

SCREENING FOR RESISTANCE TO SEPTORIA TRITICI BLOTCH, THE MAJOR WHEAT DISEASE IN WESTERN EUROPE

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Septoria tritici leaf blotch (STB) caused by *Mycosphaarella graminicola* is one of the most devastating wheat diseases in Europe and it is estimated that approximately 600 M€ is annually spent on the chemical control of this disease. France is one of the main wheat producers (6% of the total global production) and STB is the primary constraint. One of the most efficient and environmentally friendly ways to control STB is to breed resistant cultivars and in recent years 15 major resistance genes (*Stb1-Stb15*) were identified. We evaluated 104 cultivars, including a 13 cultivar as differential set representing 15 mapped *Stb* genes and cv. Taichung 29 as susceptible check, with 54 *M. graminicola* isolates in three independent replicated trials using first leaf pycnidia coverage at 21 days after inoculation as the prime disease parameter. None of the *Stb* genes is effective to all *M. graminicola* isolates. However CS Synthetic (6x), carrying *Stb5*, is the most effective gene against French isolates. Moreover, TE9111, carrying *Stb11* and *Stb7*, and Arina, which has *Stb15* and *Stb6* are the most resistance lines and cultivar of the differential set, after examination with 18 *M. graminicola* bread wheat isolates that represent a global range of pathogenicity. Interestingly, only one newly developed synthetic hexaploid show specific resistant to all highly virulent French isolates as well as the aforementioned 'global' suite of *M. graminicola* isolates that compromise the majority of the available *Stb* genes. Exploitation of this *M. graminicola* collection representing a broad range of virulence factors on wheat germplasm and *Stb* differential cultivars helped us to identify and characterize potentially new sources of resistance to STB. These will be used in mapping and QTL studies in several DH and RIL populations for marker development to support rapid and efficient deployment in practical breeding programs.