



Developing innovative Food and beverages by integrating rice-based ingredients.

TRACING RICE AND VALORIZING SIDE STREAMS ALONG
MEDITERRANEAN BLOCKCHAIN

28.10.2024



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Investigação Agrária e
Veterinária, I.P.

The main objective is to find novel products from rice or with rice by products

For this we would use a by-product of rice, which is rice bran. In Spain it is mainly used for animal feed because it spoils easily due to its fatty load.



variety

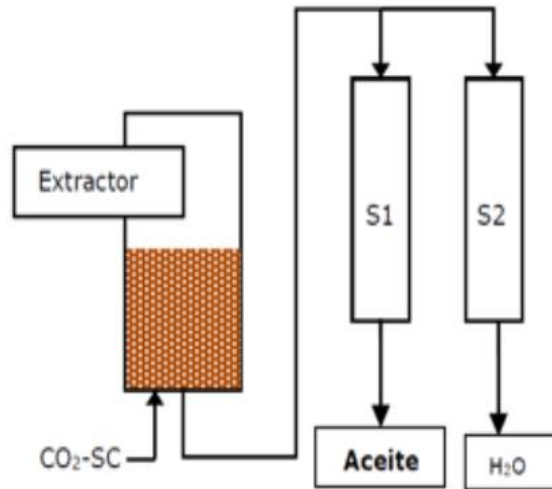
The choice of rice variety “Arroceras Pons” recommendation was to use the **J.Sendra** variety, because they would have that variety and it is very controlled. Their client demands it. As for the quality of the oil, it is more or less similar to the others



Arrocerías Pons



Supercritical fluid extraction (CO₂)



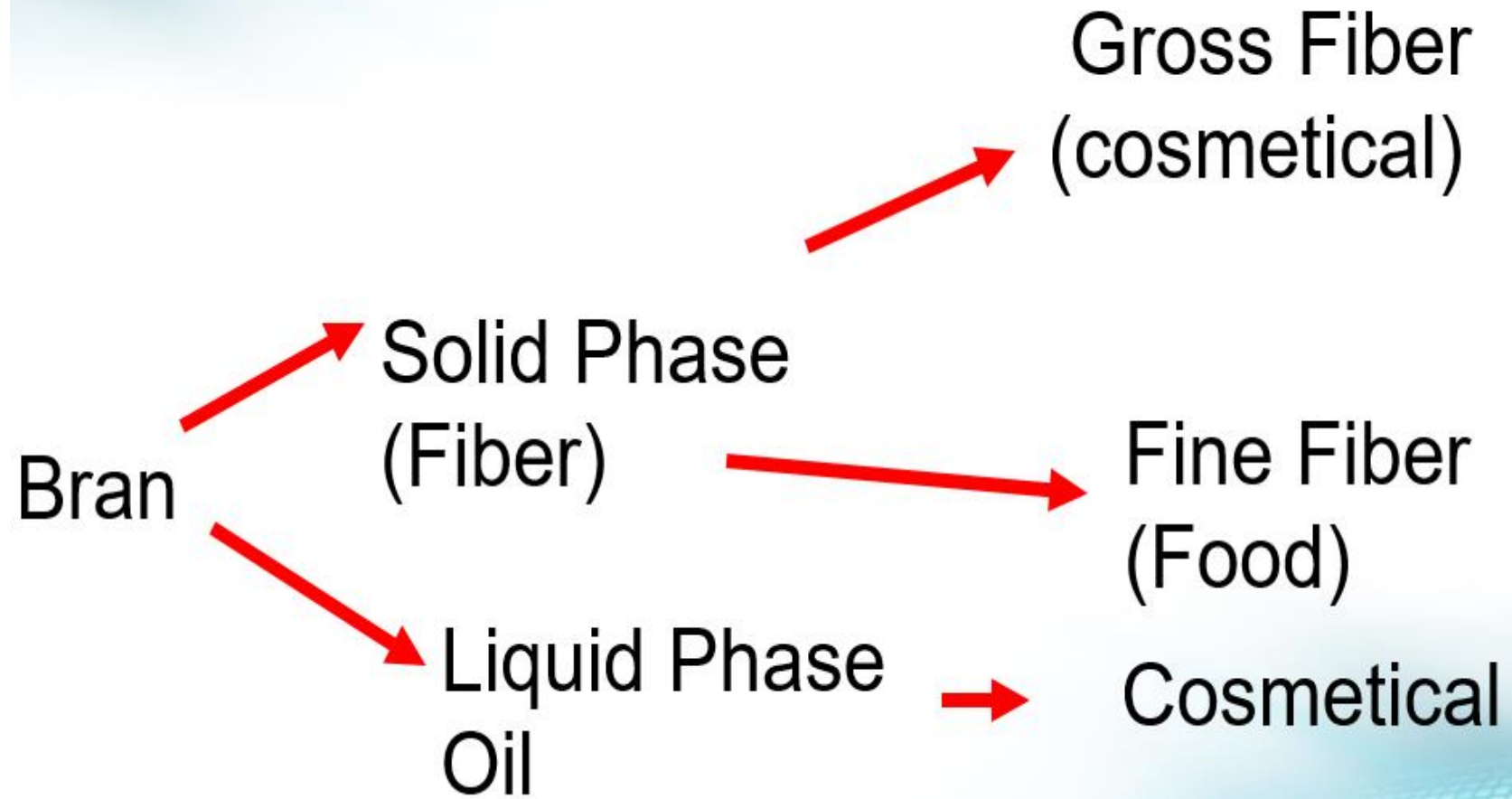
	Temperatura extracción (°C)	Presión (bar)	Relación CO ₂ /materia prima
Proceso referencia	55	300	80



