
Rice Line
Sustainable Rice derivatives
Natural exfoliating and texturizing agents
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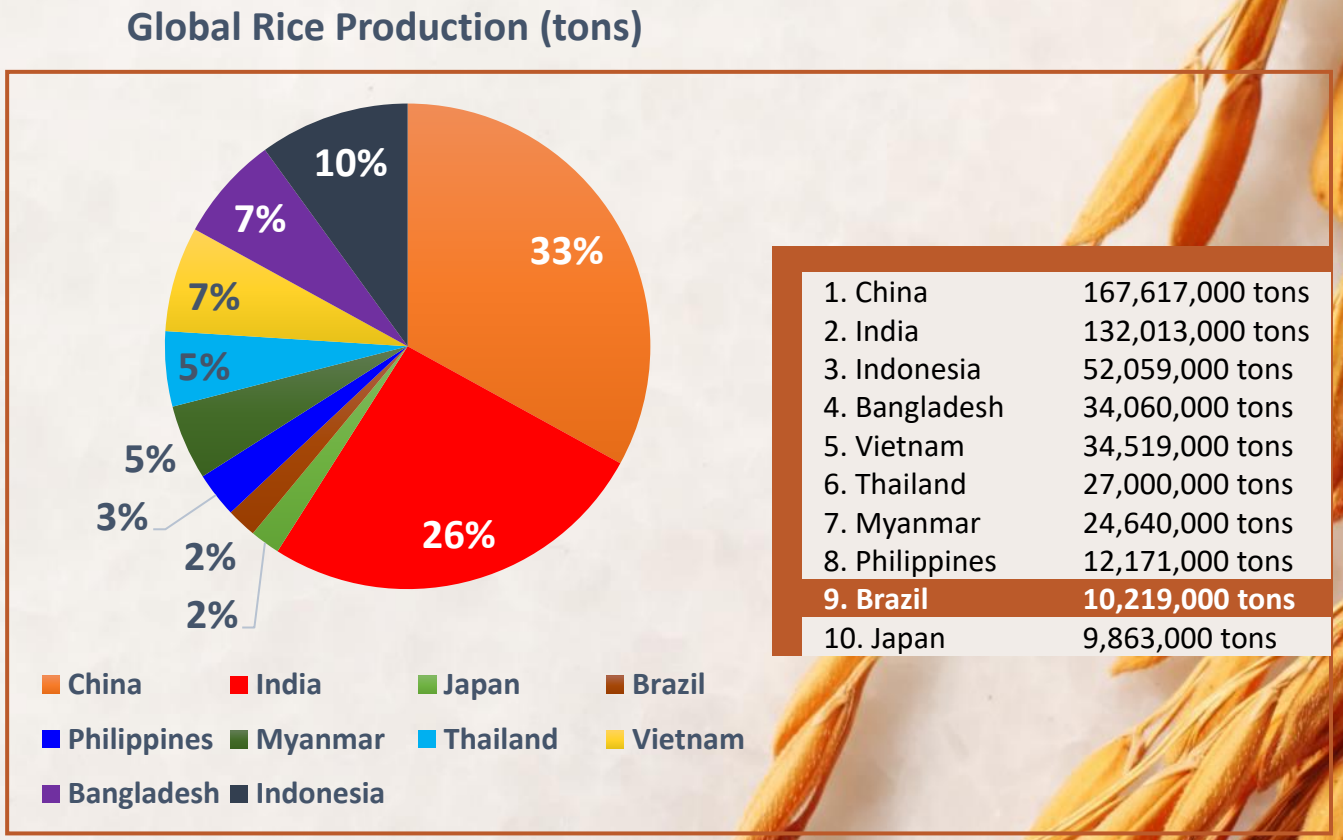
Rice

Brazil takes 9th place

in the world with the largest production of rice, even in front of Japan. Outside Asia, Brazil is the largest producer and consumer of rice.



1. China	167,617,000 tons
2. India	132,013,000 tons
3. Indonesia	52,059,000 tons
4. Bangladesh	34,060,000 tons
5. Vietnam	34,519,000 tons
6. Thailand	27,000,000 tons
7. Myanmar	24,640,000 tons
8. Philippines	12,171,000 tons
9. Brazil	**10,219,000 tons**
10. Japan	9,863,000 tons

Did you know...

- Rice originated in Japan, where it has been cultivated for millennia;
- Rice is the 3rd most cultivated food in the world, only falling behind wheat and corn;
- It is also the most widely consumed food worldwide;
- Brazilians consume an average of 40 kilos of rice per year.

Source: https://super.abril.com.br/tudo-sobre/arroz/
http://www.euamoarrozefeijao.com.br/2016/06/curiosidades-sobre-o-arroz/

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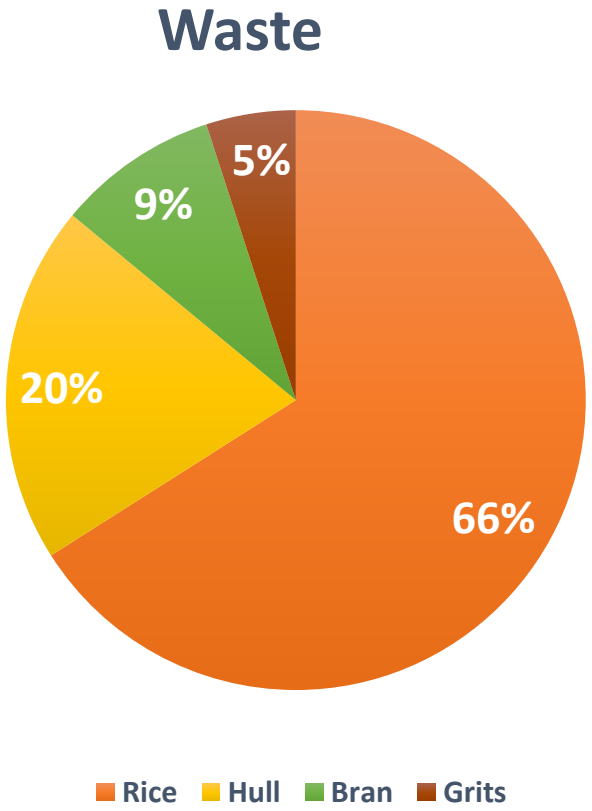
Structure of rice

