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Genomics and Genetic Engineering of Rice for Tolerance to Ozone and Anoxia

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Abstract

Rice is one of the dominant staple foods of Southeast Asia; its production has been affected by a number of abiotic and biotic factors. Oxides of nitrogen, carbon monoxide and volatile organic compounds produced from vehicles and industries interact with ultraviolet light and form tropospheric ozone. Excessive ozone in the troposphere and anoxia caused by submergence of plants are two important abiotic stresses causing extensive damage to the rice crop. The physiology and growth of rice is extremely susceptible to ozone stress, which can cause reduction in productivity of the crop. Therefore, it is a call of the time to address these abiotic stresses to safeguard the rice production system. Recent