

Inheritance of resistance to Sclerotinia disease spread in oilseed rape

Sheng-yi Liu^{1*}, Bi-wen Zhou¹, Jian-kun Zhang¹, Ze-yong Xu¹ and Li-yuan He²

¹Oil Crops Research Institute, Chinese Academy of Agricultural Sciences, Xudong Second Road No2, Wuhan 430062, China

²Institute of Plant Protection, Chinese Academy of Agricultural Sciences, Beijing 100094

Experiments with mycelial inoculation of detached leaves showed that lesion size increased with time in form of Logistic curve. Lesion spread of susceptible varieties was significantly faster than that of resistant ones. Analysis of conditional variance was first applied to genetic analysis of resistance to disease spread and the results showed that the existing variation of resistance between varieties was controlled by heritable factors measured as conditional additional and conditional dominant variances. There were different conditional additional effects detected between resistance and susceptible varieties and different conditional dominant effects between crosses. This analysis method is more sensitivity to detect heritability, for example, heritability increased by 40 percent after roots treated with OA when compared with that estimated by the normal variance analysis. It could reveal dynamic change of gene effects during disease development.