STERILITY IN RICE HYBRIDS

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There are hundreds of locally-adapted rice varieties in the principal rice-producing countries of the world. The numerous varieties of this crop probably came into existence in three ways, viz., by natural crossing, by mutation, and by the selection and preservation of desirable forms by man. Some rice varieties yield and mill well, whereas others are of low yielding capacity and of poor quality.

CYTOLOGICAL STUDIES

Kuwada (1) counted the chromosomes in pollen mother-cells of common (Oryza utilisima Kcke.) and glutinous (Oryza glutinosa, Lour.) rice varieties and found that the haploid number is 12 in both groups.

Nakatomi (2) made a cytological study of the chromosome number in the pollen mother-cells of 21 races and mutations of foreign and domestic rices and his results also show that the haploid number is 12. The size of the chromosomes varied in different varieties. Rau (3), in a cytological study of the root-tips of two domestic (South India) rice varieties and one variety from Madras, found that the somatic chromosome number is 24. He observed that there were three small, four intermediate, and five large chromosome pairs in the cells of the root-tips. The large chromosomes were about twice as long as the short ones.

These cytological studies of rice indicate that probably all cultivated varieties have 24 chromosomes in the somatic cells.

STERILITY IN RICE CROSSES

During the past two decades many papers have been published dealing with the mode of inheritance of various characters in rice crosses. The genetic studies often are by-products of general rice improvement programs in which hybridization is used.

In the rather extensive studies on rice hybridization, which have been conducted in recent years in the various rice-producing countries only one paper is known to the writer in which a marked degree of sterility in the hybrids is reported.

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3 Reference by number is to "Literature Cited," p. 867.