

FORTIFIED RICE KERNELS (FRK)



Manufactured By :



TAMILNADU

What is Rice Fortification?

- *Rice fortification is the process of deliberately increasing the content of essential micronutrients in Traditional Rice*
- *so as to improve the nutritional quality of the food supply and provide a public health benefit with minimal risk to health.*

Fortified Rice Kernels (FRK):

Rice-shaped kernels, made of rice flour, fortified with the vitamins & minerals mix

Fortified rice:

Non-fortified rice (normal rice) blended with the fortified rice kernels at ratio of 1:100

(FRK : Normal Rice)

Nutrients

- ✓ Vitamin A (Retinyl-palmitate)
- ✓ Vitamin B1 (Thiamine Mononitrate)
- ✓ Vitamin B2 (Riboflavin)
- ✓ Vitamin B3 (Nicotinamide)
- ✓ Vitamin B6 (Pyridoxine Hydrochloride)
- ✓ Folic Acid
- ✓ Vitamin B12 (Cyanocobalamine)
- ✓ Iron (Ferric Pyrophosphate Micronized)
- ✓ Zinc (Zinc Oxide)

Micronutrients (vitamins and minerals) are essential for many functions and health



They cannot be produced by the body and have to come from the diet

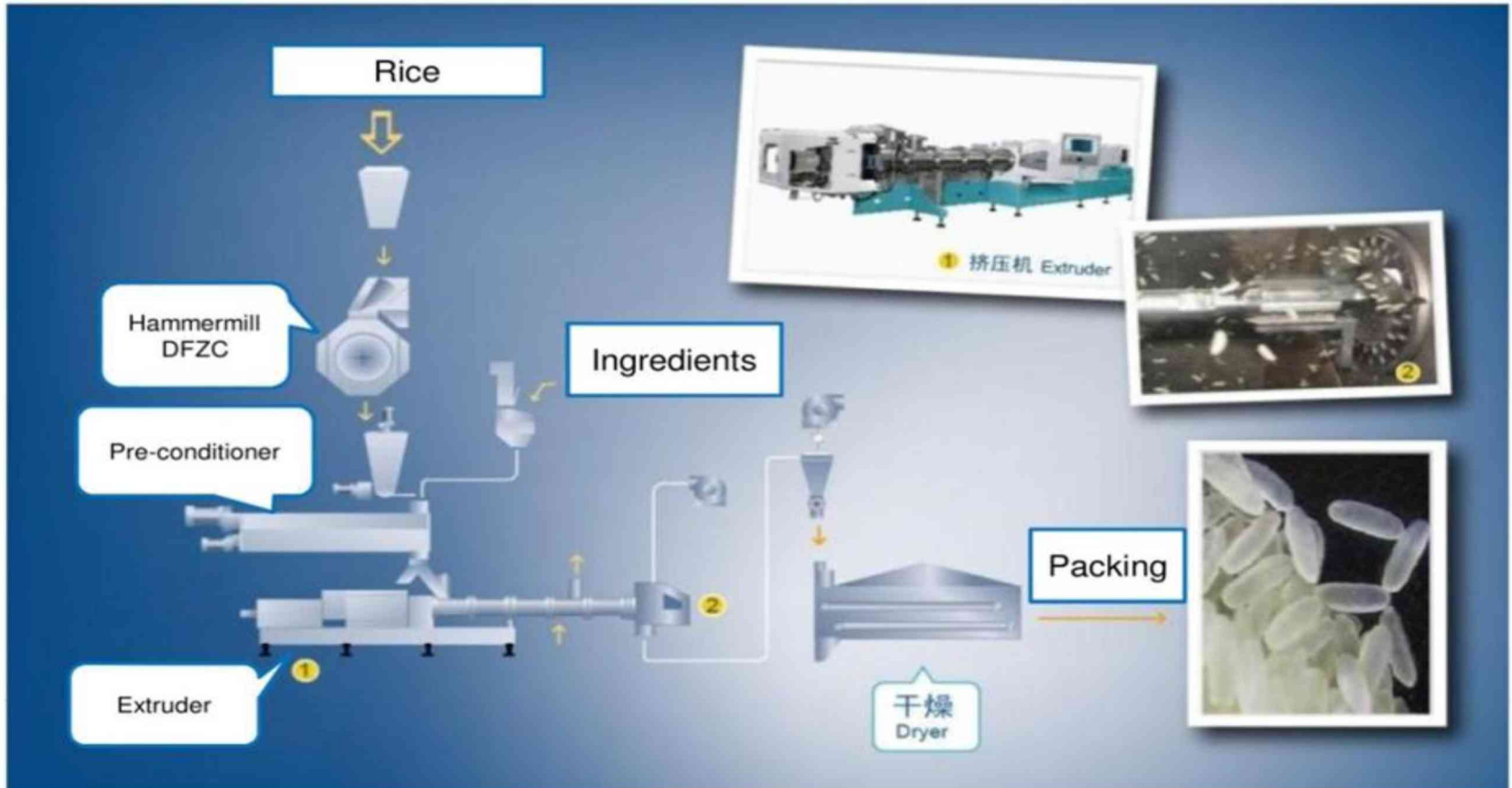
Why fortify rice?

