



# AGRO SOLUTION INDUSTRIES

## FORTIFIED RICE PROCESSING PLANT

**For Nutritional Rice**

**Capacity:  
150 kg to 2000 kg per hrs.**





# About Us

## Welcome to our Agro Solution Industries

Agro Solution Industries is well-acclaimed as an adept organization from India that specializes in providing top-notch lab equipment, automation products, material handling equipment, milling machine, grain cleaning machine, food processing machine, packing machine, oil expeller machine, oil filter machine, and much more. Being a renowned manufacturer and supplier of the above-mentioned products, we are bedecked with state-of-the-art machinery and hygienic methods of production to bring about A-grade quality. We are capable of catering to the specific demands of our venerable clients with the utmost competence.

Established in the year 1973, our veteran organization has gained an immense market reputation within a short span of time under the mentorship of Mr. Brij Mohan. We strive to meet the quality requirements of the market by sincerely complying with the norms set by the industry.

### **Logistic team**

Our distribution network is competent to meet the requirements of geographically scattered clients. We are even capable to meet the bulk orders on an urgent basis and our logistic network always works towards the betterment of services. We are equipped with adequate commercial vehicles to suffice the divergent market requirements within the given time frame.

So, get in touch with our deft sales and marketing team and place your order to grab the best deals. Our cordial staff keeps our clients satisfied with great deals and after sale follow-ups.

### **Why us?**

- Committed quality
- Competitive product pricing
- Ethical business policies
- Complete client satisfaction
- Wide distribution network
- Adherence to industry norms
- Turnkey Based System
- Successfully installed 45+ FRK plants in all over India.
- Trained operators with fully supportive management



## Fortified Rice Kernel Production Line Manufacturers

A renowned company, engaged in importing and manufacturing of Fortified Rice Kernels (FRK ) Production lines from Foreign Countries. It has developed long-term relationships with many reliable suppliers and satisfied customers. It takes pride in supplying the customers with the right products by matching up to their needs.



## ARTIFICIAL/NUTRITIONAL/FORTIFIED RICE/INSTANT RICE PROCESS LINE

India is the world's second-largest producer of rice and the largest exporter of rice in the world. Rice production has increased from 53.6 million tons in FY 1980 to 120 million tons in FY 2020-21.

Rice is one of the main produce grain of India. Moreover, our country has the largest area under rice cultivation, as it is one of the principal food crops. It is, in fact, the dominant crop of the country.

### Rice Manufacture

In general the only drawback in rice processing is many valuable nutrients are lost during the process of whitening, polishing and storage. Rice fortification presents numerous technical problems. micro-nutrients cannot be simply added to the kernels, because they do not stay where they are needed and the traditional soaking and rinsing of rice with water prior to cooking removes most of the added nutrients.

Solution is, we use Twin Screw Extrusion technology which takes broken rice as raw material. Finely milling and mixing with nutrients premix, after conditioning with steam and water, flour enter into the extruder to be re-granulated and finally dried. These extruded rice will be mixed with natural rice to get enriched nutritional rice. In the hot extrusion process, rice flour and micron-utrients are transformed into a product visually resembling natural rice. Thereby vitamins and minerals are embedded and protected from segregation and from being removed through rinsing or leaching out during washing and cooking.

# NUTRITIONAL RICE/ FORTIFIED RICE

Nutritional Rice is a kind of recomposed fortified rice. The Nutritional Rice process is a way of rice fortification utilized hot extrusion technology not only addresses the problem of hidden hunger but also meets the challenge of implementing rice fortification. The production of Nutritional Rice offers the unique possibility to efficiently fortify rice with multiple micro-nutrients, vitamins and minerals such as vitamin A and B family as well as iron and zinc is chosen for inclusion.

