

POSTERS

**UNRAVELING FUSARIUM CROWN ROT
IN SOUTHERN ITALY**

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Fusarium Crown Rot (FCR) is a significant wheat disease worldwide, primarily caused by a complex of Fusarium species. The most important are the mycotoxigenic F. culmorum and F. pseudograminearum, known for producing harmful secondary metabolites such as type B trichothecenes and zearalenone. Fusarium Crown Rot is often underestimated due to symptom overlap with other fungal diseases. Moreover, the distribution of causal species is dynamic, influenced by environmental factors. The ongoing climate crisis is reshaping the profile of Fusarium species associated with FCR across different geographic regions. This study aimed to investigate the epidemiology of FCR and the distribution of FCR-associated Fusarium species in durum wheat in Southern Italy, as well as to assess the associated mycotoxigenic risk. In 2024, FCR symptoms were monitored in 60 wheat fields across six regions (Sardinia, Sicily, Calabria, Apulia, Basilicata, and Campania). Fusarium strains were isolated from symptomatic crown tissues, identified through tef-1a DNA sequencing, tested for pathogenicity in glasshouse trials, and analysed for tri1 gene variability. Over 500 Fusarium strains were identified. Fusarium culmorum (63%) was predominant, followed by the Fusarium incarnatum-equiseti species complex (FIESC; 10%), F. avenaceum (6%), and F. pseudograminearum (5%). Rare species such as F. algeriense and F. mariecurieae were reported for the first time in Italy. Pathogenicity trials revealed that F. pseudograminearum was the most aggressive (89% severity), while FIESC species were non-pathogenic but frequently isolated. Seven FIESC species were confirmed, with F. clavum being the most common. The detection of the tri1 gene in F. mariecurieae suggests a potential for trichothecene production, warranting further investigation. A second year of field surveys and deeper genetic analyses is underway to expand data, clarify the actual mycotoxin risk, and assess implications for Southern Italian wheat safety.



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