



# All About RICE

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*Rice is unique among the world's major crops because of its many uses and its capability to adapt to climatic, agricultural, and cultural conditions.*

**Rough rice** or paddy is the natural form of rice after harvest, with all the parts attached (Figure 1 shows different parts of rough rice).

**Brown or whole grain rice** is milled to have the hull (husk) removed, leaving the bran layer intact. It is 100% whole grain and contains bran and germ.

**White rice** is the brown rice that has been further milled to remove the bran layer and germ.

**Rice bran and rice husk** are different byproducts of rice milling. Rice husk is the hard outer covering of the rice grain that is removed during the first stage of milling (Hull/Husk).



Figure 1. Rough Rice

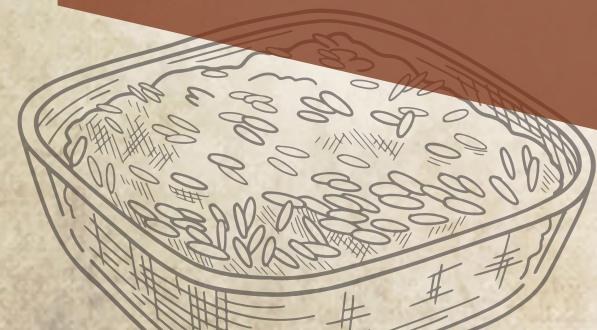


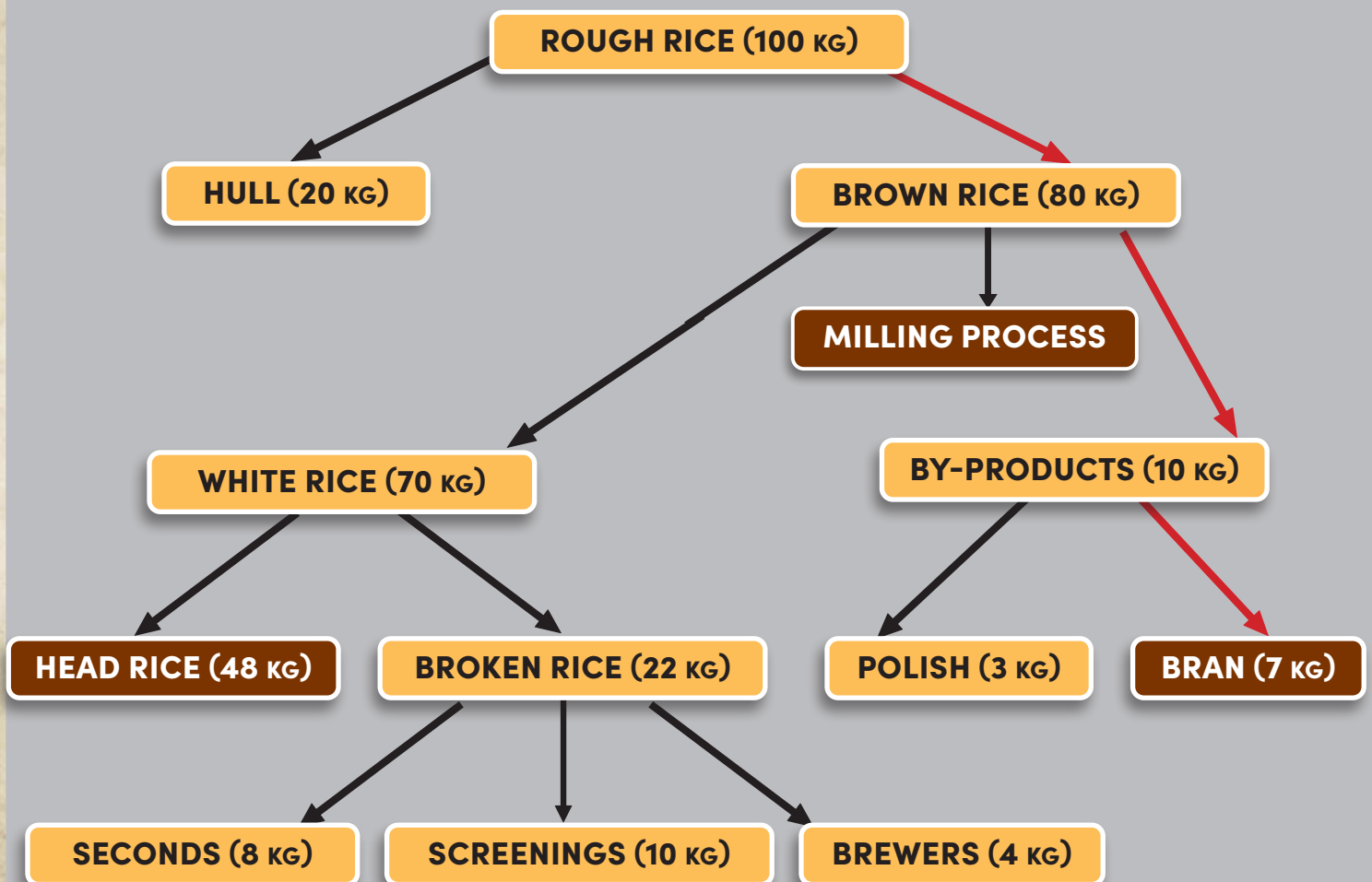
Figure 2



Rice bran is the seed coat of the rice kernel that is removed during the second stage of milling (Figure 2). Rice bran is nutritious and used for oil production, while rice husk has no nutritional value and is used as a biofuel.

Figure 3. Product Fractions from standard milling of rice (Henderson and Perry, 1976)

\* KG stand for Kilograms





## Different Types of Rice

There are three basic categories based on size:

- **Long grains** have a long and slender kernel, which, after cooking, are lighter, fluffier, and more separate than the medium and short. (Grown in LA, AR, FL, MS, MO and TX)
- **Medium-grain** rice has shorter and wider kernels, which, after cooking, are moist and tender, with a tendency to stick together. (Grown in AR, CA, LA, MO, TX)
- **Short grains** have a short, plump, almost round kernel, which, after cooking, is soft and stickier than other varieties with a slight springiness to the bite. (Grown in AR and CA)

## Specialty and Aromatic Rice

- **Jasmine Rice** is aromatic, long-grain rice.
- **U.S. Basmati Rice** is an aromatic long-grain rice with a distinctive aroma and flavor.
- **U.S. Arborio Rice** is a medium-grain rice with a characteristic white dot at the center of the grain and a higher protein content than other medium-grain varieties.