- ❑ India is a leading rice producing country, with 22% of the total global rice production and 65% of India's population consumes rice on a daily basis.
- ❑ The per capita rice consumption in India is 6.8 kilogram per month and Rice is therefore a large source of calories and a core component of nutrition in most of India even though low in micronutrients.
- ❑ During Milling process of rice removes the micronutrient rich layers to produce the commonly consumed white rice while polishing further removes 75-90% of vitamin B complex.
- ✓ Fortifying rice provides an opportunity to add back the lost micronutrients and to also add other essential micronutrients such as **Iron, Zinc, Folic acid, Niacin, Vitamin B1, B2, B6, B12 & Vitamin-A** as per Food Safety and Standards (Fortification of Foods) Regulations, 2018.

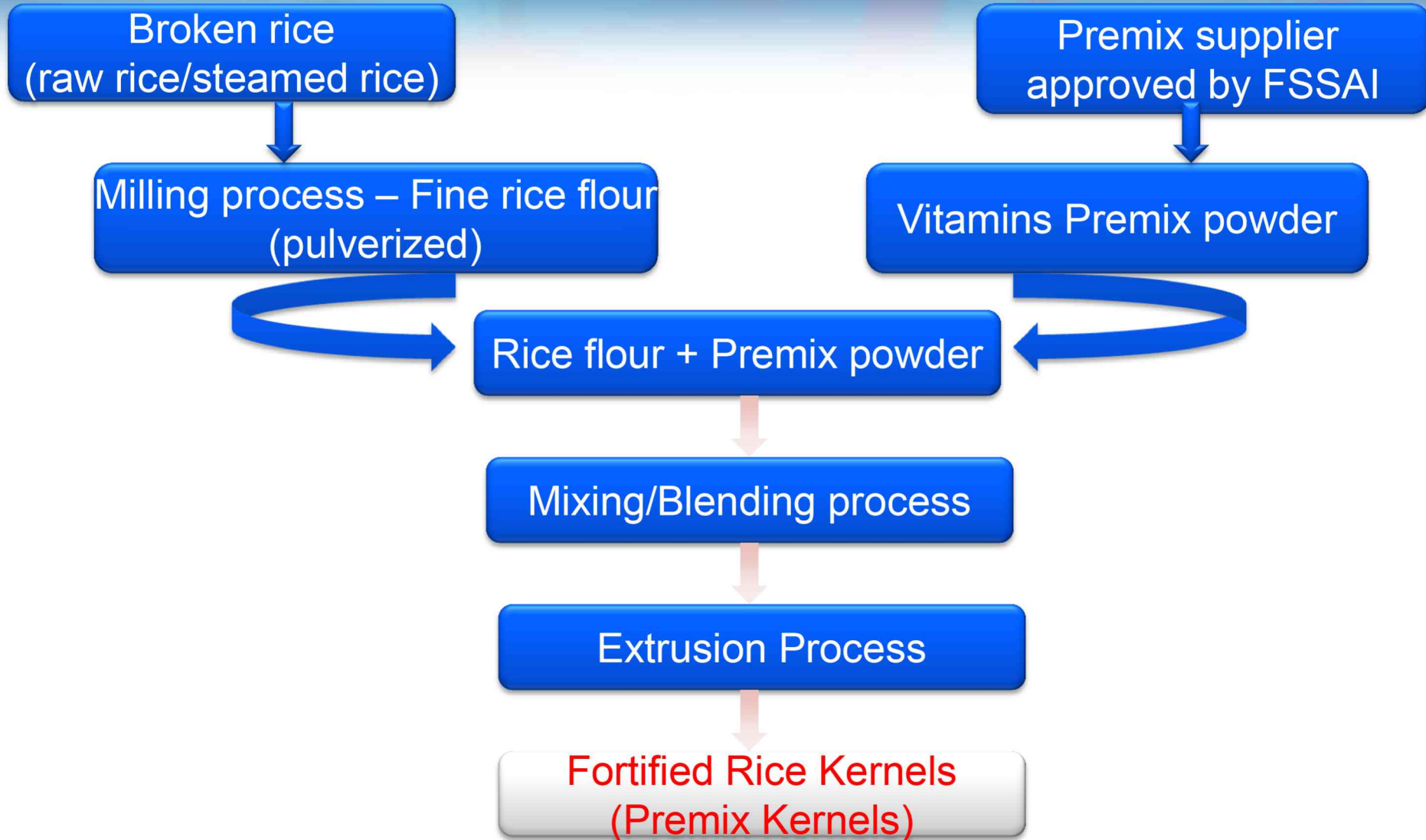
Fortified Rice Kernels (FRK)

