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Defeating Hunger with Hybrid Rice

Do you know that people used to eat a kind of white clay called Guan Yintu（观音土） in times of famine, even though they knew they would die of it? Have you ever had the grisly experience of finding bodies of people who have starved to death littering the countryside?

Peace, happiness and well-stocked granaries- we should take none of them for granted.

The first winner of the State Preeminent Science and Technology Award and academician of the Chinese Academy of Engineering Yuan Longping（袁隆平） is also known as the “World's Father of Hybrid Rice.” Each day, Yuan, who is nearly 90 years old, gets on his old motorbike to inspect his experimental fields twice: at nine o'clock in the morning and at three o'clock in the afternoon, from the moment the seed is planted to the time of its harvest. His wife says that he looks at his plants in the fields in the way other people look at their beloved sons. Sometimes he is so engrossed that he forgets to go home for his meals.

What Yuan Longping looks at is hybrid rice. Hybridization means that two rice varieties that have certain differences in inheritance and good complementary characteristics are selected to produce hybrid varieties with heterosis, so as to improve the yield and quality of rice. Yuan Longping is the leading scientist in the area of hybrid rice in China. He succeeded in developing hybrid rice varieties with “three-line methods” and “two-line methods,” and super-hybrid rice I and II. He also proposed the implementation of the “Bumper Harvest Project of Growing on Three Mu and Yielding That of Four." In September 2017 Yuan Longping declared that he had mastered a new technique to remove cadmium, a harmful heavy metal, from rice. In October that year crop yield measuring was carried out at the experimental base for the “Seawater Rice" Project led by Yuan Longping. As a result, it is now possible that the 280 million mu (One mu equals 0.667 hectares) of saline-alkali land in China will in the future be transformed into good farm-land.

What do these achievements of Yuan Longping's mean? They mean that China can feed 20% of the world's population with 7% of the world's farmland. China has solved the issues of providing enough food for its 1.3 billion population and ensuring domestic food security. China's hybrid rice is promoted in over 30 countries and regions world-wide, planted on a total area of 1.5 million hectares. Hybrid rice has made an outstanding contribution to hunger reduction all over the world.

But the research on hybrid rice was never an easy undertaking. In October 2014 large-area crop losses and complete failure occurred in fields planted with the “Liangyou 0293” rice variety in Bengbu and Anqing, Anhui Province. The crops in over 10,000 mu of fields were affected. There were continual voices expressing doubt about Yuan Long-ping and his hybrid rice, and the research on hybrid rice went through a difficult period. Nevertheless, Yuan Longping soldiered on. He went to the affected areas personally, and carried out investigations with experts from Anhui Academy of Agricultural Sciences and Anhui Agricultural University. In the end, it was found that the disaster was caused by an abnormal rice blight. The variety had strong lodging resistance but it

had the weakness of high susceptibility to rice blight. Anhui was not an area prone to rice blight in the past. But that year there was a rare spell of low temperature and rainy weather. People did not take proper measures to prevent the rice disease, which resulted in its spread.

Yuan Longping returned to his office, and sat there musing for a long time. Although he had found the cause of the crop failures, he also realized that the local farmers had suffered irretrievable losses that year. He became more conscious about his responsibility. Not dwelling on self-reproach and refusing to give up easily, he started a new and more rigorous round of research on hybrid rice. During that period, when food security was not completely guaranteed, the “yield” was the most important target. As the demand for food supplies had been basically met in China, the targets of “high quality and multi-resistance” became more and more important. After many years of experiment and research, Yuan Longping finally bred a batch of super-rice varieties characterized by high yield, good quality, high resistance and wide adaptability.

Besides the disaster resistance of the rice crops, people also raised their requirements for rice quality. Once, Yuan Longping heard that many people queued up to buy rice at a shop in Shanghai which had put up a notice saying, “We Do Not Sell Hunan Rice.” People believed that the rice from Hunan was mostly hybrid rice, which did not suit their taste.

