



VALUE ADDITION IN RBO INDUSTRY

PRESENTED BY : PUNEET GOYAL

NEED FOR VALUE ADDITION

- 1) For survival of the fittest
- 2) For utilization of full potential of Rice Bran Oil
- 3) To improve cost efficiency and margins
- 4) To compete with substitute oils
- 5) For protecting the environment (certain value additions)



SEGMENTATION OF VALUE ADDITION OPPORTUNITIES

- A. From Miscellaneous By products of Paddy (Except Rice Bran)
- B. To Rice Bran Oil itself
- C. To By-products during extraction
- D. To By-Products generated during refining



A) FROM BY-PRODUCTS OF PADDY (Except Rice Bran)

Rice Husk

The coating on a seed or grain of rice



Rice Ash

When rice-husk is burnt, ash is generated



Paddy Straw

Produced when harvesting paddy



RICE HUSK



Sector	Value addition	Technology	Feasibility	Business Perspective
Energy	As a fuel for cogen-plants	Advanced	Commercial plants available across India	Commercially viable depending on alternate fuel prices
Chemical	Furfural (used in Synthetic Resin Manufacturing)	Advanced	Commercial plants available	Commercially viable

RICE HUSK ASH



Sector	Value addition	Technology	Feasibility	Business Perspective
Construction / Steel	Silica fumes/refractory bricks/concrete blocks	Nascent	Available	Based on scale
Chemical / paint / detergents	Liquid Sodium Silicate/precipitated silica	Nascent	Available	Based on scale
Chemical/Food	Activated carbon	Nascent	Available	Based on scale

PADDY STRAW



Sector	Value addition	Technology	Feasibility	Business perspective
Energy	As a fuel in boiler	Nascent	Commercial plants available	Commercially viable depending on alternate fuel prices
Energy	To manufacture Bio-Natural Gas	Nascent	Commercial plants available	Commercially viable
Energy	To make ethanol	-	Under installation	Govt Blending Policy
Paper Industry	To supplement wood fibres	Nascent	In existing plants	Profitable as is cheaper source

THE PADDY BURNING SEASON IS LIKE LIVING IN A GAS CHAMBER

Major Environmental Pollutant



B) TO RICE BRAN OIL

- 1) High Gamma Oryzanol:
 - Variants to provide optimum dosage of Oryzanol.
- 2) Transfat free oil
- 3) GE / MCPD Compliant oil

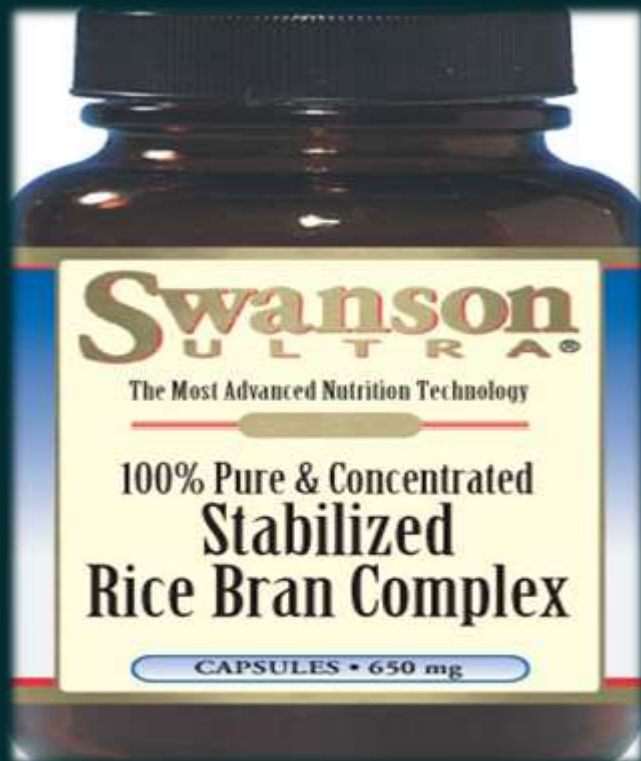


C) TO BY-PRODUCTS OF EXTRACTION



Stablized Rice Bran

- Contains essential fatty acids
- Contains gamma oryzanol as well
- It helps in reducing the levels of cholesterol.
- Prevents occurrence of Type II diabetes
- Reduces high blood pressure
- Prevents intestinal cancer.



Stablized Rice Bran Application in Food Products

- An excellent food additive as such or as dietary fiber in soluble form or a concentrated protein powder
- Enhances the nutritional value of various foods.
- Used with milk to prepare rice bran milk- a high protein drink.
- Soluble Fiber can be used in Snack bars, functional flours



Rice Protein

- Nutritionally complete and rich in essential vitamins and minerals.
- Alternative to soy and whey proteins
- It is an allergy free food option



IP6

- IP6 might prevents cancer.
- An antioxidant. Boosts the immune system.
- It aids in treating anemia, preventing heart diseases and kidney stones. Prevents food from spoiling.



