## **OUR SERVICE**

**Process Technology** 

Piping and Instrumentation

Process Flow Diagram (PFD)

**Process Description** 

Material Balance

Diagram (PID)

Strains Choice & Fomula Design

Instrument Control

Control Scheme or Control Plan Instrument Data Sheet

**Equipment Selection** & Production

> **Equipment Description Equipment Data Sheet Equipment Manufacturing**

On-Site Project Services

> Installation Guidance Commissioning Technical Support

Quality Control and **Operating Procedures** (QC & OP)

> Analysis and Testing Procedures Analysis and Testing Projects

SCOPE OF



Turnkey Solution Supplier in Agriculture, Grain, Food and Cold Chain Industry.



## **GRAIN-BASED BIOCHEMICAL SOLUTIONS**

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# GRAIN-BASED BIOCHEMICAL SOLUTIONS

**Industry-Leading:** At the core of our operations are internationally advanced strains, processes, and production technologies, which position us at the forefront of the industry.

**Raw Materials:** We utilize a diverse range of raw materials, including corn, wheat, rice, soybean, pea, and potato, among others.

**Product Diversity:** Our product portfolio encompasses a wide array of items such as sugar, modified starch, amino acids, organic acids, alcohol, biodiesel, and vegetable protein.

**Global Reach:** We have successfully executed numerous design and electromechanical equipment turnkey projects across various regions, including Eastern Europe, the Middle East, Southeast Asia, and the Commonwealth of Independent States (CIS).



Soy Protein Pea Protein Wheat Protein



Fructose Syrup, Glucose Maltose Syrup, Maltodextrin Erythritol, Allulose



VE Fuel Ethanol Phytosterols Biodiesel



l Starch Modified Starch



Lactic Acid Citric Acid Malic Acid



Glutamic Acid, Lysine Threonine, Tryptophan Lsoleucine, Valine



Xanthan Gum Carrageenan

#### **GRAIN-BASED CHEMICALS PRODUCTION PROJECTS**



## 80,000 t/y Corn Starch Project, Middle East

Corn starch is a fine, odorless, flavorless white powder derived from the endosperm of corn kerne, it is widely used in various industries such as starch sugar, food processing, papermaking, pharmaceuticals, fermentation, and chemical engineering.



Fructose Syrup

## 100,000 t/y F55 Fructose Syrup Project, CIS

Fructose syrup is a sweetener made from plant starch through conversion and concentration. It has cold sweetness, anti-crystallization, moisture retention, and anti-caries properties. It is suitable for refreshing beverages and other sweet food products, such as cold drinks, baked goods, canned products, dairy products, and confectionery.



Citric Acid

#### 120,000 t/y Citric Acid Project, China

Citric acid is produced through the fermentation of grains like rice, wheat, and corn. It is watersoluble and serves as a natural preservative and food additive. Depending on its water content, citric acid is classified into two forms: citric acid monohydrate and anhydrous citric acid. It stands as one of the most essential organic acids, extensively utilized across various sectors including food, pharmaceuticals, daily chemicals, and other industries.



#### 80,000 t/y Lysine, 8,000 t/y Threonine, 1,600 t/y Tryptophan Project, CIS

Lysine is an essential amino acid that can be produced from corn, wheat and other grains through microbial fermentation. It plays an important role in protein synthesis, fat metabolism, and immunity improvement. It is mainly used in feed and amino acid additives. The products include 98% lysine hydrochloride and 70% lysine sulfate.



# 24 t/d Deodorized Distillate Production of VE and Phytosterol Project, South America

Phytosterol can be produced from the by-products of vegetable oil refining section, which can effectively reduce cholesterol, inhibit tumor, regulate the immune system and have antioxidant effects. It is widely used in medicine, food, cosmetics, feed and chemical industries.



## 70,000 t/y Pea Protein Project, CIS

Pea protein is a protein ingredient derived from peas. Due to its excellent functional properties such as solubility, water absorption, emulsification, foaming, and gel formation. It can be used as a food additive in meat product processing, snack foods, feed, and more, to improve the quality and nutritional structure of the products.