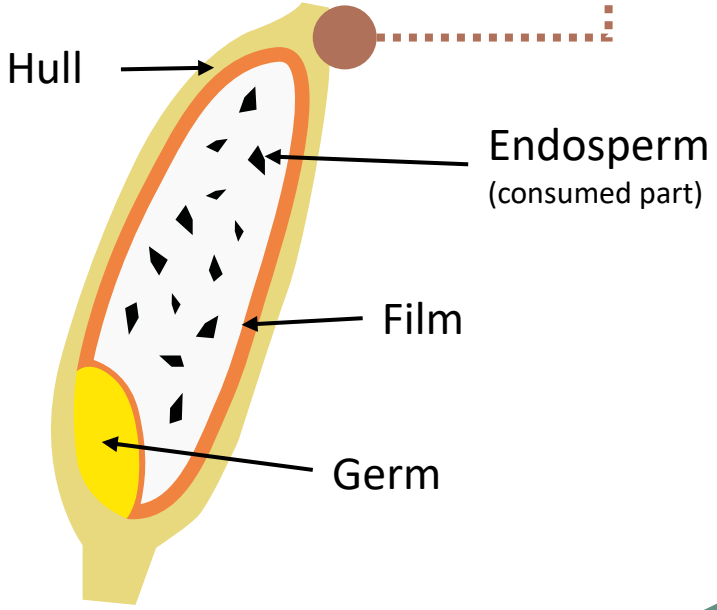
Rice processing generates a number of byproducts:

Grits: broken grains or grain fragments;

Bran: consisting of the film and germ which are removed during the grain polishing stage;

Hull: represents the largest volume of its byproducts, which can reach 22% of yield.





Source: Industrial processing and management of rice byproducts in Brazil

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Rice hull

Rice hull can be used in several ways, one of which is burning it for energy generation. This results in an ash that is considered a **valuable waste product,** because it contains a **high percentage of silica** (around 92%). However, if it is discarded into the environment, it can become a source of pollution.

Ideal industrial production generates **zero waste**, so if this ash is directly or indirectly used for any commercial purpose, this closes the industrial processing cycle of rice, enabling **full use of the raw material**, since bran, germ and other parts already have a destination in the market. We can define this chain of using rice hull as a **circular economy.**

Source: Applicability of rice hull ash
Industrial processing and management of rice byproducts in Brazil

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ZERO
Waste

Raw material
RICE

Processing

GRAIN
Human consumption

WASTE
BRAN
Animal feed
Fertilizers

CIRCULAR ECONOMY

WASTE
GRITS Animal feed and human consumption

WASTE
HULL Energy Generation (Burning)