Nutrients	Oil
Protein	0,700
Fat	93,800
Humidity	5,500
Ashes	0,100
Carbohydrates	0,100
Energy	844,000

Nutrients (g/100 g)	
Crude fiber	13,590
Total dietary fiber	33,160
Soluble Fiber	20,880
Insoluble fiber	12,280
Fat	7,000

Nutrients	Columna1
Alfa-Tocoferol	16,930
Gamma Tocoferol	8,110
Beta tocoferol	7,050
Alfa-Tocotrienol	8,100
Gamma Tocotrienol	3,660
Beta-Tocotrienol	1,5
Total Tocoferols	30,440
Total Tocotrienols	12,090



Fiber

Preparation of breads and baked goods with rice fiber

For this we will use different matrices (with gluten and gluten-free)

Bread

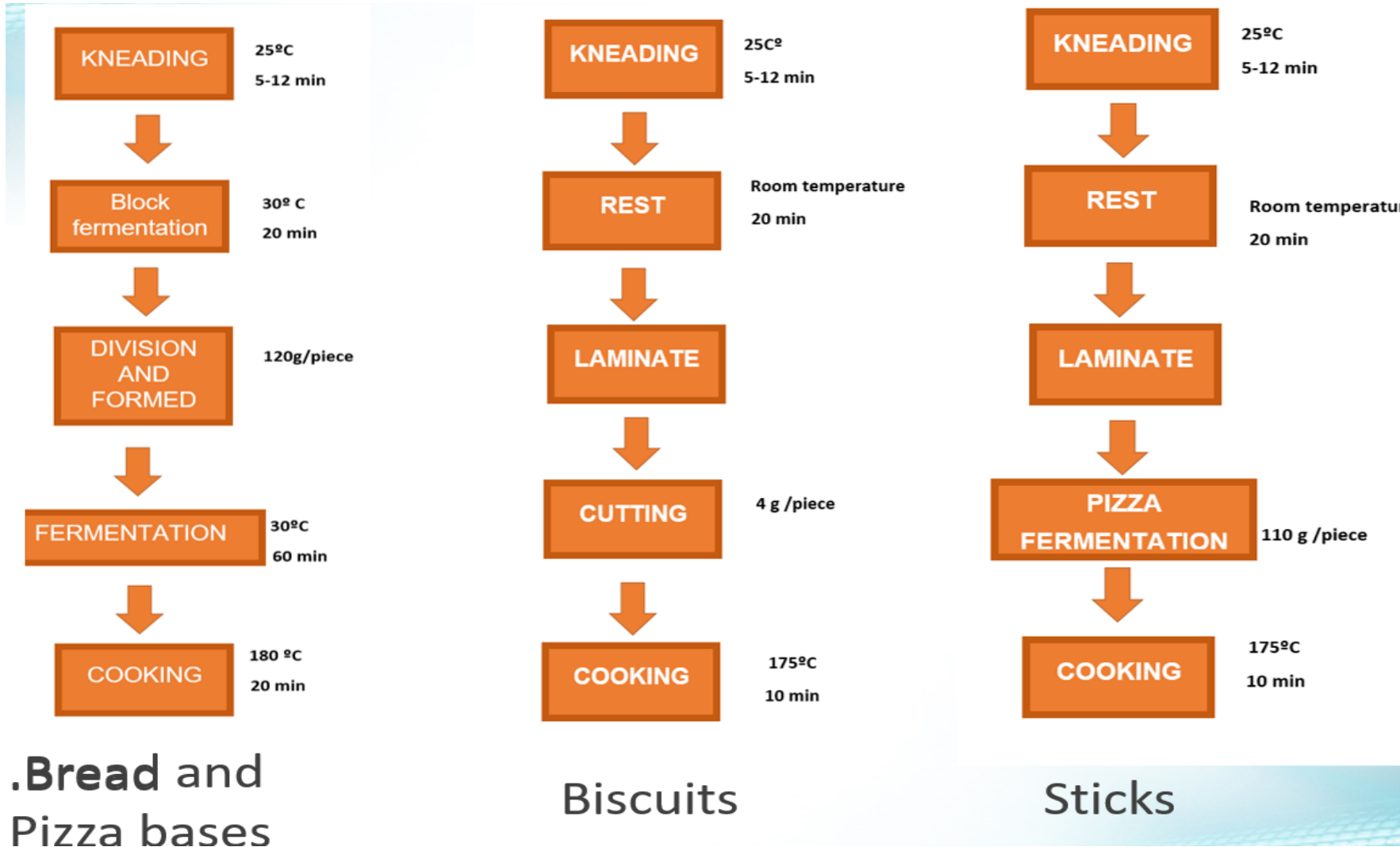
Biscuits

Stick

Pizza bases

-Our objective is to check how rice fiber affects our matrices





**.Bread and
Pizza bases**

Biscuits

Sticks

Basic Gluten Bread Formula	Kg
Wheat flour	0,527
Rye flour	0,050
Freeze-dried sourdough	0,020
Improver 'bread with gluten'	0,000
Salt	0,015
yeast	0,011
Water	0,376
TOTAL	1,000

Basic gluten-free bread formula	Kg
Rice flour	0,154
Starch	0,406
hydrocolloids	0,073
Improver 'gluten gluten free'	0,007
bread flavour	0,002
Salt	0,014
yeast	0,011
Water	0,333
TOTAL	1,000

