

ELEVATE YOUR
**PLANT
BASED**
PROTEIN PRODUCTION

A COMPREHENSIVE GUIDE



WE OFFER

**PERFECT
MIXING
TECHNOLOGIES**

PLANT BASED PROTEIN



INTRODUCTION

Welcome to the forefront of protein manufacturing innovation! With the rising demand for plantbased alternatives, it's time to revolutionize your production process. This brochure serves as your comprehensive guide to mastering the art of crafting meat alternatives from plant-based proteins.

Understanding the Process

Crafting high-quality plant-based protein products requires precision and expertise across several key stages:

1. INGREDIENT SELECTION

Start with carefully sourced plant-based proteins, choosing from options like soy, pea, lentil, chickpea, and more. Consider factors like flavor profile, nutritional content, and allergen information.

2. MIXING & BLENDING

Achieving the perfect blend of powders and liquids is crucial for consistent texture and flavor. Industrial mixers play a pivotal role in this process. Let's delve deeper into the types of mixers commonly used

RIBBON BLENDERS

These versatile blenders utilize a ribbon-shaped agitator to ensure thorough blending of powders and liquids. They are ideal for homogeneous mixing of ingredients with similar or varying particle sizes and densities, but are not an ideal choice in regards to efficiencies. Ribbon mixers have a slight disadvantage as their mix times are longer, heat is generated during the mixing cycle and can be a concern, which is why often times they are ordered with cooling jackets.



PADDLE & PLOW MIXERS

With a gentle mixing action, paddle & plow mixers are perfect for blending delicate ingredients without compromising protein integrity. They are particularly suitable for formulations requiring minimal-medium shear force. In addition, these mixers can be equipped with optional choppers which eliminate agglomeration if adding liquids while blending. The choppers can be individually controlled from the main mixer and therefore can be a very useful tool in eliminating lumps, bumps, & clumps. These mixers can also be ordered with heating & cooling jackets as well as vacuum



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SIGMA MIXERS

Known for their robust mixing action, sigma mixers are designed to handle materials of varying viscosities and densities. Their unique kneading motion ensures thorough mixing, making them ideal for high-viscosity mixtures. Sigma mixers can be equipped with such options as vacuum, heating & cooling jackets, as well as extrusion which can allow for forming of finished product when discharged.



FLUIDIZED BED MIXERS

These mixers offer high-speed mixing capabilities by suspending particles in an air stream. They ensure rapid and uniform distribution of powders and liquids of various densities, making them suitable for time-sensitive production processes. They are considered to be no-low shearing mixers and can be ordered with choppers to avoid lumps, bumps, & clumps, and can also be ordered with heating & cooling jackets.



HIGH SHEAR MIXERS

For applications requiring precise blending and dispersion, high shear mixers are indispensable. They utilize intense mechanical forces to break down particles and disperse them evenly throughout the mixture. They are very versatile mixers and offer a system that allows the users to change batches rapidly with the mobile mixing vessel chambers. Our high shear mixers can also be ordered with heating & cooling jackets, making cook & chill applications very easy, as well as vacuum



3. PRE-CONDITIONING

Ensure uniform moisture content and particle size distribution before extrusion with pre-conditioners. These units optimize the mixture for further processing by enhancing flow properties and consistency

4. EXTRUSION

Shape the mixture into the desired form, whether burgers, sausages, nuggets, or other meat alternatives, through this transformative process. Extruders come in various configurations, including single-screw, twin-screw, and co-rotating designs, each offering unique benefits in terms of throughput, product versatility, and process control.



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OTHER EQUIPMENT

In addition to mixers, various other equipment plays a crucial role in the production process:

1. CONVEYORS

Efficient conveyors transport ingredients and products throughout the production line, ensuring smooth workflow and minimal downtime. Choose from options like belt conveyors, screw conveyors, and pneumatic conveyors based on your specific requirements.

2. COOK & CHILL EQUIPMENT

Cook & chill equipment varies from application to application and we at PerMix are at the forefront of cook & chill technology

3. FORMING EQUIPMENT

Shape your products precisely with forming equipment tailored to your specific needs. Whether you're producing patties, links, or nuggets, choose from a variety of forming machines, including hydraulic presses, molders, and extrusion dies, to achieve the desired shape and texture.

CONCLUSION

Equip your plant-based protein production with the right tools and expertise to unlock endless possibilities. Embrace innovation, streamline your process, and meet the growing demand for sustainable alternatives with confidence

Ready to elevate your plant-based protein production?

Contact Us Today To Explore
customized solutions tailored to your unique requirements



This brochure provides general information and does not constitute professional advice. Always consult with experts and adhere to industry regulations for optimal results



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