

# BIORIZ<sup>TM</sup>

NATURAL RICE HULLS  
STEAM STERILIZED  
FOR FILTRATION OF ALIMENTARY LIQUIDS





# WHAT IS BIORIZ...

BIORIZ is a precious and useful aid for the filtration of beer wort, rennet and all food liquids in general. It is widely used in the filtration of beer wort (from the simplest forms to, and above all, the more complex ones) rich in rye or beers produced with malts which have a high percentage of grains without glumes. Since it is a very voluminous material only small amounts are required: approx 500g/1kg per 20 litres of

beer. It does not alter the organoleptic qualities of the beer and is 100% natural, dedusted and steam sterilized at 130°C, totally organic and easily disposable at the end of its cycle of use.

It is available all year round in 200 l packages (approx. 20 kg)

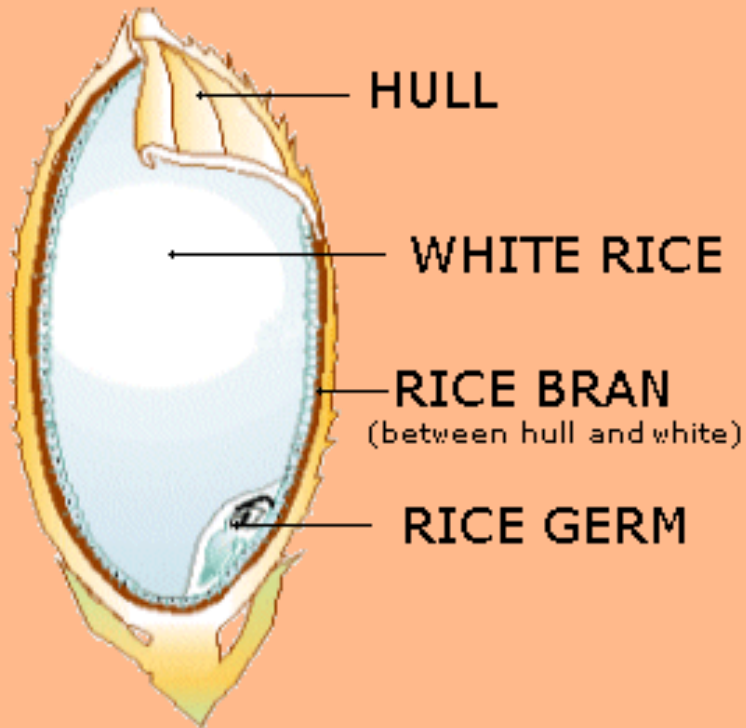


- STEAM STERILIZED 130 °C
- DEDUSTED
- ECONOMICAL
- VEGETABLE AND NATURAL
- DOES NOT ALTER THE ORGANOLEPTIC CHARACTERISTICS
- ALWAYS AVAILABLE
- DOES NOT ROT
- IMPREGNABLE TO INSECTS
- 100% ITALIAN PRODUCT



## RICE HUSK

It is a by-product obtained from rice processing known as dehulling. This operation allows the siliceous floral bract commonly known as rice husk to be separated by means of rubbing with specific shelling or hulling machines. At this point in the process the rice husk is ready to be transferred into the dedusting system and later for packaging.



## STERILIZATION

The sterilization process occurs when the rice husk is still an integral part of the rice grain. This processing enables the rice mills to obtain a particular kind of rice called "Parboiled" resistant to longer cooking times and with greater preservation capabilities. The rough rice is soaked in large tanks of hot water, then undergoes high temperature steam (130 °C approx.) vacuum treatment and finally is rapidly dried. In this final and only stage of the cooking process the rice husk is sterilized without any pesticides or weed killers which may have been present before harvesting and is ready for the final process of separation from the rice grain, dedusting and packaging.





# HOW AND WHY TO USE BIORIZ...

As we were saying, BIORIZ comes to the master brewer's rescue to filter mixtures rich in rye or in mixtures with malt containing a low percentage of glumes, and in general for all kinds of mixtures from the more complex and full-bodied beers to the lighter, simpler ones. The rice husk can be used in general in two different phases, depending on the brewhouse available:

- In the mash vat, in the mash-out step: the rice husk can be inserted in this phase for a better mixing of the dough
- In the lauter bin in the filtration step: inserting the rice husk before the transfer of mixture in the lauter bin

Added to the bed of brewer's grains it prevents it from being compacted and favours the passage of the wort without altering its organoleptic characteristics.

## HOW MUCH TO USE BIORIZ?

The dosage may vary from 3% to 8% depending on the use of malts or cereals that hinder the filtration (non-malted cereals, cereals without glumellae or malts that tend to become floury). Since it is a 100% natural product and is steam sterilized by autoclaving at a temperature higher than 130 °C, it will not alter the organoleptic characteristics of the liquids filtered in any way, even when - should it be necessary - it is added directly to the wort just before filtration.



## THE CHEMICAL CHARACTERISTICS...

| <b>Nutrient (dry basis)</b>              | <b>IR29</b> | <b>IR32</b> |
|--|-------------|-------------|
| <b>Crude fibre (%)</b>                   | <b>36.0</b> | <b>38.3</b> |
| <b>Neutral detergent fibre (NDF) (%)</b> | <b>84.3</b> | <b>83.9</b> |
| <b>Acid detergent fibre (ADF) (%)</b>    | <b>78.4</b> | <b>80.5</b> |
| <b>Hemicellulose (%)</b>                 | <b>5.9</b>  | <b>3.4</b>  |
| <b>Cellulose (%)</b>                     | <b>34.1</b> | <b>37.0</b> |
| <b>Cutin (%)</b>                         | <b>6.7</b>  | <b>5.7</b>  |
| <b>Permanganate lignin (%)</b>           | <b>11.7</b> | <b>13.3</b> |
| <b>Insoluble silica (%)</b>              | <b>25.9</b> | <b>24.5</b> |
| <b>Energy content (j/g)</b>              | <b>12.9</b> | <b>13.1</b> |
| <b>Crude protein (% N x 6.25)</b>        | <b>1.9</b>  | <b>1.8</b>  |
| <b>Lysine (g/16 g N)</b>                 | <b>4.4</b>  | <b>3.9</b>  |
| <b>Proline (g/16 g N)</b>                | <b>12.2</b> | <b>10.9</b> |