ASH

Line RICE

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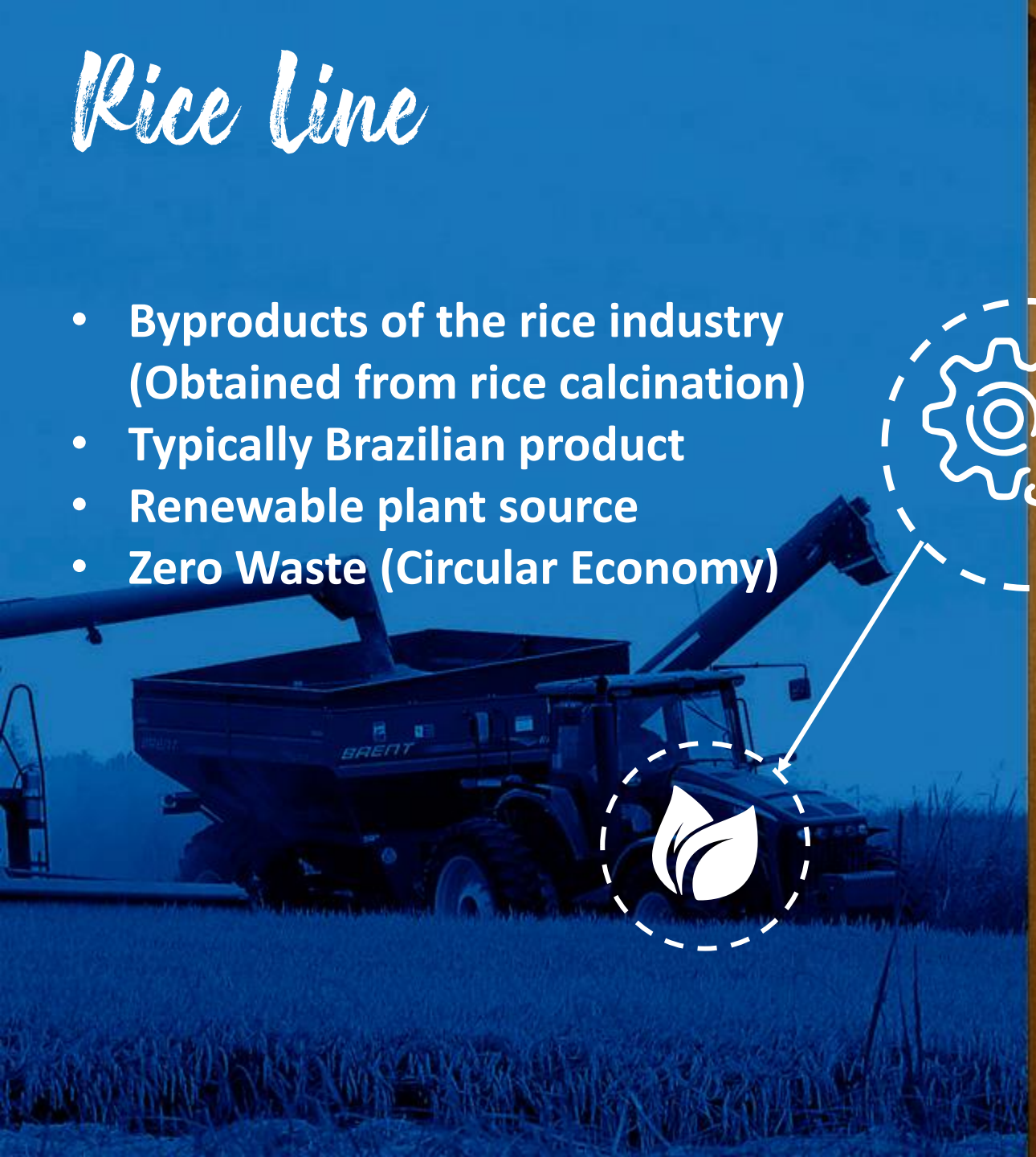
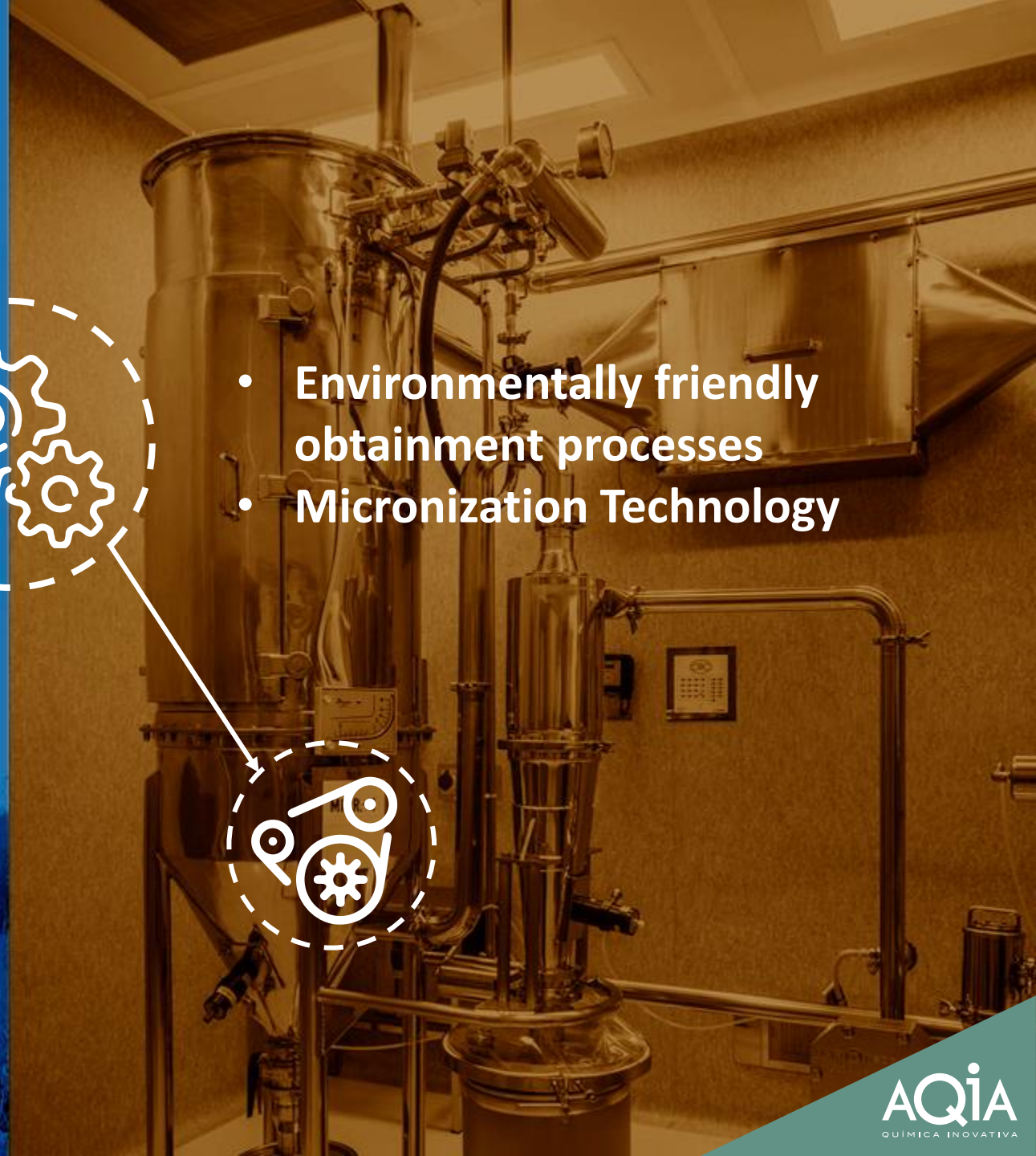
Rice Line

- Byproducts of the rice industry (Obtained from rice calcination)
- Typically Brazilian product
- Renewable plant source
- Zero Waste (Circular Economy)

