



STUDIO TECNICO  
**APPIANI**

HYDROTHERMAL FOOD PROCESSING  
PLANT AND ENGINEERING SOLUTIONS





# COMPANY PROFILE

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Based in Carugate (Milan area), **STUDIO TECNICO APPIANI** is an Italian Company, entirely controlled by Mr. Salvatore Appiani, offering a worldwide turnkey solutions of rice hydrothermal processing plants and precooked cereals and pulses.

Different technologies are applied in manufacturing our systems, such as the **Vacuum Gariboldi Technology**. Our Company has been legally set up in 2000 and is made up of a team boasting a long-standing experience in this field.

STUDIO TECNICO APPIANI has been implementing its activity for over 15 years by signing commercial and technical cooperation agreements through its own offices located in strategic areas such as Asia (South Est Asia), Central and South America, China, Brazil and recently in Africa.







Efficiency and Flexibility



Consolidated Know-How



Customized Solution



Turn Key Projects



High Quality Manufacture

## KEY OF OUR SUCCESS

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The key of our success is the reliability in finding flexible and creative solutions. A careful study of the plant project, the planning and feasibility are of great importance, starting from project drafts we propose and find solutions to meet Customers' requirements.



# OUR MISSION

## STUDIO TECNICO APPIANI

always combined objectives with missions, with dedication, competence and professionalism, in order to propose optimal solution to each customer relying on us, by developing new production processes in case of new installation and by maximising the production and logistic cycles, in case of upgrading and renewal of the customer supply chain.

Our Company has always been careful to propose the most advanced technologies and suitable for increasingly demanding markets, committing itself to guarantee the quality of the product offered by diligently following each operation, from the study of the project to the planning and feasibility of each component, up to the constructive development of the same until on-site testing



# PARBOILED RICE



## PARBOILED RICE IS GELATINIZED BY PARTIAL BOILING

Parboiling means precooking rice without affecting its size and shape, to avoid over-imbibition and deformation of the grain.

Paddy is first hydrated, then heated to cook the rice and finally dried.

Due to its harder kernel structure, the parboiled paddy rice is more resistant to storage damage. For the same reason, it is more resistant to physical stress during the rice milling process, resulting in a much higher head rice yield.



- VB1 AND VB2 VITAMINS INCREASED
- BROKEN RICE RATE REDUCED
- MORE RICE AFTER COOKING
- SHELF LIFE INCREASED TO 2-3 YEARS

During the cooking step, the parboiled rice keeps its shape, even if largely over-cooked. This is interesting for the catering services. Vitamins and minerals are increased as they migrate from the bran to the kernel and are thus preserved during the polishing process.



# OUR MAIN ACTIVITIES

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The main activities of our Company are the design, manufacture, construction and installation of cereal hydrothermal processing plants (parboiled) .

- 1 **Design, construction assembly and start up of turn-key installations**
- 2 **Consultancy, designing and engineering**
- 3 **Transfer of Know-how and related assistance for local productions**
- 4 **Technical support for customer's project**
- 5 **Integrated project management supervision**

Consultancy, planning and technical assistance are offered to private and public enterprises as well as to international and international organizations, regardless of installations consignments

WHEREVER RICE IS GROWN AND PROCESSED, THE EXPERIENCE AND KNOW-HOW OF OUR TECHNICIANS IS AVAILABLE FOR THE BEST SOLUTION TO THE WIDEST RANGE OF PROBLEMS.



# OUR TECHNOLOGIES

## VBT

### VERTICAL BATCH TECHNOLOGY

- Temperature controlled Soaking tanks
- Steam Pressurized Cooker
- Cooker unloading in batch
- Multi column hot air dryer designed

## VCT

### VERTICAL CONTINUOUS TECHNOLOGY

- Temperature controlled soaking tanks
- Steam Pressurized Cooker
- Cooker unloading continuous
- Multi column hot air dryer

## GAT

### GARIBOLDI TECHNOLOGY

- Temperature controlled soaking tanks
- Pressurized soaking tank
- Steam Pressurized Cooker
- Drying with vacuum system (No dryer requested)
- Low energy consumption



All our technologies allow the Customer to reach a low break-downs percentage thanks to the sophisticated control system that can be operated as supervisor, by monitoring all the essential parameters during all the process steps.





