



your milling &  
baking solutions





## ABOUT US

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Mirpain has an outstanding experience in the research & development, production and commercialisation of high quality milling and baking ingredients.

Our international sales area involves all around the world and we have been supplying tailor made solutions with high quality products for our customers since 2008.

Having the pursuit of superiority, customer satisfaction oriented R&D team responds favorably to customer demands and reinforces partner projects enthusiastically.

We provide on site technical assistance & training and in-house trials, laboratory analysis and detailed reports using our know how and high technology laboratory systems.

As a result of highly effective process from lab-scale trials to production, We aim to create the most appropriate professional solutions for your target product.

Consequently, Our company policy is producing superior quality products in view of the fact that national/international standards and regulations on the purpose of providing customer satisfaction.

## MILLING & BAKING SOLUTIONS

As Mirpain Milling & Baking Ingredients, our focus is on milling & baking enzymes.

### ENZYMES

Mirpain's ultra-concentrated enzymes catalyze chemical reactions and even when a small amount of enzyme is used, it yields desired effects on the flour quality.

We have very strong connections with the leading fermentation companies (2 in China, 3 in Japan and 1 in India) thanks to our enzyme experts in our Tokyo office.

Using our own selected best strains we reproduce the best. Our enzymes have been cautiously tested and they are super concentrated (10 to 20 times more concentrated than those generally available) so as well as having the best activity and price ratio, our clients don't pay for unnecessary diluents.



ACTIVE INGREDIENT	COMMERCIAL NAME	EFFECT	DOSAGE
FUNGAL ALPHA AMYLASES	ALPHAMILL PF ALPHAMILL PY ALPHAMILL RB ALPHAMILL PS	* Volume increasing. * Starch to sugar conversion. * Active base for flour&bread improvers.	5-15 ppm on flour weight 8-20 ppm on flour weight 10-50 ppm on flour weight 50-150 ppm on flour weight
BACTERIAL AMYLASE	ALPHAMILL BA	* Extra softness in short shelf-life buns.	0,5-2 ppm on flour weight.
MALTOGENIC AMYLASE	MIRPAIN XL	* Anti-stalling effect and extra softness.	50-100 ppm on flour weight
GLUCOAMYLASE	GLUOMILL G	* Protection in frozen bread. * Golden crust color.	50-100 ppm on flour weight
FUNGAL HEMICELLULASES / XYLANASES	HEMIMILL XYE HEMIMILL MRK	* Volume increasing. * Extra oven spring. * Fermentation tolerance.	3-10 ppm on flour weight 20-60 ppm on flour weight
BACTERIAL HEMICELLULASE / XYLANASE	HEMIMILL SPRING	* Volume increasing. * Extra oven spring. * Fermentation tolerance.	5-15 ppm on flour weight
LIPASES	LIPOMILL T LIPOMILL S	* Volume increasing. * DATEM substitution.	3-10 ppm on flour weight 5-12 ppm on flour weight
PHOSPHOLIPASE	PHOSPHOMILL	* Volume increasing. * Emulsifier substitution.	2-15 ppm on flour weight
GLUCOSE OXIDASES	OXIMILL QP OXIMILL QT OXIMILL QR	* Oxidising agent. * Flour stabilization * Gluten strengthening.	2-5 ppm on flour weight 3-8 ppm on flour weight 10-30 ppm on flour weight
PROTEASE	PROMILL	* Gluten decrease into biscuits, crackers, wafers and cookies.	100 ppm on flour weight
TRANSGLUTAMINASE	T-GLUTAMILL	* Binding agent. * Modification on gluten proteins.	10-50 ppm on flour weight