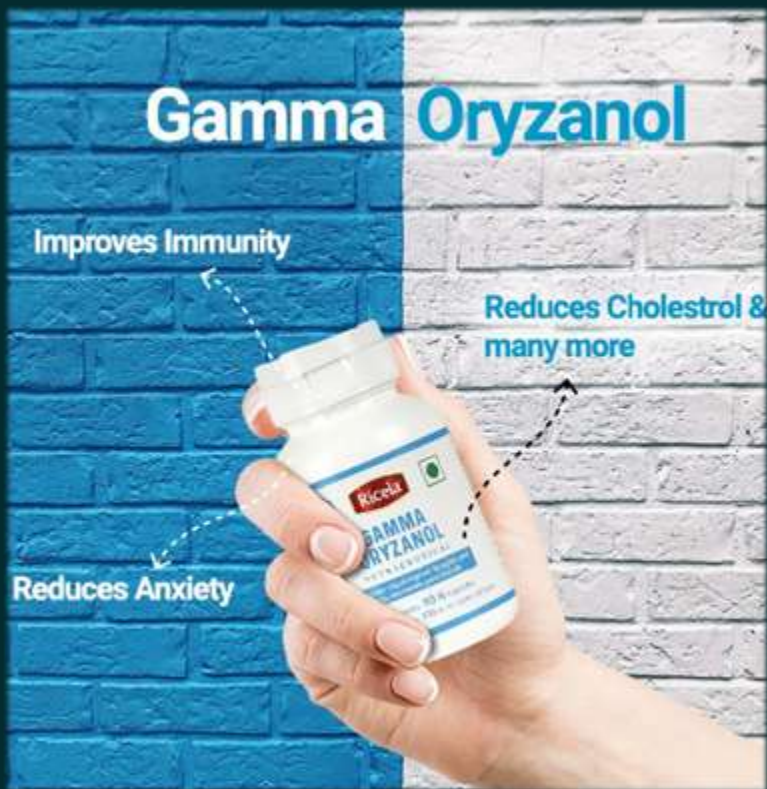
Inositol

- It promotes strong hair, healthier hair, and faster growth.
- It can treat depression and mood swings
- It can help babies with respiratory problems.
- It can treat “Diabetic neuropathy”
- It eases constipation.



D) TO BY-PRODUCTS OF REFINING





Gamma-Oryzanol

- ◆ It is known to have anti-itching, anti-dandruff & anti-ageing properties
- ◆ It is effective in treating broad range of gastrointestinal disorders including stress induced gastric and duodenal ulcers.
- ◆ It is a powerful cholesterol balancing agent.
- ◆ Oryzanol is sold abroad as an agent for body building in humans and for the treatment of nerve imbalance and disorders of menopause.

Food Grade Lecithin (From Gums)

- It is produced from gums produced during production of rice bran oil.
- It aids in proper functioning of the nervous system.
- It is important in energy production improves cell oxygen supply
- It promotes absorption of fat-soluble vitamins



Policosanol / Octacosanol (from Rice Bran Wax)

- It is derived from rice bran wax
- It also reduces the proliferation of cells
- Policosanol also inhibits the formation of clots.



Bypass Fat (from Gums/Fatty Acids)

- Ideal for lactating and transition (dry) animals
- Enhances milk production in early lactating animals
- Delivering Rumen Bypass fat to small intestine efficiently
- Delivers energy during less than optimum conditions (stress, heat, mud, cold, crowding)



Deoiled/Refined Rice Bran Wax

- Can be used as substitute of carnauba wax.
- It is used in paper coatings, textiles, explosives, fruit & vegetable coatings, pharmaceuticals, candles, moulded novelties.
- It can also be used in Cosmetics.



Squalene (from fatty acids)

- Skin nutrient
- Good for skin texture
- Anti-wrinkle properties



Tocotrienols (Rice Fatty Acids)

- Tocotrienols are nutrients that belong to the vitamin E family
- Reverses carotid atherosclerosis, or arterial blockage
- Boost the immune system
- Prevents skin damage and aging.



Plant sterols / Phytosterols

- Scientific studies have confirmed cholesterol lowering properties of plant sterols.
- They are effective at reducing BPH symptoms such as frequent urination, urgency and incomplete voiding.
- Enhance the activity of beneficial immune cells.



Ferulic acid

- Ferulic acid is an antioxidant
- Neutralizes free radicals
- Added as an ingredient in anti-aging supplements
- Decreases blood glucose levels thereby helping diabetes patients.
- Protects against cancer, bone degeneration, menopausal symptoms





- Research Institutes shall come up with techniques to drive value added products which are commercially feasible to manufacture and has a market to deliver.
- Companies shall invest in sponsoring research / enter into MOU's with such institutes.
- Countries where technology is established shall look at Indian refineries as partners to get products manufactured in India

NEED OF THE HOUR



THANK
YOU

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