



The Rice Growing and Production Process



In Australia, rice breeders have developed varieties of rice to suit the environmental conditions in the Riverina. Australia specialises in growing medium grain varieties of rice that are grown throughout the world in temperate climates, like California, Egypt, Japan and parts of China.

Planning

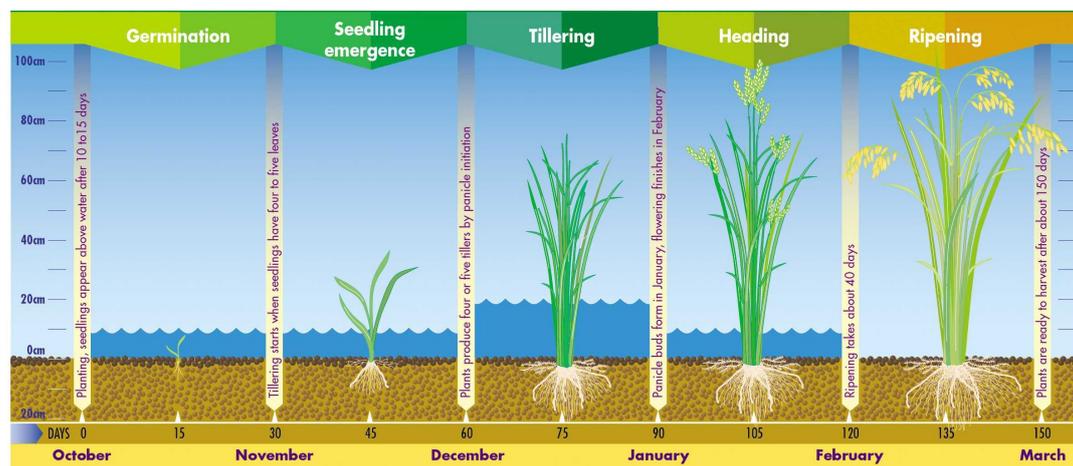
Prior to planting rice, rice growers must ensure their farm meets the strict environmental guidelines for rice production. Once approved, many farmers design a whole farm plan to assist in managing the efficient use of natural resources and to determine the most suitable rotations. Many rice growers have already invested in designing whole farm plans.

Most farms use laser-guided land levelling techniques to prepare the ground for production. Laser levelling is one of the most effective and widely adopted techniques to improve water management. Farmers have precise control over the flow of water on and off the paddock. Such measurement strategies have contributed to a 60% improvement in water use efficiency. Most of the rice is sown by aircraft in Australia. Experienced agricultural pilots use satellite guidance technology to broadcast seed accurately over the fields.

Growing

Rice can only be grown on soils that are deemed suitable by the irrigation corporations. Rice growing is concentrated in the Murrumbidgee and Murray valleys of southern New South Wales, with small areas of rice grown in north-eastern Victoria.

It is concentrated in this area due to large areas of flat land, suitable clay-based soils,





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the availability of water, and the development of storage and milling infrastructure in or near the regional towns.

Rice seeds are planted in September. Through September until February, the rice plant grows a main stem and a number of tillers. Each rice plant will produce four or five tillers. Every tiller grows a flowering head or panicle. The panicle produces the rice grains. Rice crops are grown in 5 – 25cm of water depending on growing conditions.

Harvesting

As the grain begins to mature, the farmers 'lock up' the water on the bays. This means no water leaves the paddock, it is fully utilised by the rice plant. The soil then dries out in time for harvest to commence.

Farmers use large, conventional grain harvesters to mechanically harvest rice in autumn. Once harvested, the rice is commonly named paddy rice. This is the name given to unmilled rice with its protective husk in place