Basic Gluten Bread Formula 1	Kg	Basic Gluten Bread Formula 2	Kg	Basic Gluten Bread Formula 3	Kg
Wheat flour	0,377	Wheat flour	0,367	Wheat flour	0,357
Rye flour	0,050	Rye flour	0,050	Rye flour	0,050
Freeze-dried sourdough	0,020	Freeze-dried sourdough	0,020	Freeze-dried sourdough	0,020
Rice fiber	0,150	Rice fiber	0,160	Rice fiber	0,170
Improver 'bread with gluten'	0,000	Improver 'bread with gluten'	0,000	Improver 'bread with gluten'	0,000
Salt	0,015	Salt	0,015	Salt	0,015
yeast	0,011	yeast	0,011	yeast	0,011
Water	0,376	Water	0,376	Water	0,376
TOTAL	1,000	TOTAL	1,000	TOTAL	1,000
Basic Gluten Bread Formula 4	Kg	Basic Gluten Bread Formula 5	Kg	Basic Gluten Bread Formula 6	Kg
Wheat flour	0,367	Wheat flour	0,367	Wheat flour	0,367
Rye flour	0,050	Rye flour	0,050	Rye flour	0,050
Freeze-dried sourdough	0,020	Freeze-dried sourdough	0,020	Freeze-dried sourdough	0,020
Rice fiber	0,160	Rice fiber	0,160	Rice fiber	0,160
Improver 'bread with gluten'	0,0002	Improver 'bread with gluten'	0,0003	Improver 'bread with gluten'	0,0004
Salt	0,015	Salt	0,015	Salt	0,015
yeast	0,011	yeast	0,011	yeast	0,011
Water	0,376	Water	0,376	Water	0,376
TOTAL	1,000	TOTAL	1,000	TOTAL	1,000



