</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standard &amp; Non-GMO Identity Preserved</td>
<td></td>
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</tr>
</tbody>
</table>

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No matter what the challenge is, ADM’s vast portfolio, technical ingenuity and creative approach can help you solve it.

<table>
<thead>
<tr>
<th>SEEDS &amp; NUTS</th>
<th>WHEAT PROTEINS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seeds</td>
<td>Wheat protein isolates, available in various options</td>
</tr>
<tr>
<td>Chia</td>
<td>Standard vital wheat gluten</td>
</tr>
<tr>
<td>Hemp</td>
<td>Higher protein vital wheat gluten</td>
</tr>
<tr>
<td>Pumpkin</td>
<td>Premium high protein vital wheat gluten</td>
</tr>
<tr>
<td>Sunflower</td>
<td>High protein, low flavor vital wheat gluten</td>
</tr>
<tr>
<td>Nuts</td>
<td>Almonds</td>
</tr>
<tr>
<td>Hazelnuts</td>
<td>Cashews</td>
</tr>
<tr>
<td>Macadamia</td>
<td>Pecans</td>
</tr>
<tr>
<td>Peanuts</td>
<td>Pine Nuts</td>
</tr>
<tr>
<td>Pecans</td>
<td>Walnuts</td>
</tr>
</tbody>
</table>
Application Expertise and Support

ADM offers end-to-end support when it comes to creating the next generation foods consumers crave—including high-quality, sustainable ingredients from farm to plate. From market insights to customized product development, ADM’s cross-functional team of experts help you get to market faster without compromising on taste.

FIND OUT MORE ABOUT ADM PLANT-BASED PROTEIN SOLUTIONS

email food@adm.com or call 844-441-FOOD

SOURCES
1 ADM OutsideVoice™ Perception & Awareness Study, May 2019
2 Supermarketnews.com, “Retail sales of plant-based foods surge,” July 2019
3 NRN.com, “5 more companies tackle plant-based meat alternatives,” June 2019
4 ADM OutsideVoice™ Primary Research Study, Plant Protein Blends Concept Test, August 2019

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