- Environmentally friendly obtainment processes
- Micronization Technology





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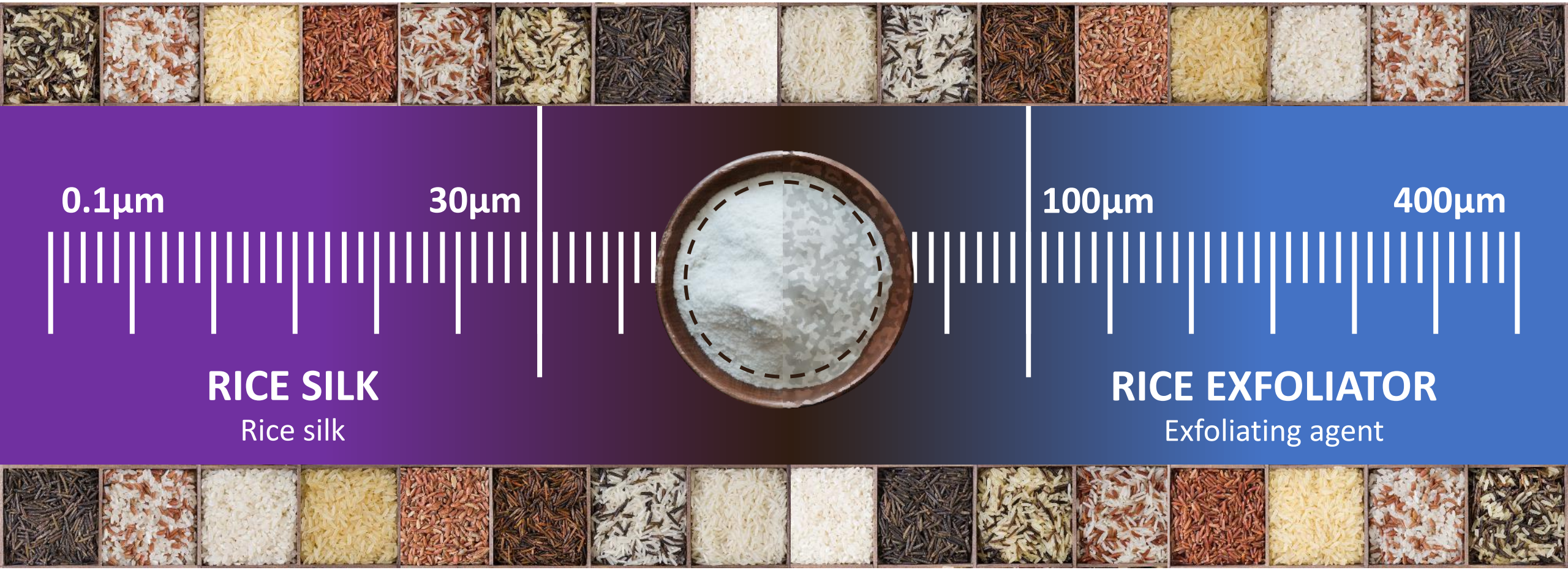
Rice Line

Natural exfoliating and texturizing agents

Different grain sizes → Different properties



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The Rice Line offers an *Eco.sustainable and 100% plant-based alternative* to the inputs usually used in **cosmetics and personal hygiene products:**

RICE EXFOLIATOR

Alternative to:

- Spheres of synthetic origin
- Exfoliants with non-standardized particle sizes that can be harsh on the skin

RICE SILK

Alternative to:

- Mineral silica
- Synthetic silica
- Silicones

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Rice Exfoliator

Natural Exfoliating Agent

Gentle exfoliant and abrasive agent derived from rice, formed primarily by silicon dioxide.

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Environmentally friendly obtainment processes

Rice hull
(Byproduct)

Hull combustion to obtain energy

Calcination

Rice hull ash

Extraction SiO_2

Silica solution

Polymerization

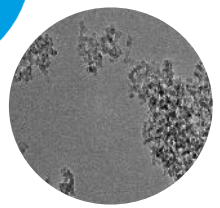
Silica with high water content

Drying

Silica before Classification (SiO_2)

Classification

Particle clusters



Impact environmental

RICE EXFOLIATOR

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Rice Exfoliator

GENTLE ABRASIVE ACTION

- Ideal grain size for gentle but efficient exfoliation
- Homogenous particles

EASE FOR THE FORMULATOR

- Easy to suspend

NATURAL EXFOLIATING AGENT

- Byproducts of the rice industry
- Renewable plant source
- Zero Waste (Circular Economy)
- Plant-based alternative to synthetic exfoliants

BENEFITS

- Removal of dead cells from the skin’s surface
- Epidermal renewal
- Unclogging pores
- Gentle but effective cleansing
- Healthy, smooth and soft skin

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Clarins

My Clarins Re-Move Radiance Exfoliating Powder

Gentle exfoliating powder formulated with natural microbeads and purifying plant powders to polish away impurities and detoxify skin.

9wishes

Rice Foaming Cleanser

Non-irritating foaming cleanser hydrates skin even after thoroughly ridding skin of makeup, the day's grime, and excess sebum. Infused with nourishing rice extract, it helps to minimize and cleanse pores, and visibly brightens, leaving a smoother and healthier complexion. Features: 1. Non irritation daily exfoliating cleanser with fine rice powder. - Uses

Humanrace

Rice Powder Cleanser

A gentle powder-to-foam cleanser that you control with water. Packed with rice particles, fruit ahas and snow mushroom, it leaves skin purified, balanced and brighter every day.