## NEW **TECHNOLOGIES**

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1 INNOVATIVE PARBOILING SOLUTIONS

2 HORIZONTAL CONTINUOUS TECHNOLOGY (HCT)

3 PRECOOKED PULSES AND CEREALS

4 QUICK COOKING RICE (QCR)

5 RICE AND CEREALS CAKE MACHINES



# INNOVATIVE PARBOILING SOLUTION

**SUDIO TECNICO APPIANI**  
has signed a new strategic alliance with **CANAVERE INDUSTRY** for the manufacturing of an innovative parboiling processing plant **without prior soaking.**



## THIS UNIQUE PATENTED TECHNOLOGY OFFERS NUMEROUS ADVANTAGES:

- Low power consumption
- Process speed
- Very small quantities of water needed
- Compact Size and low weight of the production machine
- Great Industrial power
- Quick Cooking of the final product (8-10 minutes)
- Low absorption of water by the product
- Good smell and taste of the end product
- High elongation ratio of the product once cooked
- Environment friendly



With our innovative process, we do not soak the rice in order to avoid the huge water consumption and related costs. The steam treatment has a low duration time with less steam request. The drying step is reduced in terms of time and calories because the level of moisture during the process is relatively small.

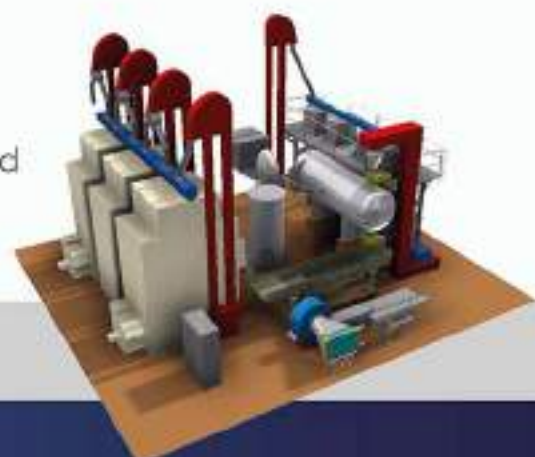




# HCT

## HORIZONTAL CONTINUOUS TECHNOLOGY

HCT is a new hydrothermal processing line designed to produce pre-cooked cereals. It can offer our Customer high production flexibility and allows managing each production step in a fully automated way for the highest production quality.



### QUALITY FEATURES:

- High flexibility to adapt to a variety of products
- Easy to manage in each process step
- Any shade of color from light to dark golden parboiled rice can be produced
- Fully automated safe operation
- Excellent homogeneous gelatinization throughout the grain resulting in uniform color
- Sanitation design avoids product and water traps that could cause fermentation
- Water is continuously circulated to ensure uniform soaking
- Optimal temperature control, individually for each tank
- Modular plant construction allows production capacity to adapt to market requirements

## PRE COOKING PULSE AND CEREALS

Why pre-cooking?  
To reduce preparation time in the households



### Pulses:

Lentils  
Peas  
Chick peas

### Grains :

Wheat  
Barley  
Spelt  
Sorghum  
Oat  
Quinoa

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# QCR QUICK COOKING RICE

In cooperation with some of the most strategic university institutes, we studied and we developed a new generation line fully automated to produce quick cooking rice (named QCR)

The final goal of our Company is to provide the final user with a product (using raw material available on the market) whose cooking time can vary from 4 to 8 minutes. Very different time, from the current cooking times of the cereals, safeguarding and maintaining a very high quality standards, ensuring nutritional values typical of parboiling rice.



## QCR PROCESS

Our soaking and pre-cooking method preserves the original grain texture to a large extent.

Our processes can be adjusted to instant, 5 minutes, 8 minutes or 10 minutes household preparation time.



ADDING AROMAS

Color , Spices  
Aroma like:  
Saffron , Tomato  
Mushroom  
Curry



# RICE AND CEREALS CAKE

Rice broken or full grain rice (MILLED OR BROWN) can be used for the production of puffed rice cakes.

Rice is increased in moisture, then fed to the mould of a rice cake machine. In the mould, the rice is compressed and rapidly heated, leading to the grains puffing. Due to the confined space in the mould, the grains stick to each other and thus shape a cake.

Various forms are available ,9 cm diameter round cakes ,or smaller round or triangular cakes.

## BEST PROPERTIES



“ The Rice Cakes have a neutral, slightly nutty taste. They offer superb opportunities to add any aroma or additional food product.

The taste can be soaked into the rice grains before puffing with liquid or powder additives: sweet as chocolate or vanilla, salty or spicy. Coating on the finished cake opens another wide range for creativity.

In the sweet sector coatings with, for example, sugar icing, white chocolate, dark and milk chocolate, yogurt and vanilla flavor, can be added.