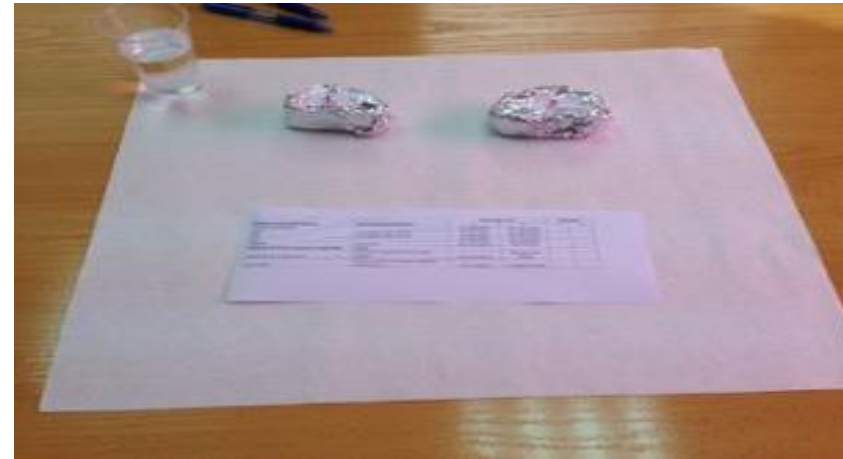


✓ FIBER DOES NOT AFFECT MACHINABILITY.

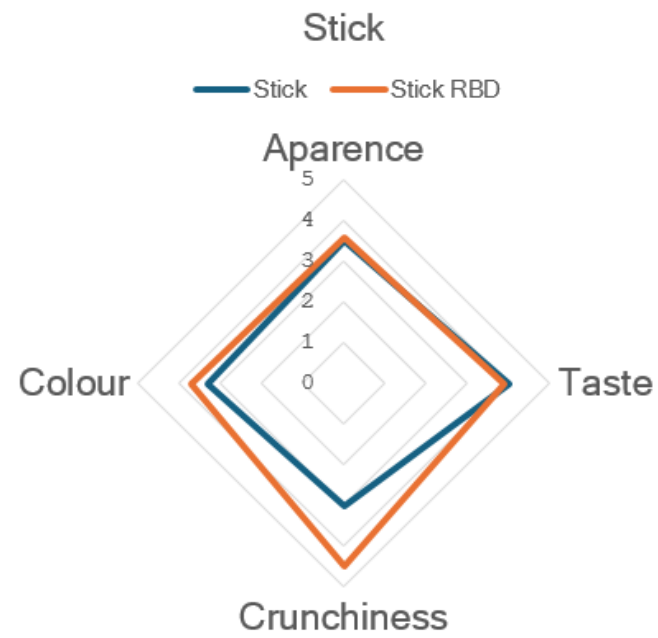
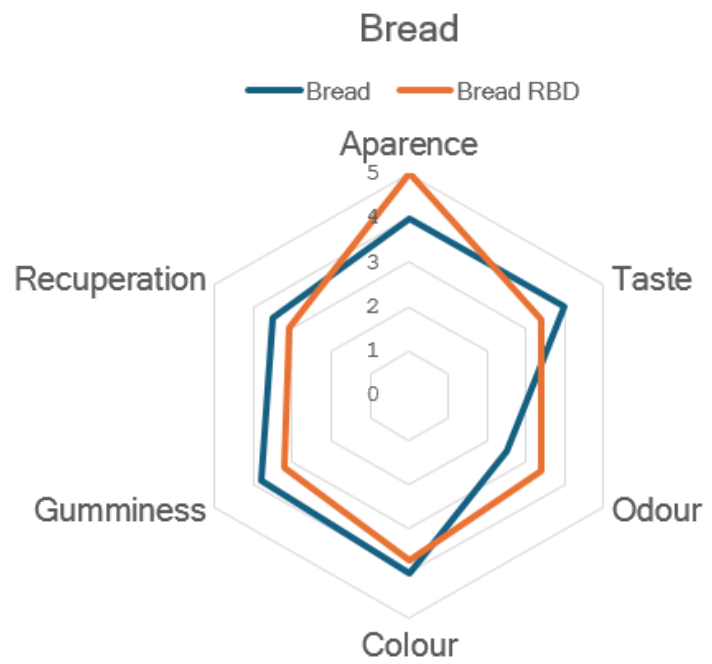
✓ FIBER DOES NOT AFFECT RHEOLOGY