## FLOUR CORRECTORS

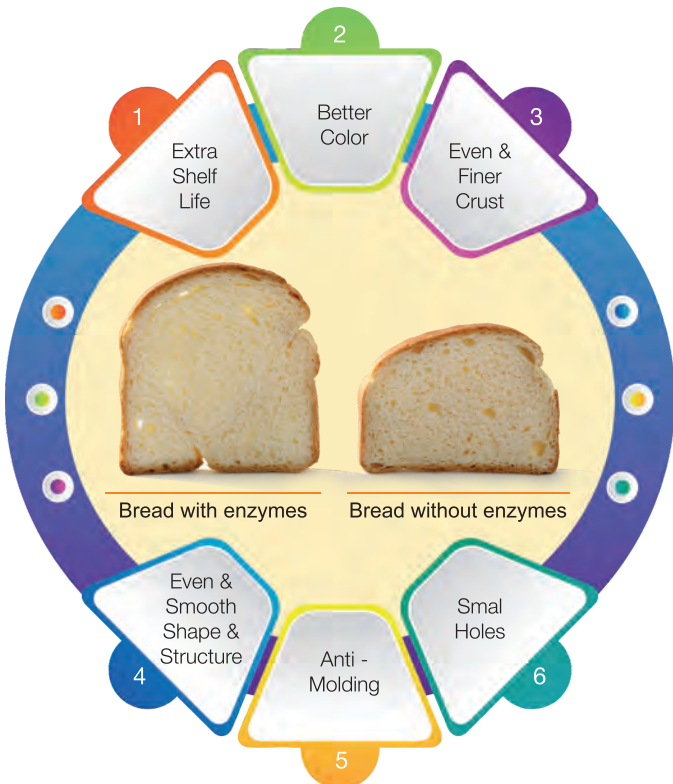
Flour correctors are blends of selected enzymes and ascorbic acid to optimize flour & dough features. These blends adjust a number of characteristics associated with flour, dough such as water absorption, elasticity, extensibility and they minimize the negative effects of flour type.

Mirpain R&D team formulates each special blends regarding to various types and qualities of flours with engineering know-how and high technology test capability.

During preparation of formulations,

- Customer demands
- Common market approach takes into account.

Besides, using flour correctors leads that breads have increased volume and enhanced crumb and crust structure.



## BAKING SOLUTIONS

Bread improvers are blends which consist of enzymes, ascorbic acid, soy & malt flours, emulsifiers.

They are created based on customer demands and bread types.



## INSTANT DRY YEAST

Available in 500 g & 450 g Vacuumed packages.



PRODUCT	PACKAGE DETAILS	WEIGHT
INSTANT DRY YEAST	Vacuum packaging	450-500 gr

## PASTA SOLUTIONS

As Mirpain, We are ready to solve your pasta product problems with our perfect enzyme mixes which are prepared on your demand. These tailor made highly effective improvers have plenty of advantages for your pasta.

COMMERCIAL NAME	DESCRIPTION	EFFECT
PASTAMILL	Enzyme blend for pasta products	<ul style="list-style-type: none"> <li>* Extra smooth surface</li> <li>* Stability during boiling</li> <li>* Desired appearance and sensory properties</li> <li>* Advanced biting quality</li> </ul>



### Benefits of pasta improvers use;

- Reduces cooking losses & stickiness
- Improves cooking tolerance
- Advances bite quality
- Improves elasticity and chew ability
- Enhances color and brightness
- Eliminates the cracking problem for dried and cooked products
- Increase surface firmness

Our pilot plant helps us to simulate industrial scale production by applying same production process with customers to produce the best pasta improver for them. We conduct all required analyses in our full equipped laboratory to understand appropriateness of your flour for pasta production.



## FLOUR FORTIFICATION / VITAMINS AND MINERALS

Vitamins and minerals are organic compounds that are essential in very small amounts for supporting normal physiologic function. We need these micronutrients to maintain our lives healthily.

Fortification is; addition of micronutrients(vitamins and minerals) to food. Fortification as part of a country’s nutrition strategy is supported by global organizations such as UNICEF, the World Health Organization (WHO), the U.S. Centers for Disease Control and Prevention (CDC), the Global Alliance for Improved Nutrition (GAIN), and Food Fortification Initiative (FFI).

Globally 87 countries have legislation to mandate fortification of at least one industrially milled cereal grain. With its successful background of 15 years on baking enzymes and flour correctors, Mirpain offers customized fortifications with high quality ingredients. It develops vitamin & minerals blends in response to customers’ needs and cares about the sustainability of results.



VITAMIN - MINERAL	SOURCE
IRON	*NaFeEDTA (Sodium Iron EDTA) *Ferrous Fumarate *Ferrous Sulphate *Electrolytic/Reduced Iron
ZINC	*ZnO (Zinc Oxide) *ZnSO <sub>4</sub> .H <sub>2</sub> O (Zinc Sulphate Monohydrate)
IODINE	*KI (Potassium Iodide)
VITAMIN B5	*Pantothenic Acid (Calcium-D-Pantothenate)
VITAMIN B2	*Riboflavin
VITAMIN B3	*Niacinamide (Nicotinamide)
VITAMIN K1	*Phytonadione
VITAMIN B9	*Folic Acid
VITAMIN A	*Vitamin A Palmitate CWS
VITAMIN D3	*Cholecalciferol
VITAMIN B6	*Pyridoxine HCL
VITAMIN B12	*Cyanocobalamin
VITAMIN E	*DL-α-Tocopheryl Acetate
VITAMIN B7	*Biotin



Mirpain is a member of Global Alliance for Improved Nutrition (GAIN) that is an international organization driven by the vision of a World without malnutrition. GAIN was launched at the UN in 2002 to tackle the human suffering caused by malnutrition. Working with its partners, GAIN aims that making healthier food choices more affordable, more available and more desirable.