## ADVANTAGES

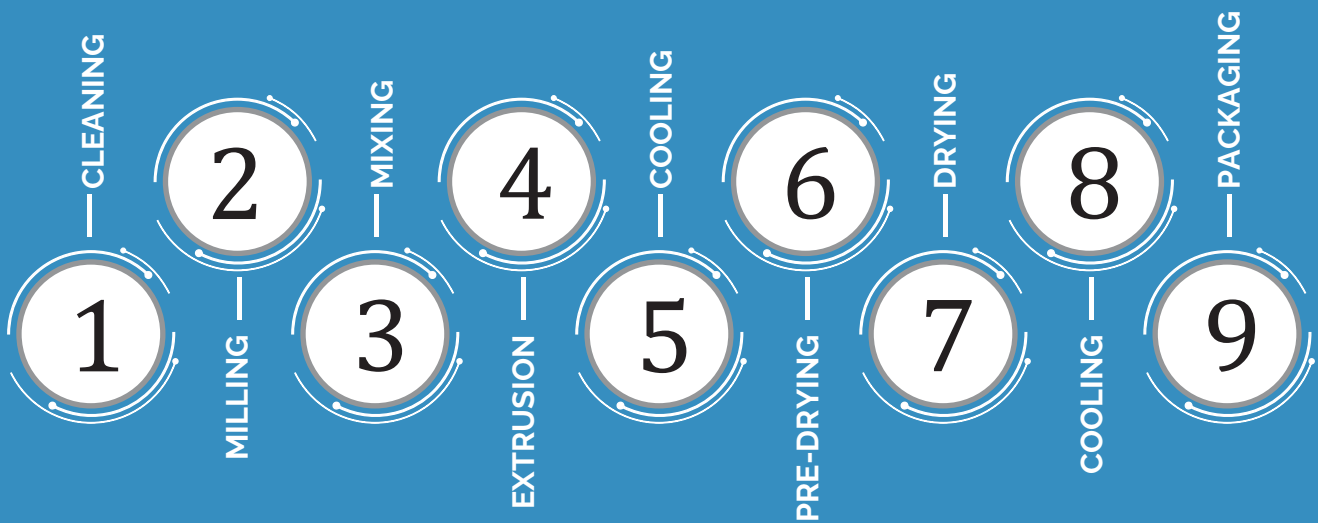
- Fills up the nutritional deficiencies of natural foods like lysine and vitamin in cereals etc.
- Loss of nutrients during processing and storage.
- Nutritional needs of special populations.
- Simplify meal handling and convenient food intake.
- Prevention of malnutrition.
- Improve sensory quality and improve storage.

## INSTANT RICE / FORTIFIED RICE/ INSTANT PORRIDGE

Instant, convenient and time-saving. You can enjoy delicious soup in a few minutes. It's as good as mother's soup. No need self-heat packs, only boiling water. Open outer package, put instant rice and vegetable packs inside and boiled water to water level. Mix rice evenly, wait 10 mins, then you can enjoy the yummy rice!



# PROCESS TO MAKING FORTIFIED RICE



**ENGINEERING LAYOUT FOR FORTIFIED PROCESSING LINE**

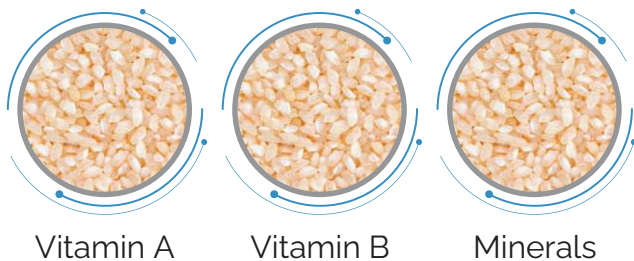
## Products:

Artificial Rice, By changing the moulds and screws, this line can produce various puffed snacks or co-extrusion snacks, like puffed rice, cheese ball, cheetos, corn sticks, puffed rice etc.

## CONCEPT

Enrichment of reconstituted rice with certain Vitamins and trace elements

## PICTORIAL VIEW



Vitamin A

Vitamin B

Minerals



Fortified Vitamin AB 12 B1 Rice

Cooked Rice 1% nutritionally fortified rice



## Material that can be used for Extrusion Process

Rice flour, broken rice, rice bran, Black rice flour, black sesame flour, millet flour, rice flour, buckwheat flour, oat flour, jujube powder, Purple sweet potato powder, purple flour, barley flour, red bean flour, mung bean flour, sorghum flour, black bean flour etc.



