Disease Resistance (81 ~ 83)

H-81 Disease resistance induced by silicate(Si) treatment against blast disease in rice. B. R. Kim[1], E. W. Park[2], J. H. Roh[1], I. S. Oh[1], S. S. Han[1]. [1]Div. of Crop Environ. & Bio. Tech. National Institute of Crop Science, RDA, Suwon, 441-857, Korea. [2]School of Agricultural Biotechnology, Seoul National Univ., Seoul 151-921, Korea.

Two rice cultivars, Jinmi and Suwon345, grown under hydroponic culture system with a nutrient solution containing 0 and 150ppm of sodium silicate were inoculated, respectively, with two rice-blast compatible isolates, 02-319 (KJ-105a) and 93-456 (KI-409), at three growing stages of rice plants, 5~6 leaf, maximum tillering, and heading stages. The control plants of both cultivars inoculated with either of the blast isolates at the 5-6 leaf stage resulted in 36-39% of DLA measured 7 days after inoculation, whereas those grown in the presence of Si(150ppm) had only 0.64-1.90% of DLA indicating its strong resistance to the pathogens. At the maximum tillering and heading stages, the plant of both cultivars grown with and without the Si and inoculated with either of the isolates resulted in 0.1-1.17% and 16.1-67.7% of DLA, respectively. The Si also affected the incidence of panicle and neck blast diseases. Thirty days after inoculation with the pathogen at the heading stage of control plants, the incidences of panicle and neck blast diseases were 16.1-67.7% and 6.5-45.8%, respectively, whereas those in silicated plants were 0-13.5% and 0-10.8%, respectively. In the mechanism of Si-induced rice resistance to blast disease, it has been investigated that the silicated leaves form a physical barrier of somre sort in leaf surface that protect host cells by preventing the invasion of blast fungus. Results of this study suggest that rice blast resistance induced by silicate has an effect on the whole rice plant parts throughout the growing stages.

H-82 Epidemiological effect of gene deployment on Bacterial leaf blight of rice. Min-seon Choi, Hyungjoon Park, Joo-Hee Lee, Hyun-Kyung Kim, Seungdon Lee, Dongsoo Ra, and Sunggi Heu. Division of plant pathology, NIAST, RDA, Suwon Korea

Bacterial leaf bligth of rice (*Oryza sativa* L.), caused by *Xanthomonas oryzae* pv. *oryzae*, is a serious disease of global importance. No effective and economical chemical control methods are available. The major means of management is though the use of resistant cultivars. Isolates collected from various localities in Korea were examined for their virulence to 20 different monogenic lines of rice. The reaction of isolates to different monogeic liens were different dramatically depends on the year and place