Besides its enzyme and blending expertise, Mirpain follows Worldwide Food Regulations and issues and finds global Fortification Solutions thanks to its high technology laboratory and its dynamic and experienced R&D team.

**\*The variety and the content of the raw materials of the premix is created according to the customer demands & country regulations.**

## FLOUR FORTIFICATION / VITAMINS AND MINERALS

Approved by;



### OUR QUALITY PARAMETERS

- ✓ Advanced technical knowledge
- ✓ Advanced R&D laboratory
- ✓ Advanced supply chain, professional suppliers
- ✓ Technical support for our customers
- ✓ Our sense of social responsibility
- ✓ Complete quantitative and qualitative analysis of raw materials and final product

Mirpain really cares about fortification strategy. Thus, it provides the products in VACUUMED PACK in order to extend shelf life and homogeneity by protecting the product from sunlight, H<sub>2</sub>O and O<sub>2</sub>.

- ✓ **Wheat Flour Fortification**
- ✓ **Maize Flour Fortification**
- ✓ **RUTF-RUSF Fortification**
- ✓ **High Energy Biscuit Fortification**
- ✓ **Date Bar Fortification**
- ✓ **Infant Cereal Fortification**
- ✓ **Baby Biscuit Fortification**
- ✓ **Edible Oil Fortification**
- ✓ **Pasta Fortification**
- ✓ **Milk Fortification**
- ✓ **Infant Food Fortification**
- ✓ **Pregnant Woman Food Fortification**
- ✓ **Micronutrient Powder**
- ✓ **Customer Specialized Food Supplement Premix**



Parameter	Normal Packing	Vacuum Packing
<b>O<sub>2</sub></b>	Absorbs O <sub>2</sub>	No absorption
<b>Sun Light</b>	Absorbs Sun light	No absorption
<b>H<sub>2</sub>O</b>	Absorbs H <sub>2</sub> O	No absorption
<b>Shelf Life</b>	Shorter	Longer
<b>Homogeneity</b>	Decrease homogeneity	Stabil homogeneity
<b>Storage Area</b>	More	Less

# VITAMINS

**Sufficiency :**

Increases brain development  
 Maintains muscle health  
 Cures anemia during pregnancy and menstruation  
 Helps in formation of hemoglobin  
 Cures insomnia

**Deficiency :**

Anemia  
 Fatigue  
 Irritability  
 Concentration problems



**Sufficiency :**

Defense against cancer  
 Maintains strong brain functioning  
 Cures pimples, acne and hair loss  
 Strengthens bones  
 Heals chronic and fungal infections

**Deficiency :**

Poor neurological function  
 Diarrhea  
 Weak immunity  
 Hair loss



**Sufficiency :**

Removes toxic chemicals  
 Boost immunity  
 Forms healthy & shiny skin  
 Maintains optimal energy levels  
 Controls metabolic rate

**Deficiency :**

Goiter  
 Hypothyroidism  
 Impaired mental function  
 Enlargement of thyroid



**Sufficiency :**

Balances blood sugar  
 Reduces bad cholesterol  
 Lowers high blood pressure

**Deficiency :**

Diarrhea  
 Fatigue  
 Insomnia  
 Depression



**Sufficiency :**

Strengthens immune and digestive system  
 Helps reproduction of AIDS virus  
 Promotes formation of red blood cells  
 Growth tissues and organs  
 Energy production

**Deficiency :**

Anemia  
 Irritated eyes  
 Dermatitis



**Sufficiency :**

Helps to lower blood pressure  
 Improves appetite and digestion  
 Promotes proper functioning of nerves  
 Beneficial in treating diabetes  
 Beneficial in curing impotence and erectile dysfunction

**Deficiency :**

High cholesterol  
 Diarrhea  
 Insomnia  
 Inability to concentrate



**Sufficiency :**

Supports Heart Health  
 Improves Bone Density  
 Improves Brain Function  
 Helps Fight Cancer

**Deficiency :**

Bruising  
 Petechiae  
 Hematomas





# MINERALS



**Folic Acid  
(Vitamin B9)**

**Sufficiency :**

Reduces risk of neural defects in babies  
Decreases risk of strokes in brain  
Helps to prevent cancer and heart diseases  
Improves level of hemoglobin  
Beneficial in synthesis of DNA