Sensory analysis evaluation

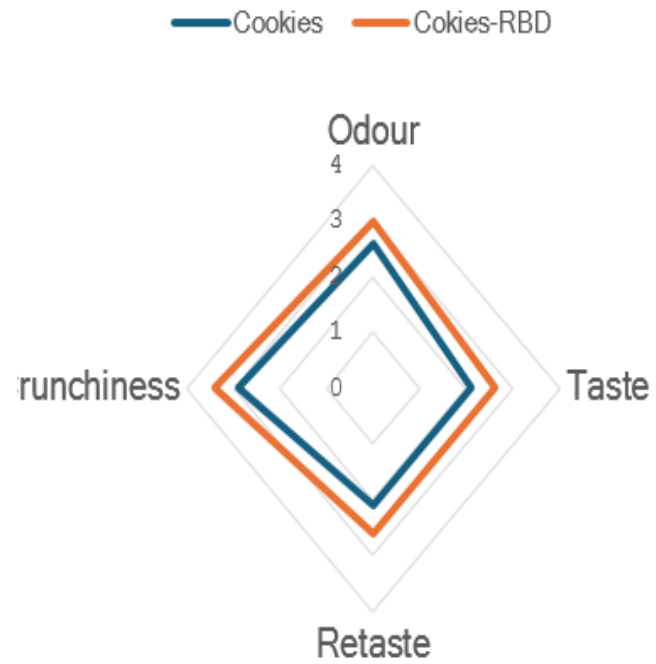
DESCRIPTORS	Definitions
APPEARANCE	See product
TASTE	product flavor
SMELL	smell the product
COLOR	See the product
AFTERTASTE	Residual taste perception
RECOVERY CAPACITY	Degree of recovery of the original shape when compressed up to 50% with the index finger
GUMMY	Degree to which the sample remains in the mouth and can be swallowed
BITE	Sensation perceived when taking the bite
CHEWABLE	Ease with which the sample is allowed to be chewed according to the product tested
CRUSHING	Nice fracture rate of the product



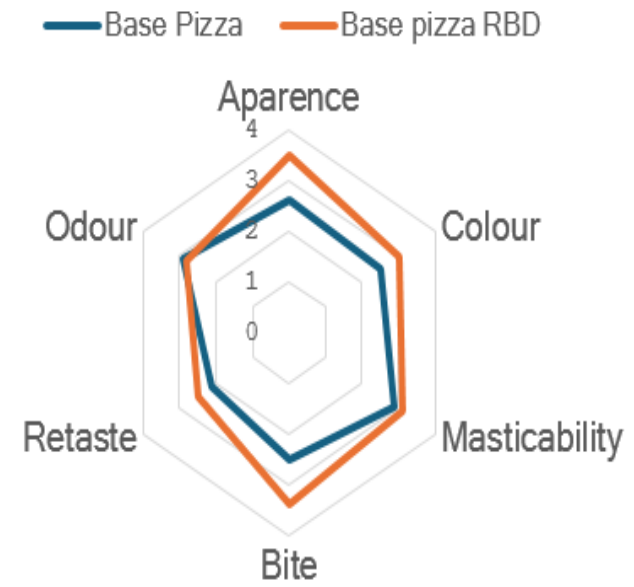
MATRIX VS MATRIX + RBD



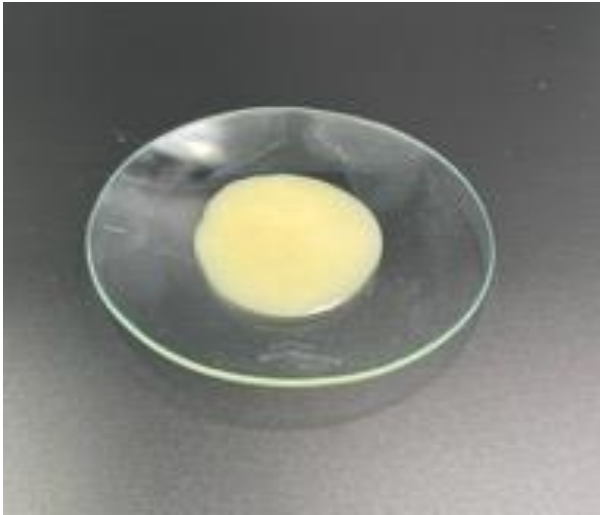
Cookies



Base Pizza



OIL



-COOK

-COSMETICAL

- This oil is absorbed quickly and does not smear. So, products that help its absorption are not needed, at least not in large quantities.
- It is suitable for all skin types, including oily skin and especially mature skin.
- It can be used continuously. In principle, no adverse effects are observed.
- The product already has a cosmetic registration (when it comes to its industrial sale it is essential).