- **FRK** is made of natural broken rice with micro-encapsulated vitamins premix in reconstituted rice kernels via extrusion process.
- looks, tastes and cooks exactly like traditional rice.
- deliver the added micronutrients to the consumer.
- can be customized in shape, color and micronutrient composition.

Hot Extrusion Process



Process flow chart



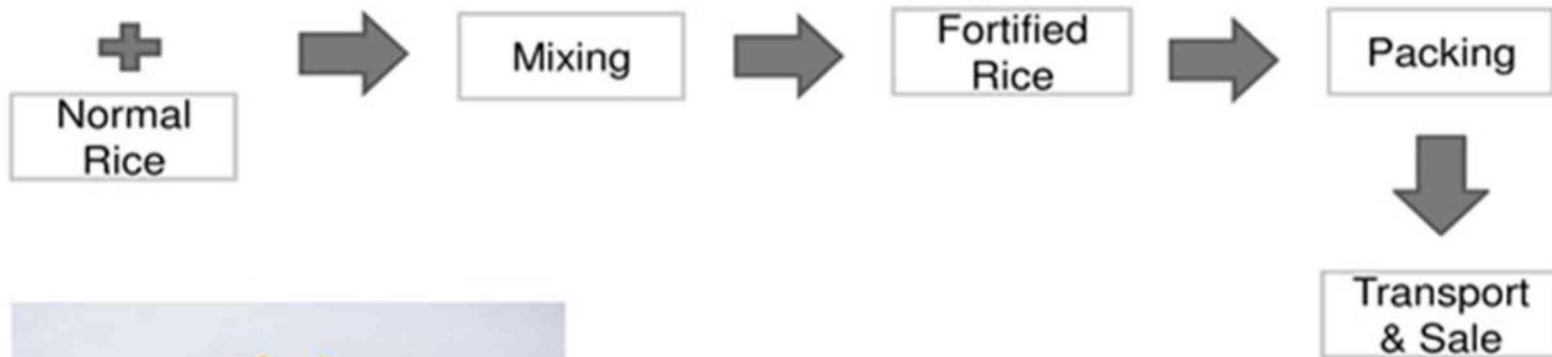
FRK - Unit

Plant Capacity

- The exclusive, dedicated **FRK** unit is located at Namakkal District, Tamil Nadu with the production capacity of 10 MT per day.
- Plant have a vast capacity to produce **3,000 MT's of FRK / Annum.**
- Fortified Rice capacity is around 3,00,000 MT's / Annum.
- All food contact equipment and machineries are made up with Stainless Steel (SS 304).
- As a sector specific GMP, Colour sorter, Pre-Conditioner, Twin Screw Extruder, Hot-Air Dryer & Metal Detector is used for better product quality and food safety.

How to produce fortified rice ?

Premix Rice Kernel (FRK)



FRK are blended/mixed with normal rice in the proportion of 1: 50 to 1:100 (**FRK**: Traditional Rice).



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THANK YOU