Nivea

Gel exfoliante facial de arroz con bio arandano

Exfoliante de origen natural intensidad 2

Uploaded by: arle on 09/08/2020

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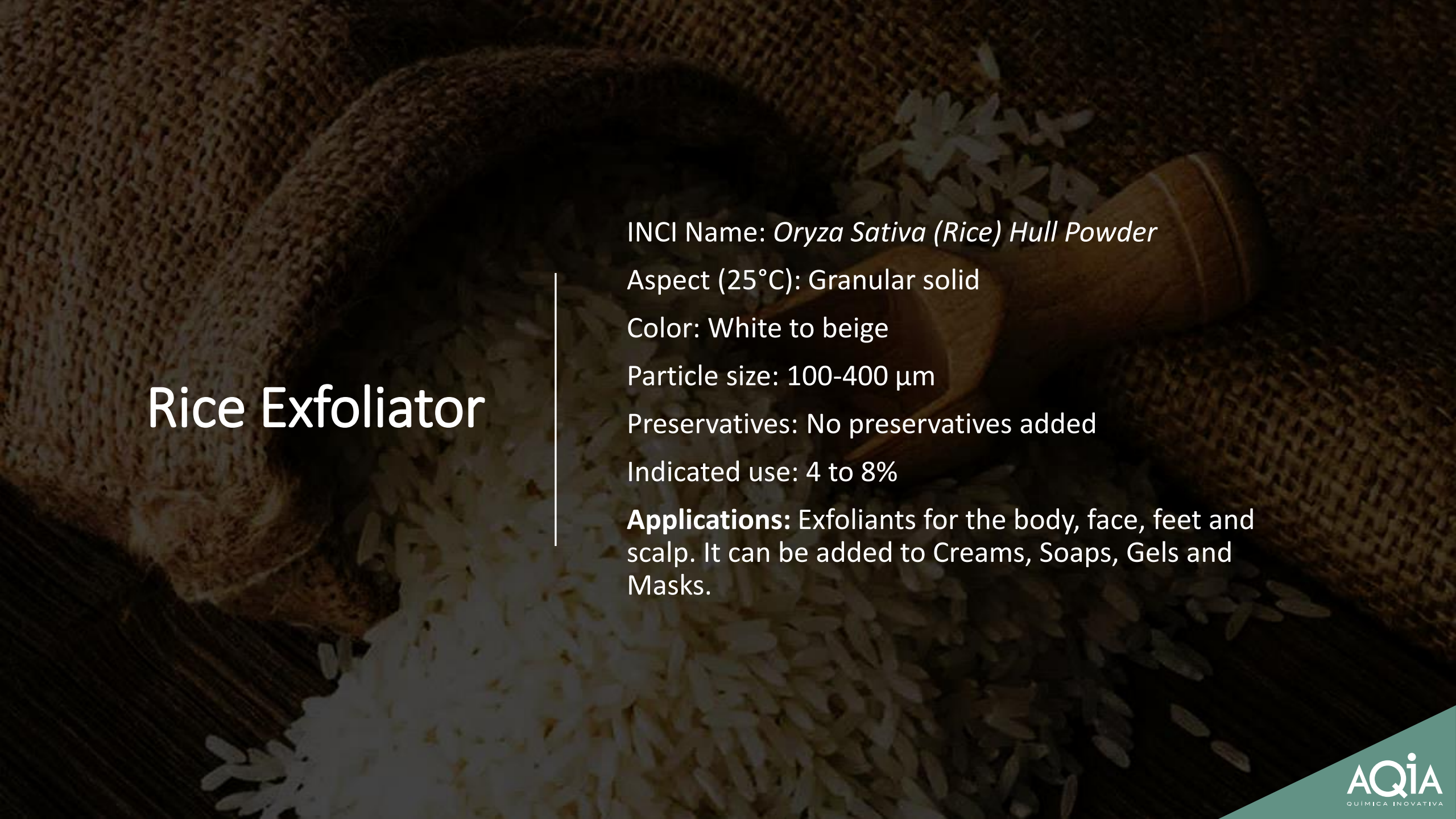

Rice Exfoliator

INCI Name: *Oryza Sativa (Rice) Hull Powder*

Aspect (25°C): Granular solid

Color: White to beige

Particle size: 100-400 µm

Preservatives: No preservatives added

Indicated use: 4 to 8%

Applications: Exfoliants for the body, face, feet and scalp. It can be added to Creams, Soaps, Gels and Masks.

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Rice Silk

Rice Silk | Natural Texturizing Agent

Ultra-fine powder of 100% plant origin, derived from rice, rich in silicon dioxide and obtained through state-of-the-art micronization technology.

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Environmentally friendly obtainment processes

Rice hull
(Byproduct)

Hull combustion to obtain energy

Calcination

Rice hull ash

Extraction SiO_2

Silica solution

Polymerization

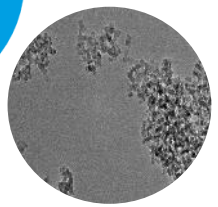
Silica with high water content

Drying

Silica before Classification (SiO_2)

Classification

Particle clusters



RICE EXFOLIATOR

Micronization

RICE SILK

Impact environmental

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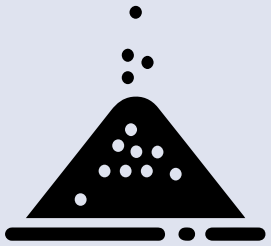
Micronization Technology

Ultrafine Micronization (Air Jet Mills)

Micronization by compressed air mills (Air Jet Mills) is an ultrafine autogenous grinding process that happens due to the shock between particles of the product itself. Upon receiving the energy of compressed air, it gains speeds of up to 500m/s.



With the shock, particles decrease in size until they reach the desired granulometry.

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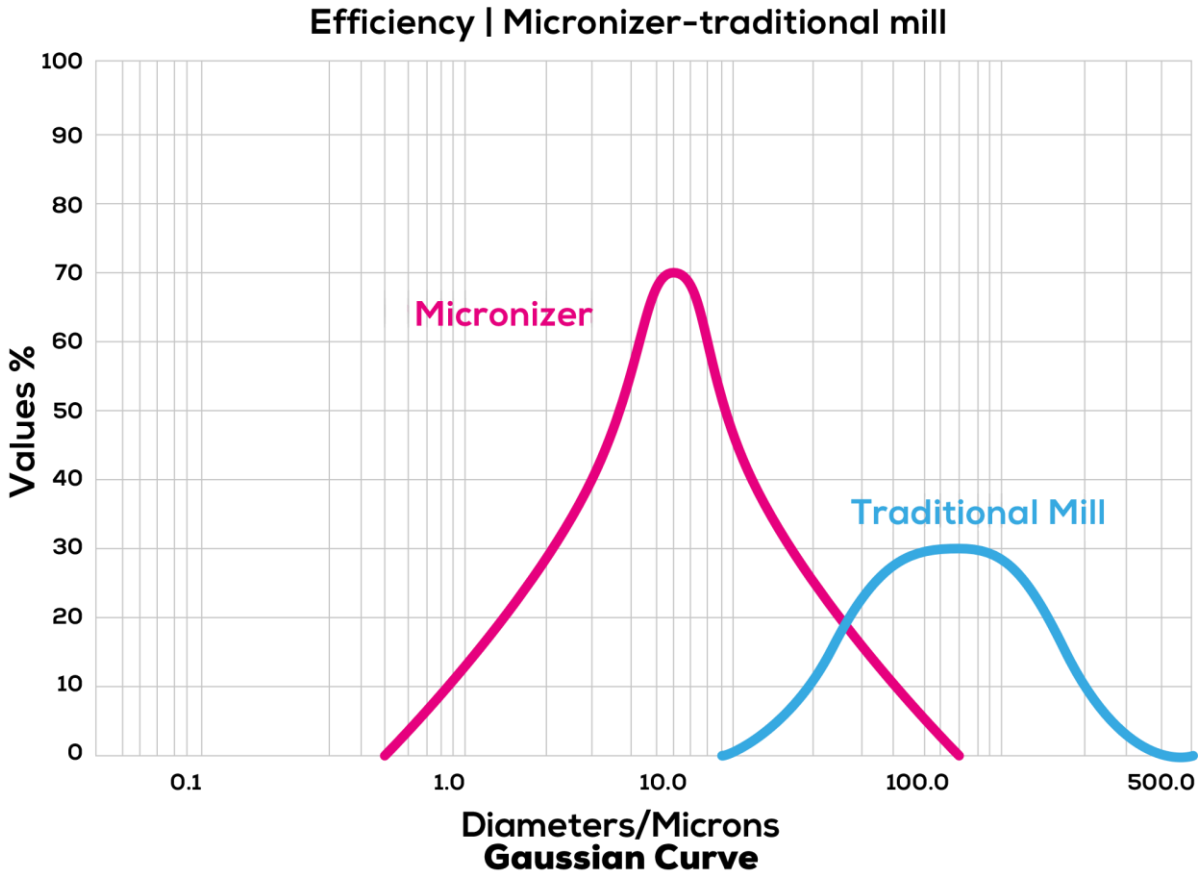
Benefits