- **Red Aromatic Rice** is a long-grain variety that has a deep-colored, honey-red bran and is 100% whole grain.
- **Black Japonica** is an aromatic medium grain variety with a dark black bran that is 100% whole grain.
- **Sweet Rice**, also known as glutinous or sticky rice, is predominantly a short-grain variety that is chalky white with short and plump grains.



## Forms of Rice by Processing

- **Parboiled Rice:** Rough or paddy rice that has undergone a steam-pressure process before milling. This procedure gelatinizes the starch in the grain, ensuring a firmer, more separate grain when cooked.
- **Precooked Rice:** Also known as quick-cooking or instant rice, is white or brown rice that has been fully cooked and dried.
- **Retort Rice:** Retort or ready-to-heat rice is fully cooked rice that is packaged in pouches or cup containers and is ready to eat after brief heating.
- **Individually Quick Frozen (IQF) Rice:** Cooked rice grains are individually frozen before packaging to provide a free-flowing ingredient for use in frozen and prepared food products and for ease of use in foodservice operations.
- **Seasoned Rice Mixes:** Regular milled, parboiled, or precooked rice containing pre-measured seasonings for ease of preparing a variety of flavored finished products, such as Spanish rice, wild rice pilaf, yellow rice, and more.
- **Sweet Rice:** Also known as glutinous or sticky rice, is predominantly a short-grain variety that is chalky white with short and plump grains.

## Wild Rice

Wild rice is not technically rice but is a semi-aquatic grass native to North America that is 100% whole grain.

Wild rice grains are long, slender, and dark brown. Cooked grains have a cream-colored interior with a nutty flavor and chewy texture. Wild rice can be mixed with white or brown rice and used as stuffing, salad, etc.



### Resources:

- *Difference between Rice Bran and Rice Husk | Rice Bran vs. Rice Husk*
- *U.S. Rice Varieties*
- *Henderson, S.M. and R.L. Perry. 1976. Agricultural Process Engineering. 3rd. AVI publishing Co. Westport CT.*
- *Fatemeh Malekian, R.M. Rao, W. Priyawiwatkul, W.E. Marshall, M. Windhauser, and M. Ahmedna. 2000. Bulletin Number 870, LSU AgCenter.*



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