

made evaluations for resistance to major diseases and insects, cold, drought, and salinity tolerances of the large number of germplasms as well as the grain quality. A group of germplasms with outstanding characters have played effective functions in rice production and breeding program, and numerous promising new varieties have been developed. In the area of exploitation and utilization of germplasms with special characters, we have discovered, bred and selected or screened out the photoperiod sensitive and temperature sensitive genic male sterile line, wide compatibility varieties

and three-line materials for combining high-yielding hybrid rice.

Research has been focused on origin, evolution of the Chinese cultivation rice species, types and cataloguing of cultivated rice genome types of wild rice and cultivated rice local varieties and the analysis of lipase isozyme, etc. In the future, exploitation, utilization and evaluation of useful germplasms, gene location and transfer of outstanding characters should be further intensified so as to provide scientific basis for development of super-high-yielding varieties.

Research outline on rice genetics in China

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In 1928, studies on the inheritance and evolution of wild rice conducted by Prof TING Yin and the linkage relationship between genes controlling rice wax endosperm and glume top colour by Prof ZHAO Lianfang were reported. Since then, a large number of researches on rice genetics have been carried out in China, which concerned the inheritance of morphological and physiological traits; the identification of the chromosome mutants in number and structure; the analysis of genetic models of qualitative traits; and the heritability estimates of quantitative traits as well as the gene sequence in rice bioengineering, etc. All researches have made a great contribution to rice genetics. This article introduced all these aspects based on the works by

the majority of researchers in comparison with their new status in the world with the consideration of the rice breeding practices. It is far worth noting the novel advances in the genetic analysis of dwarf germplasm, the amylose content of rice grain and the resistance to white-backed planthopper, etc. Further more, there are an original review on the inheritance of hybrid rice such as the characters performance, the analysis of wide-compatibility gene and the inheritance of photosensitive genic male sterile rice, etc., and a brief introduction about rice biotechnology, which was not well described in the earlier books on the rice genetics and much attained by both rice geneticists and breeders in recent years.

NEWS

A First Class Award of the Ministry of Agriculture

Study on the behaviour and mechanism acoustic communication (AC) in rice planthoppers (RPHs) have been conducted at CNRRI and Hangzhou Applied Acoustic Research Institute since 1986. Researchers have developed techniques for monitoring and playing back the acoustic signal (AS) of RPHs, and have made important breakthroughs in several aspects of AC.

The study proved that the stridulating organ is on both sides of the juncture of pterothorax and abdomen of adult RPHs, and the AS were produced by convolution homomorphic system. On the acoustic analysis of ASs, not only was the waveform of ASs analysed, but also the spectrum of ASs was studied more

in detail than that of previous study on this subject. Based on the results from acoustic analysis of AS, a computer system for distinguishing three species of RPHs(*Nilaparvata lugens*, *Sogatella furcitera*, and *laodelphax striatellus*) was built. Furthermore, the study pioneered the research on the simulation of AS. Having made an electron simulator system, it developed the analogues of the female AS of *N. lugens* successfully, which can be responded by the male of one. Moreover, it was the first to discover the auto-touched hairs on the dorsal of trochanter and suggest the receptive mechanism of AS in the world.

In 1993, the study won the First Class Award of Scientific and Technical Progress of the Ministry of Agriculture.

Reported by ZHANG Zhitao and FU Qiang, CNRRI

New technique for identifying varieties resistance to rice blast

After 8 yrs lab experiments and field tests, an advanced technique for identifying varieties resistance to rice blast was developed by a research group in Plant Protection Institute, Zhejiang Academy of Agricultural Sciences. With this technique, the inoculum was prepared on a maize-rice-straw-agar media which was suitable for sporulation of most rice blast pathogen isolates. To avoid possible virulence variation during the vegetative growth, the conidia were harvested and preserved for later different sets of resistance evaluation tests. A simple and precise new method—smear inoculation was used for infection. The experiment results suggested that the rice blast resistance identification could be more reliable if identification tests were carried out in seedling and leaf blast stage in dry nursery with naturally attacked rice tissues as infection sources, and for panicle blast resistance with natural infection during early rice growing seasons.

Reported by ZHU Peiliang, CNRRI

From Zhejiang Sci and Tec Newspaper, Dec 15, 1993

Zhe 9248 — a new scented rice line comes out in Zhejiang

This novel rice line is developed recently by a research team led by Associate Prof QIU Baiqin, Crop Breeding and Cultivation Institute, Zhejiang Academy of Agricultural Sciences. Zhe 9248 is of high resistance to blast, early mature and of higher yield. Being soft, smooth, and glossy, the cooked rice of "Zhe 9248" has excellent eating quality. The kernels of "Zhe 9248" are hardened to such a degree that they could be capable of preventing from cracking during processing. It is anticipated that in the forthcoming time, "Zhe 9248" can become an early rice line of bestpromise.

Reported by WANG Kaizhi, CNRRI

From Zhejiang daily, Jul 14, 1993

Yuanyou 1R—a new rice germplasm material

A new rice germplasm material Yuanyou 1R was developed in Changsha Institute of Agricultural Modernization, Academia Sinica, Hunan Province, China. New hybrid rice combinations could be developed by utilizing this new germplasm material. In this way, a new hybrid rice Changyou 88 has been developed by Prof LI Damo and his colleagues of this Institute. Changyou 88 shows very strong heterosis good grain quality. It also gives high yield even in gley soil, with an average yield of 8.25–9 t / ha, at a seed-setting rate of 80% or so. So far, Changyou 88 has covered a growth area of more than 2,000 ha in southern China.