- It achieves smaller particle sizes than other types of mills, and can reach 1 micro in average diameter.
- More homogeneous particle size
- Low process temperature
- No mechanical elements, no contamination of metals, lubricants, oils, etc



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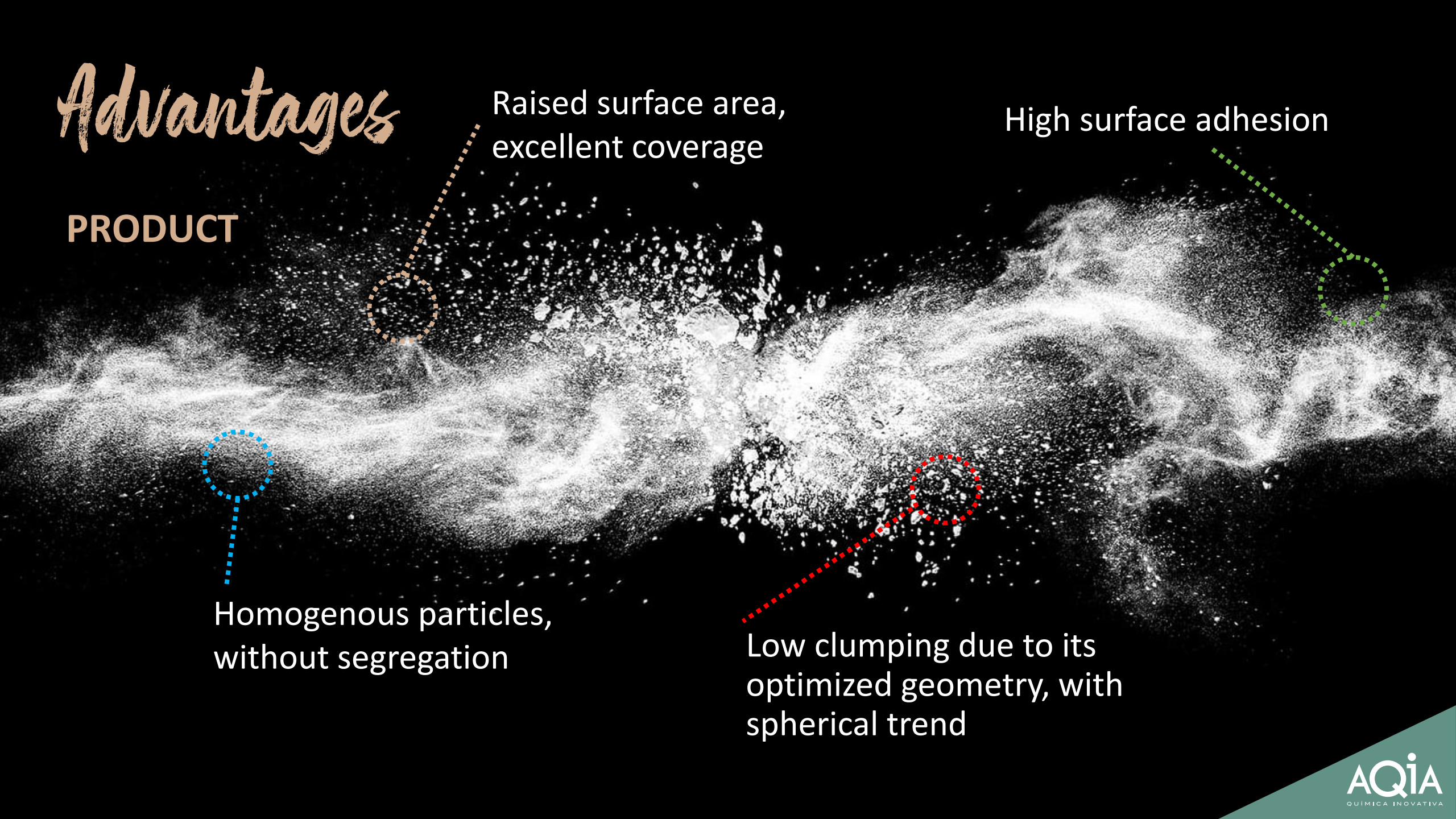
Advantages

PRODUCT



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Application Test – Oil Absorption Capacity

Evaluation of the oil absorbing capacity of Rice Silk in comparison with other powders commonly used for this purpose.

