

PROGRESS OF FUSARIUM HEAD BLIGHT IN THE WHEAT CULTIVARS BRS GUAMIRIM AND FRONTANA

Lima MIPM, Nicolau M

Embrapa Wheat, Passo Fundo, RS, Brazil

maria-imaculada.lima@embrapa.br

Fusarium Head Blight (FHB), caused by *Gibberella zeae* (*Fusarium graminearum*), affects wheat spikes, reduces yield, quality and compromises human and animal health due to mycotoxins and the control is a world challenge. FHB resistance was divided into five types: (i) resistance to initial infection; (ii) resistance to colonization; (iii) resistance expressed in the grain; (iv) resistance of mycotoxins; (v) tolerance. The objective of this study was to evaluate the disease progress, occurring naturally in field conditions of wheat cultivars with different types of resistances. The experiment was conducted on the base of a randomized complete block design with 10 wheat cultivars and three replications, cultivated in a 1.4 m x 6 space, with seven rows and 0.20 space between them. All cultivars were sown on 16 July 2008 and the progress of FHB was measured for two cultivars with different types of resistance: BRS Guamirim (type II) and Frontana (type I). The diseases control occurred until booting stage. Wheat grains with mature perithecia of *Gibberella zeae* was spread among replicates, on the soil surface, at the beginning of silking. Fifteen spikes with only one spikelet with FHB symptoms were identified, on the same day, totaling 45 spikes per cultivar and the number of spikelets, per spike, was quantified. Six assessment of the number of affected spikelets occurred periodically until the stage of grain soft dough. The weather data was obtained from Embrapa Trigo meteorological station (Lat: 28° 15' 46" S, Lon: 52° 24' 24" W), the average rainfall and the daily precipitation was used to determine the number of favorable periods for FHB. Regarding FHB spike progress, the adjusted mixed model showed that the intercept coefficient for the initial stages was lower in Frontana (0.096) than in BRS Guamirim (0.257). The inclination coefficient was lower in BRS Guamirim (1.80) and higher in Frontana (2.77) what means that the progress is higher in Fontana than in BRS Guamirim and increased over time. The average severity was 31.76% in BRS Guamirim and 81.87% in Frontana. The environment of rainfall during FHB progression assessment from October to November was favorable to FHB, in 2008. In October, there were 16 days with precipitation > 0.5 mm and the total rainfall was 351.7 mm, exceeding the normal average that is 167.1 mm. Different types of genetic resistance among cultivars were, probably, the main responsible factor for the double severity in Frontana.

Keywords: *Gibberella zeae*; scab; resistance