TECHNIC OF RICE HYBRIDIZATION IN CALIFORNIA

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RICE HYBRIDIZATION IN OTHER COUNTRIES

The earliest record found by the writer regarding the artificial hybridization of rice dates back to 1901. In that year Hoshino (2),3 of Japan, records having made two crosses of glutinous x common rice, one in the greenhouse of the College Botanical Garden at Sapporo, Japan, in May, 1901, and the other in a paddy field in August of the same year. He obtained 6 hybrid seeds in the greenhouse and 12 in the field. In making the crosses the glumes of the female parent (glutinous rice) were clipped off prior to emasculation and, therefore, the hybrid seeds were exposed to the air. It was not possible to tell by observation whether the hybrid seed possessed a glutinous or a common endosperm. Therefore, some of the hybrid seeds were cut and soaked in a solution of iodine. All the hybrid seeds turned violet in color as common rice does, whereas self-fertilized female glutinous seeds changed to a brown color. "It showed perfectly the phenomena of zenia in the rice endosperm." This was the first demonstration of zenia in the rice endosperm.

Koch (4) states that in 1907 Van der Stok started hybridization experiments with rice in Java. He crossed Karang Serang, an early-maturing variety of good quality, and Skrivimankotti, a high-yielding variety of poorer quality. Koch states that the best method of hybridization is as follows: Cut off the tops of the glumes with scissors a few hours before flowering (blooming), then remove the exposed anthers with a fine needle and pollinate a few hours after with pollen from the male parent. The panicles are then enclosed in a gauze envelope, which is protected at night and during rain by a little cover of dry leaves. By this method Koch, in one case, obtained 43.3% of hybrid seed. However, at times no hybrid seeds were obtained, due apparently to nonviable pollen.

In India, Hector at Dacca and Parnell at Coimbatore began hybridization work with rice about 1913.

As late as 1913 Farneti (1), of Italy, claimed that rice flowers never opened before, during, or after dehiscence of the anthers.

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2Senior Agronomist and Superintendent of the Biggs Rice Field Station, Biggs, Calif.
3Reference by number is to "Literature Cited," p. 40.