METHODOLOGY

1g of the powders to be evaluated were weighed separately (Rice Silk; Methyl Methacrylate Crosspolymer - PMMA; Nylon-12; bamboo powder - *Bambusa Arundianacea Stem Extract*) and incorporated, gradually, capric and caprylic acid triglyceride until the saturation of the powders. The amount of emollient that each powder was able to absorb was weighed, showing the following results:

Smaller particle size

Product	Chemical classification	Granulometry	Amount of oil	Absorption Capacity
Rice Silk	Silica	**5-10µm**	2,00g	**200%**
Methyl Methacrylate Crosspolymer (PMMA)	Plastic	5-15µm	0,56g	**56%**
Nylon 12	Plastic	20µm	0,80g	**80%**
Bamboo powder (*Bambusa Arundianacea Stem Extract*)	**Silica**	**15µm**	**1,60g**	**160%**

Greater oil absorption capacity

Rice Silk presented an oil absorption capacity superior to the competing products!!

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Clinical Test

SEBUMETRY

Evaluation of the effectiveness of Rice Silk in reducing oiliness in volunteers with mixed and oily skins

Methodology

Application of a gel with 5% Rice Silk on 21 volunteers (men and women), aged 22 to 35, phototypes II to IV, with mixed to oily skin. Evaluation was carried out in the “zone T” by the MPA 580 equipment with Sebumeter probe, for 5 hours (T0, T1, T2, T3, T5).

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Resultados

SEBUMETRY

Rice Silk reduced the oiliness of the skin:

- 70% after 1 hour;
- 53% after 2 hours;
- 37% after 3 hours;
- 25% after 5 hours;

- When compared to the initial condition of the skin.

Rice Silk significantly improves (reduces) skin oiliness up to 5 hours after application!!

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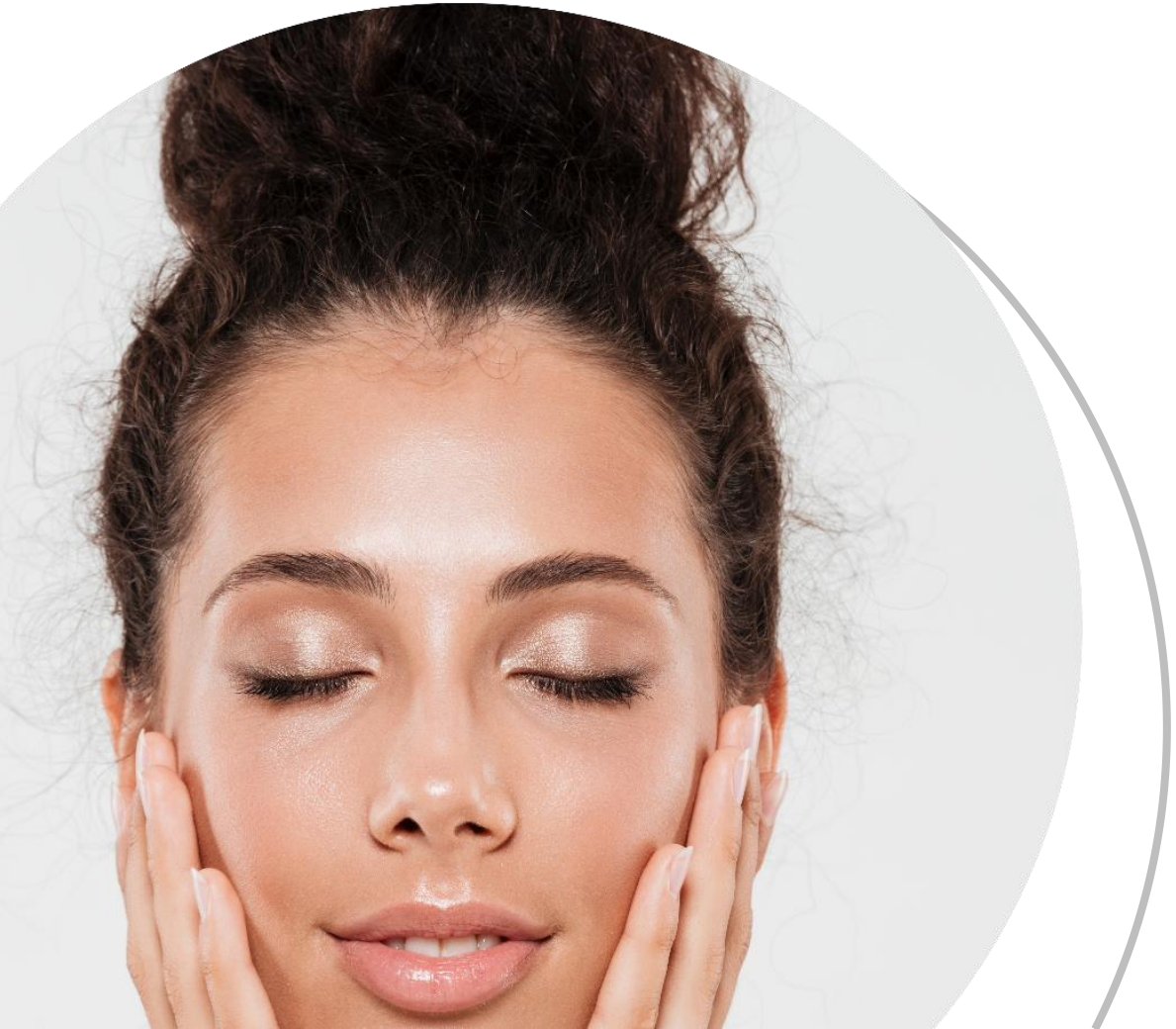
Clinical test - Self-assessment

PERCEIVED EFFECTIVENESS

Evaluation of the oiliness control and sensory attributes by users of dermocosmetics



Methodology:

Gel application with 5% Rice Silk, after 30 to 60 minutes of cleaning with neutral soap, in 33 volunteers (women and men), from 19 to 35 years old, phototypes II to IV, with mixed to oily skin. Evaluation of cosmetic perception was performed through a questionnaire, one hour after application

