

Preliminary study on bacterial leaf blight resistance of different *Xa* gene in Hualien¹

Chia-Hsing Huang² Wen-Chin Wu³ Cheng Zu Pan⁴

Abstract

Bacterial leaf blight is one of the main diseases of rice cultivation in Taiwan. It caused serious damage to yield and quality of rice. After discovery of the resistance gene *Xa*, breeders can use marker-assisted breeding to develop the rice varieties resistant to bacterial leaf blight. In this study, the *xa5* and *Xa21* genes showed the highly resistance to three *Xanthomonas oryzae* pv. *oryzae* (*Xoo*) strains. The average length of lesion was shorter than 3 cm. The rice varieties containing two *Xa* genes showed the resistance to three *Xoo* strains except IRBB51. The lesion length of the rice varieties with more than three *Xa* genes were all shorter than 2 cm and showed resistance or highly resistance to three *Xoo* strains. Our results demonstrated that those rice varieties had two *Xa* genes plu *xa5* or *Xa21* showed highly resistance in XN12, XO12 and XF89b. The results provided the suggestioin in the selection of parents and *Xa* gene stacking strategy for the resistance breeding against bacterial leaf blight in the eastern Taiwan.

Key word: genotype, resistance breeding, marker assisted breeding

1. Research article No.256 of Hualien District Agricultural Research and Extension Station.
2. Assistant researcher, Division of Crop Improvement, Hualien DARES.
3. Contract-based assistant, Division of Crop Improvement, Hualien DARES.
4. Associate researcher, Division of Crop Improvement, Hualien DARES.