This incident shocked Yuan Longping. After the improved yield and disaster resistance, the market posed new challenges to him and his hybrid rice. Once again, he went to the fields to find ways to improve the quality and taste of rice. After many days of hard work in the fields, he found more free combinations of his two-line hybrid rice. There were richer inheritance resources to be used so that the probability of selecting good combinations was greatly increased. The quality of super-rice became excellent.

One day Yuan Longping saw a farmer who looked to be of the same age as himself harvesting rice with his grandson. The rice variety was “Y Liangyou 1.” The old man told Yuan that this rice was good, but “it is too costly to grow.” The scientist was surprised. The seeds of the rice were given to agro-technical stations free of charge as part of demonstration projects. Did anyone charge the peasants for the seeds or what? The old man replied, “No,because the rice tastes so good the growers have one or two more bowls of rice for themselves at each meal, so it seems that we cannot make much money since we don't want to sell a lot of it to the market.” Yuan Longping laughed after hearing his words.

At sunrise Yuan Longping puts on his straw hat and goes to the fields on his motorbike. He is a true cultivator who plants his wisdom and harvests the dream of helping all people escape hunger.

The Moral of This Story

Famed as the father of hybrid rice and pioneer of modern agriculture, Yuan Longping studies and explores on the frontiers of agricultural science. He brings green hope and a golden harvest to mankind. Because of his achievements, the Chinese people have solved the issue of food supply as they embark on the journey of national rejuvenation.

1. 什么是杂交水稻？What is Hybrid Rice? (10)

Answer:

Hybrid rice is a result of crossbreeding two different rice varieties, selected for complementary traits, to create offspring with improved yield, quality, and resistance. Developed by Yuan Longping, the "Father of Hybrid Rice," this agricultural innovation has played a crucial role in addressing food security challenges by enhancing productivity and adaptability in rice cultivation. Yuan Longping, the leading scientist in the area of hybrid rice in China, succeeded in developing hybrid rice varieties with "three-line methods" and "two-line methods," and super-hybrid rice I and I I

2. 袁隆平是谁？Who is Yuan Longpin? (10)

Answer:

Yuan Longping, often referred to as the "Father of Hybrid Rice," is a Chinese agricultural scientist and the first recipient of the State Preeminent Science and Technology Award. Renowned for his pioneering work in developing hybrid rice varieties, Yuan has significantly increased global food production, particularly in China. His innovations, including the "Bumper Harvest Project" and techniques to remove harmful metals from rice, have made him a key figure in addressing food security challenges.

3. 袁隆平的成就意味着什么？What do these achievements of Yuan Longping's mean (10)

Answer:

Yuan Longping's achievements signify a monumental breakthrough in agriculture, enabling China to sustainably feed 20% of the world's population with only 7% of global farmland. Through his development of hybrid rice varieties and innovative projects, such as removing cadmium from rice and transforming saline-alkali land into arable fields, Yuan has not only ensured domestic food security but has also made substantial contributions to global hunger reduction. His impact extends beyond scientific advancements, embodying a transformative force in securing the well-being of millions worldwide.

4. 判断对错（30 分）True or False (30 points) Yuan Longping (t

（False）袁隆平的杂交水稻一直很受欢迎。Yuan Longpin’s Hybrid Rice is always popular.

（True）对袁隆平来说，杂交水稻就像自己的孩子一样。For Yuan Longpin, the Hybrid Rice just likes his son.

（False）袁隆平被称为现代的“神农”。Yuan Longpin was called Agriculture God in the modern time.

5. 请解释下列词语，并标注拼音。Please translate these words and mark Pinyin.（40 分）

饥饿: Jī é(hunger)

杂交水稻: zá jiāo shuǐ dào (Hybrid rice)

产量: chǎn liàng (yield)

耕耘: Gēng yún (to plow and hoe ;to work hard)