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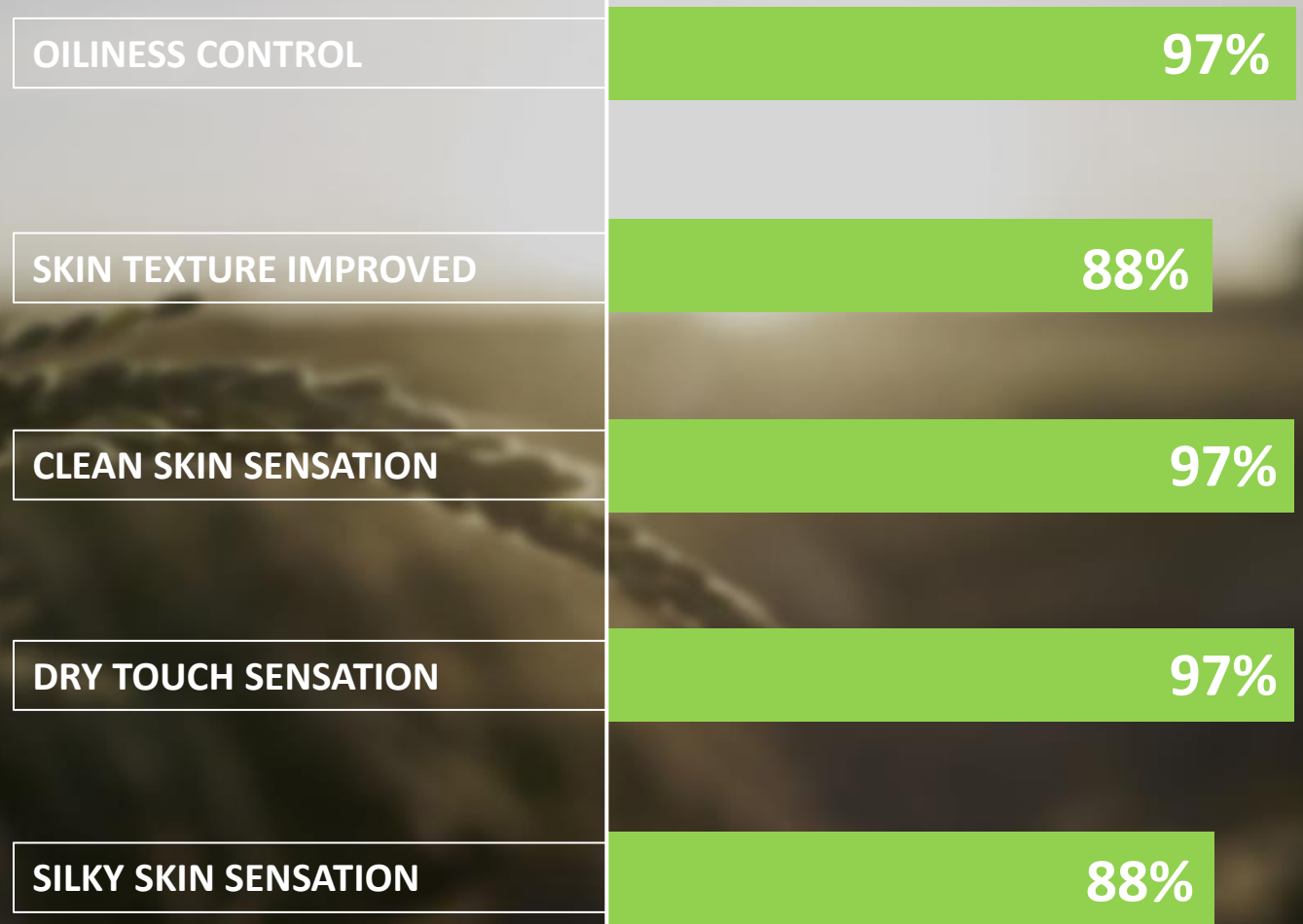
Results

Perceived Effectiveness

The volunteers noticed an oiliness control, an improvement in texture and a sensation of clean, silky skin with a dry touch!



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Nuxe

Sun Melting Cream SPF 50

This facial sunscreen SPF50 with Sun and Water Flowers, protects cells from ageing and helps you achieve a perfect tan. Ideal for fair skins and sensitive areas (face, neckline), this facial sunscreen high protection limits the appearance of dark spots.

Uploaded by: ghazalgh on 10/15/2018

Kiko

Unexpected Paradise Loose Powder

Loose powder for perfect summer makeup.

Uploaded by: liske on 07/27/2020

e.l.f.

ELF+ MATTE OIL-CONTROL PRIMER

This clay-infused primer helps control oil for a lasting mattified complexion. The lightweight formula helps blur the appearance of pores, while combating excess oils with Kaolin Clay and Tea Tree.

Uploaded by: apoorva517 on 09/15/2020

Sukin

Oil Balancing Mattifying Facial Moisturiser

Battling that 3pm shine? Our Oil Balancing Moisturiser will be your new holy grail, It is enriched with Rice Powder to mattify the face, and prevents an oily base throughout [more]

Uploaded by: cc618 on 09/04/2019

Rice Silk

PLANT SILICA

- Sustainable plant origin
- Alternative to synthetic silica
- High purity
- Homogenous particle size

PROPERTIES

- Improves the spreadability and silkiness of emulsions
- Can help in the stability of formulations with high oil content
- Promotes increased coverage (low g/cm² value)

BENEFITS

- Sensory agent that offers a smooth & silky feel
- High capacity to absorb excessive skin oiliness
- Delivers a matte effect, reducing the shiny skin aspect

- High oil absorption
- Thickener of oily systems
- Excellent anti-caking agent

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Rice Silk

INCI Name: *Oryza Sativa (Rice) Hull Powder*

Aspect (25°C): Soft-textured fine powder

Color: White to light beige

Particle size: 0.1-30 µm

Preservatives: No preservatives added

Indicated use: 0.5 to 5%

Applications: Moisturizing emulsions, Makeup, Sunscreens, Dry shampoos, Talc, Deodorants, Soaps. Also indicated for oily and acneic skin care.

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Rice Line

Sustainable Rice derivatives
Natural exfoliating and texturizing agents

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