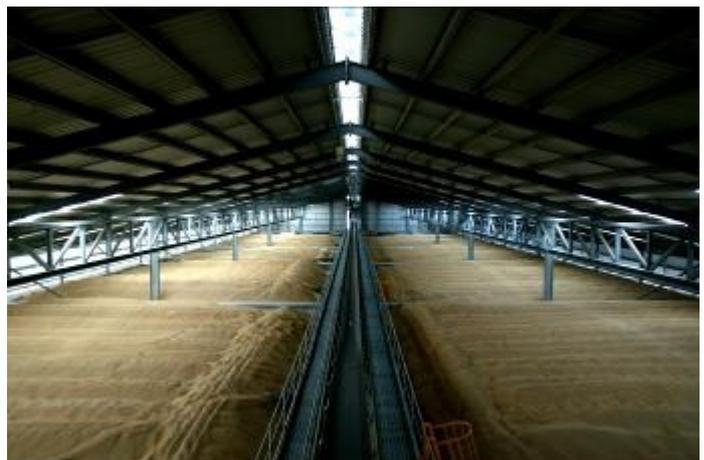
Storing Rice

Once harvested, a truck transports it to one of the industry's paddy storage facilities, where segregation occurs according to variety. Rice storage bins are fitted

with computer-linked sensors that monitor grain storage conditions and keep the rice at a suitable temperature and moisture level.

Australian rice mills use the most advanced equipment and are some of the largest and most efficient in the world.

When the storage manager receives orders and shipping instructions, the rice is trucked to one of three industry mills that are strategically located throughout the region. The industry also has three stockfeed manufacturing plants and 21 rice receipt depots.



Milling Rice

Step One – Removal of hard protective husk

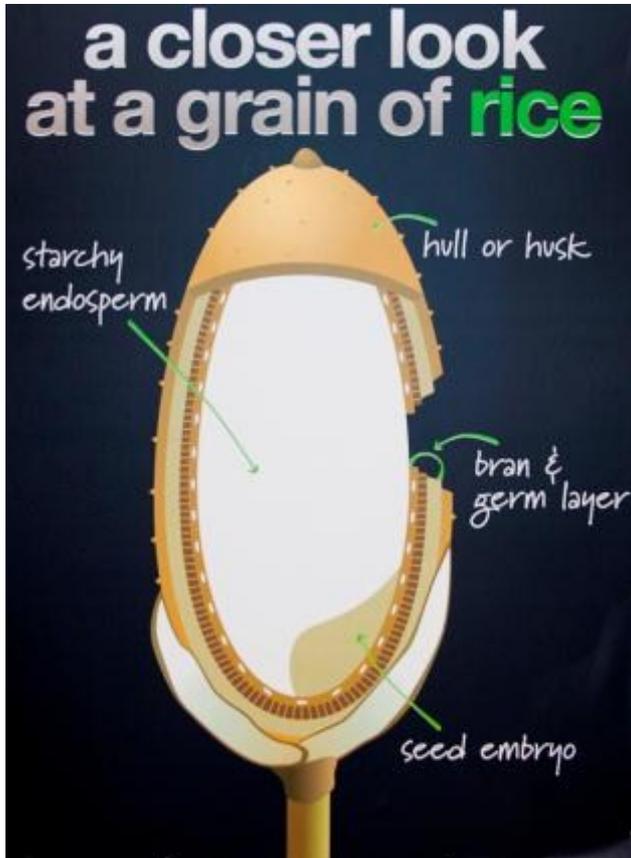
The rice husk is the protective layer surrounding the grain. Once removed, the rice grain is packaged as brown rice. Brown rice is 'healthy' because it still contains the rice germ and outer bran layers – important for healthy body functions.

Step Two – Removal of the germ and brown layers

Gentle milling removes the germ and bran layers from the grain to expose a white starch centre. The polished white starch centre is what we know as white rice.



The Rice Growing and Production Process



Rice husks

The rice husk is the hard, protective shell on the grain. The removal of the rice husk is the first stage of rice milling. Rice husks are the main by-product of rice production. For every one million tonnes of paddy rice harvested, about 200 000 tonnes of rice husk is produced.

Rice husks are used in 3 main ways.

raw—animal bedding, growing seedlings, improving mulch for gardens.

burnt—the resulting ash is valuable for many industries, including steel making, gardening and building.

ground and processed—stock feed, potting mixes and pet litter.

Rice by-products

By-products from the growing and processing of rice create many valuable new products. Rice husks, rice stubble, rice bran, broken rice and rice straw are used as common ingredients in horticultural, livestock, industrial, household, building and food products.