**Deficiency :**

Anemia  
Fatigue  
Chronic low energy  
Poor digestion

**Vitamin A**

**Sufficiency :**

Helps prevent cancer  
Provides immune support  
Protects eye health  
Fights inflammation  
Supports skin health and cell growth

**Deficiency :**

Night blindness  
Respiratory infections

**Vitamin D**

**Sufficiency :**

Beneficial in preventing bone structure  
Helps prevent cancer and cardiovascular diseases  
Protect against peripheral arterial disease

**Deficiency :**

Osteoporosis  
Depression

**Vitamin B6  
(Pyridoxine)**

**Sufficiency :**

Protect against heart and kidney diseases  
Boosts immune system and improves metabolic rate  
Helps treatment of eczema, dandruff, acne, hair loss and dry skin  
Aids in maintaining healthy levels of hormones  
Aids in proper functioning of nervous system

**Deficiency :**

Skin inflammation  
Nausea

**Vitamin B12**

**Sufficiency :**

Helps to prevent breast cancer  
Maintains proper functioning of heart  
Helps to maintain strong nervous system  
Helps to prevent anemia and aids in formation of DNA  
Aids in formation and maintenance of red blood cells

**Deficiency :**

Alzheimer  
Anemia  
Fatigue

**Vitamin E**

**Sufficiency :**

Balances Cholesterol  
Repairs Damaged Skin  
Balances Hormones  
Fights Free Radicals and Prevents Disease Development

**Deficiency :**

Hemolytic anemia  
Retinopathy  
Impairment of the immune response

**Vitamin B7  
(Biotin)**

**Sufficiency :**

Supports a Healthy Metabolism  
Supports Thyroid and Adrenal Function  
Maintains Healthy Hair, Skin, and Nails  
Helps Maintain a Healthy Cardiovascular System

**Deficiency :**

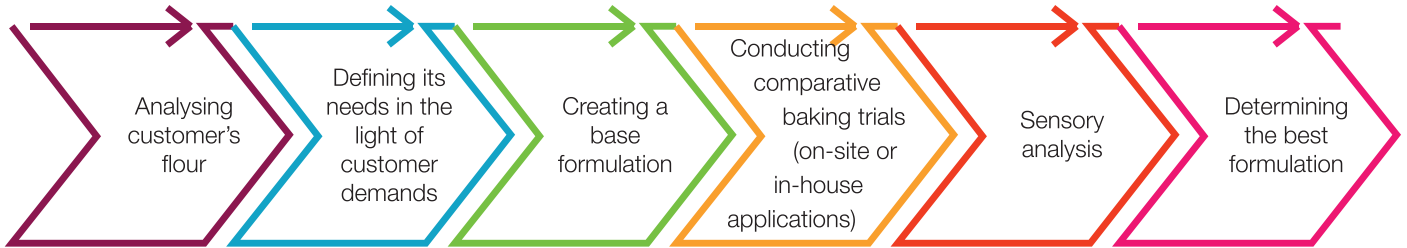
Hair loss (alopecia)  
Brittle and thin fingernails  
Conjunctivitis

## R&D ACTIVITIES

Tailor made solutions are also part of our core activity. Some of our customers have requirements that are specific to their applications and production processes.

Our dedicated team of experts, with strong experience and knowledge in milling & baking industry, will be glad to serve as a basis that can be individually adjusted to meet customers' needs, visions and requirements.

Whole procedure is this tailoring;



## IN-HOUSE PROVISIONS



## IN-HOUSE PROVISIONS



VITAMIN-MINERAL  
LABORATORY



TEST BAKING  
UNIT



## ON-SITE PROVISIONS

Mirpain's technical support team responds at the customer's own production sites, at any time, in any where in the world, to support them throughout the industrial process and help them to make a desired final product.

Mirpain R&D team are ready to tackle your technical challenges, develop new technologies in our laboratory and then implant it on your product line.

## TECHNICAL TRAININGS

Mirpain innovative and tech-savvy R&D team is always at your disposal for in and out technical training services.

Scopes of trainings are;

- Know-how about ingredients,
- Creating formulation,
- Technical solutions,
- Production and quality control.





**Mirpain Gıda San. ve Tic. A. Ş.**

Birlik San.Sit. 3.Cad No: 85  
Beylikduzu - Istanbul / Turkey  
Phone:+ 90 212 875 01 11  
Fax : +90 212 875 03 06  
info@mirpain.com  
www.mirpain.com



[linkedin.com/company/  
mirpain-bakery-ingredients](https://www.linkedin.com/company/mirpain-bakery-ingredients/)



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