WE HAVE DIFFERENT  
CAPACITY OF

# FORTIFIED PROCESSING LINE

Nutritional Rice / Artificial Rice /  
Instant Rice Process Line

We have capacity from 150 kg to 2000 kg per hour  
and more

ECO		COMBO		SMART		ULTRA		ULTRA SMART	
200	400	400	400	400	500	1000	2000	2000	2000
Cap 150-200 kg/hr	Cap 300-400 kg/hr	Cap 300-400 kg/hr	Cap 300-400 kg/hr	Cap 300-400 kg/hr	Cap 500-600 kg/hr	Cap 800-1000 kg/hr	Cap 800-1000 kg/hr	Cap 1000-2000 kg/hr	Cap 1000-2000 kg/hr

**NOTE: Capacity depends on different type of rice used and its moisture and required output size of rice and quality.**

Grinder	1	Grinder	1	Grinder	1	Grinder	1	Grinder	1	Grinder	1	Grinder	1
Mixer	1	Mixer	2	Mixer	1	Mixer	1	Mixer	1	Mixer	1	Mixer	1
Screw Conveyor	1	Screw Conveyor	2	Screw Conveyor	1	Buffer Tank	1	Buffer Tank	1	Buffer Tank	1	Buffer Tank	1
Extruder	1	Extruder	2	Extruder	1	Screw Conveyor	1	Screw Conveyor	1	Screw Conveyor	1	Screw Conveyor	1
Vibrator Cooling	1	Vibrator Cooling	2	Air Conveyor	1	Extruder	1	Extruder	1	Extruder	1	Extruder	1
Air Conveyor	1	Air Conveyor	1	Vibrator Cooling	1	Air Conveyor	1	Vibrator Cooling	1	Vibrator Cooling	1	Air Conveyor	1
Oven 7L*8M	1	Oven 7L*10M	1	Air Conveyor	1	Vibrator Cooling	1	Air Conveyor	1	Air Conveyor	1	Vibrator Cooling	1
Cooling	1	Cooling	1	Oven 7L*10M	1	Air Conveyor	1	Fluid Bet 7.5M	1	Fluid Bet 7.5M	1	Air Conveyor	1
				Cooling	1	Pre-Dryer	1	Air Conveyor	1	Air Conveyor	1	Pre-Dryer	1
						Fan Conveyor	1	Oven 5L*9	1	Oven 5L*7.5	1	Fan Conveyor	1
						Oven 3L*14M	1	Z & Cooling	1	Fan Conveyor	1	Oven 3L*14M	1
						Cooling	1			Oven 5L*9	1	Cooling	1
										Z & Cooling	1		
	12		8		9		12		11		13		12
Power - 130 KW	Power - 240 KW	Power - 260 KW	Power - 260 KW	Power - 260 KW	Power - 260 KW	Power - 220 KW+ Steam 1500 kg/hr	Power - 400 KW+ Steam 2000 kg/hr	Power - 400 KW+ Steam 2000 kg/hr	Power - 400 KW+ Steam 4000 kg/hr	Power - 400 KW+ Steam 4000 kg/hr	Power - 400 KW+ Steam 4000 kg/hr	Power - 400 KW+ Steam 4000 kg/hr	Power - 400 KW+ Steam 4000 kg/hr
3500 sq ft	4000 sq ft	3500 sq ft	4000 sq ft	3500 sq ft	4000 sq ft	6000 sq ft	8000 sq ft	8000 sq ft	10000 sq ft	10000 sq ft	10000 sq ft	10000 sq ft	10000 sq ft