In the salty sector can be offered coatings with, for example, spices, olive oil, spicy ingredients, rosemary etc.

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Flexibility Innovative Solutions  
Research and Development

QUALITY

Performances of  
our equipment

These are THE STRATEGIES allowing  
us to succeed all over the  
world for rice processing plants.

R&D

RESEARCH AND  
DEVELOPMENT

Pilot plant  
suitable for testing  
of hydrothermal and  
precooking rice (and other  
cereals) processing . The use of this  
laboratory allows us to offer always  
innovative solutions and to optimize  
in detail the quality and the  
performance of our plants  
by processing multiple  
varieties of product.

  
APPIANI



# QUALITY

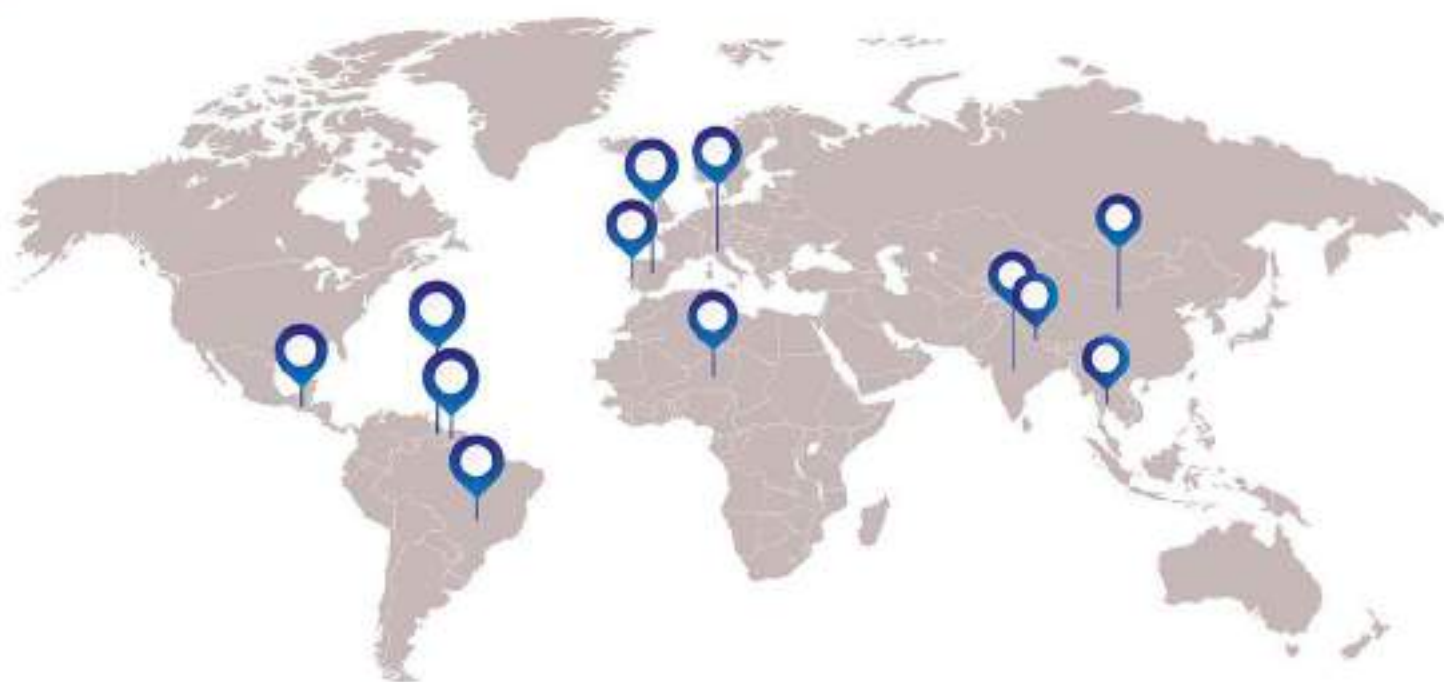
Our Company and all the outsourcing companies currently operate according to **ISO 9001 CERTIFICATION**.

Each production step, starting from the design to manufacturing and testing, is carried out following the most demanding international standards:

PED, ASME, EN, DIN, GOST-R in compliance with Customer requirements, and based the rules on the country of installations.



## WORLDWIDE REFERENCES



GUYANA

SPAIN

PORTUGAL

NIGERIA

THAILAND

INDIA

ITALY

SURINAME

BRAZIL

GUATEMALA

CHINA

BANGLADESH

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# GIVE VALUE

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