Organic Line

Natural stabilized oil



Crude oil



Cosmetic Line

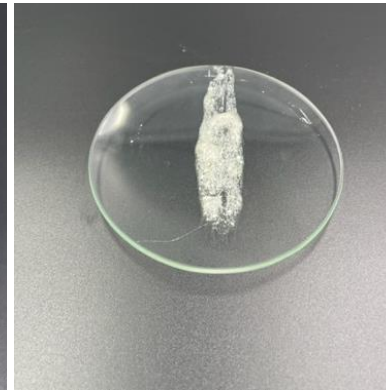
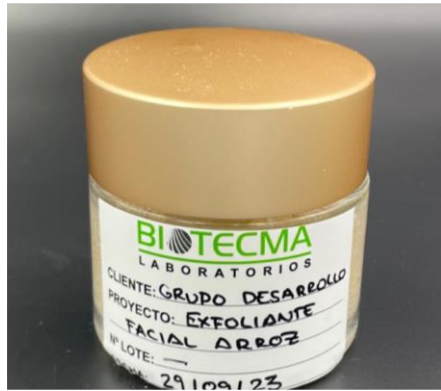
Rice oil facial cream



Anti-aging face cream rice



Rice facial scrub



Rice Body Scrub



CONCLUSION

As can be seen, rice is a very complete product. From the use of the polished grain to the whole grain. But its by-products are equally attractive, both its stabilized fibers and its fatty part.

It has been obtained products rich in fiber, but without undermining its organoleptic attributes. Moreover, in some cases they are superior to a basic formula.

As for the fatty part, it can be seen a very versatile product, since it can be used for food and cosmetics. Its qualities for skin care.

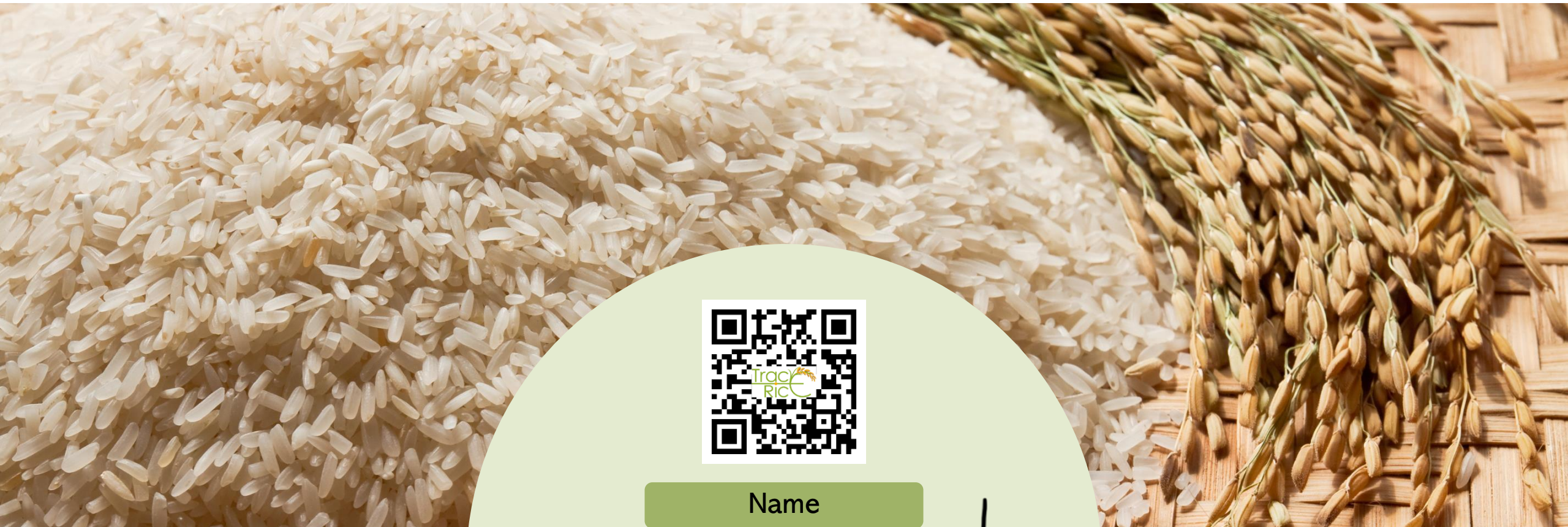
It would be interesting to fully exploit rice as winemaking has done. There are companies like MATARROMERA that have a comprehensive exploitation of the world of wine



iBET

ITqb

UNIVERSIDADE
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DE LISBOA



Name

thank you!