# TECHNICAL PARAMETERS OF

## NUTRITION RICE/ARTIFICIAL RICE/ FORTIFIED RICE/GOLDEN RICE PROCESS LINE

EQUIPMENTS	TECHNICAL PARAMETERS				
	200 KG	400 KG	600 KG	800 KG	1000 KG
<b>Grinding Machine</b> 	<b>Qty:</b> 1  <b>Installed Power :</b> 15 hp  <b>Capacity :</b> 200 kg to 250 kg/hrs	<b>Qty:</b> 1  <b>Installed Power :</b> 25 hp  <b>Capacity :</b> 450 kg to 500 kg/hrs	<b>Qty:</b> 1  <b>Installed Power :</b> 60 hp  <b>Capacity :</b> 700 kg to 800 kg/hrs	<b>Qty:</b> 1  <b>Installed Power :</b> 60 hp  <b>Capacity :</b> 700 kg to 800 kg/hrs	<b>Qty:</b> 1  <b>Installed Power :</b> 90 hp  <b>Capacity :</b> 900 kg to 1000 kg/hrs
<b>Meal Mixture</b> 	<b>Qty:</b> 1  <b>Installed Power :</b> 3 hp  <b>Capacity :</b> 50 kg / batch 250 kg/batch	<b>Qty:</b> 2  <b>Installed Power :</b> 3 hp  <b>Capacity :</b> 50 kg / batch 250 kg/batch	<b>Qty:</b> 3  <b>Installed Power :</b> 3 hp  <b>Capacity :</b> 50 kg / batch 250 kg/batch	<b>Qty:</b> 2  <b>Installed Power :</b> 2 hp  <b>Capacity :</b> 200 kg / batch 500 kg/batch	<b>Qty:</b> 2  <b>Installed Power :</b> 2 hp  <b>Capacity :</b> 200 kg / batch 500 kg/batch
<b>Screw Conveyor</b> 	<b>Qty:</b> 1  <b>Installed Power :</b> 2 hp  <b>Capacity :</b> 200 kg to 250 kg / hrs.	<b>Qty:</b> 2  <b>Installed Power :</b> 2 hp  <b>Capacity :</b> 200 kg to 250 kg / hrs.	<b>Qty:</b> 3  <b>Installed Power :</b> 2 hp  <b>Capacity :</b> 200 kg to 250 kg / hrs.	<b>Qty:</b> 2  <b>Installed Power :</b> 2 hp  <b>Capacity :</b> 450 kg to 500 kg / hrs.	<b>Qty:</b> 2  <b>Installed Power :</b> 2 hp  <b>Capacity :</b> 450 kg to 500 kg / hrs.
<b>Twin Screw Extruder</b> 	<b>Qty:</b> 1  <b>Installed Power :</b> 2 hp  <b>Capacity :</b> 200 kg to 250 kg / hrs.	<b>Qty:</b> 2  <b>Installed Power :</b> 2 hp  <b>Capacity :</b> 200 kg to 250 kg / hrs.	<b>Qty:</b> 3  <b>Installed Power :</b> 2 hp  <b>Capacity :</b> 200 kg to 250 kg / hrs.	<b>Qty:</b> 2  <b>Installed Power :</b> 2 hp  <b>Capacity :</b> 450 kg to 500 kg / hrs.	<b>Qty:</b> 2  <b>Installed Power :</b> 2 hp  <b>Capacity :</b> 450 kg to 500 kg / hrs.



TECHNICAL PARAMETERS OF




**NUTRITION RICE/ARTIFICIAL RICE/  
FORTIFIED RICE/GOLDEN RICE PROCESS LINE**



EQUIPMENTS	TECHNICAL PARAMETERS				
	200 KG	400 KG	600 KG	800 KG	1000 KG
<b>Viberating Separator</b> 	<b>Qty:</b> 1  <b>Installed Power :</b> 2 hp	<b>Qty:</b> 1  <b>Installed Power :</b> 2 hp	<b>Qty:</b> 1  <b>Installed Power :</b> 2 hp	<b>Qty:</b> 3  <b>Installed Power :</b> 4 hp	<b>Qty:</b> 1  <b>Installed Power :</b> 4 hp
<b>Conveyor</b> 	No required	<b>Qty:</b> 1  <b>Installed Power :</b> 2 hp	<b>Qty:</b> 1  <b>Installed Power :</b> 2 hp	<b>Qty:</b> 1  <b>Installed Power :</b> 3 hp	<b>Qty:</b> 1  <b>Installed Power :</b> 3 hp
<b>Pre Dryer</b> 	No required	No required	No required	<b>Qty:</b> 1  <b>Installed Power :</b> 30 hp  <b>Capacity :</b> 900 kg to 1000 kg / hrs.	<b>Qty:</b> 1  <b>Installed Power :</b> 30 hp  <b>Capacity :</b> 900 kg to 1000 kg / hrs.
<b>Lift Conveyor</b> 	<b>Qty:</b> 1  <b>Installed Power :</b> 2 hp	<b>Qty:</b> 1  <b>Installed Power :</b> 2 hp	<b>Qty:</b> 1  <b>Installed Power :</b> 2 hp	<b>Qty:</b> 1  <b>Installed Power :</b> 3 hp	<b>Qty:</b> 1  <b>Installed Power :</b> 3 hp

# TECHNICAL PARAMETERS OF

## NUTRITION RICE/ARTIFICIAL RICE/ FORTIFIED RICE/GOLDEN RICE PROCESS LINE

EQUIPMENTS	TECHNICAL PARAMETERS				
	200 KG	400 KG	600 KG	800 KG	1000 KG
<b>Multi Layer Dryer</b> 	<b>Qty:</b> 1  <b>Installed Power :</b> 60 hp  <b>Capacity:</b> 200 kg to 250 kg/hrs. (7 layers, 8 m)	<b>Qty:</b> 1  <b>Installed Power :</b> 90 hp  <b>Capacity:</b> 450 kg to 500 kg/hrs. (5 layers, 11 m)	<b>Qty:</b> 1  <b>Installed Power :</b> 110 hp  <b>Capacity:</b> 700 kg to 800 kg/hrs. (7 layers, 11 m)	<b>Qty:</b> 1  <b>Installed Power :</b> 110 hp  <b>Capacity:</b> 700 kg to 800 kg/hrs. (7 layers, 11 m)	<b>Qty:</b> 2  <b>Installed Power :</b> 110 hp  <b>Capacity:</b> 700 kg to 800 kg/hrs. (7 layers, 11 m)
<b>Cooling Conveyor</b> 	<b>Qty:</b> 1  <b>Installed Power :</b> 2 hp	<b>Qty:</b> 1  <b>Installed Power :</b> 2 hp	<b>Qty:</b> 1  <b>Installed Power :</b> 2 hp	<b>Qty:</b> 1  <b>Installed Power :</b> 4 hp	<b>Qty:</b> 1  <b>Installed Power :</b> 4 hp
<b>Electric Control Panel</b> 	<b>Qty:</b> 1  <b>Installed Power :</b> 2 hp	<b>Qty:</b> 1  <b>Installed Power :</b> 2 hp	<b>Qty:</b> 1  <b>Installed Power :</b> 2 hp	<b>Qty:</b> 1  <b>Installed Power :</b> 2 hp	<b>Qty:</b> 1  <b>Installed Power :</b> 2 hp

### Optional : Parboiled Dryer or Gas Dryer

**OPTIONAL : PARBOILED MULTI LAYER DRYER ( GAS DRYER )**

Capacity : 1000 kg to 1200 kg  
Gas consumption : 16 kg / hr.



# Automatic FRK Blending Machine

We are India's Leading Fortified Rice Kernels (FRK) Blending Machine manufactures to give optimum production.

- **Stainless Steel Body**
- **High accuracy and less spacious**
- **PLC Integrated System**
- **Option for Data Storage through Pen Drive**
- **No Vibration**

## Technical Specification:

Processing Capacity:

2-6 Tons/hr Rice

Power Required:

1.0 HP 1410rpm/70rpm

Dimension: 2459x1063x4199 (mm)

Weight: 736 kg (Approx)





# AGRO SOLUTION INDUSTRIES

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