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BOOK OF ABSTRACTS

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Punjab, Pakistan. The disease is also been reported in other chilli-producing countries of the world and required joint efforts towards the formulation and adaptation of joint research for devising the effective management strategies to reduce the losses.

P5.1-016

POPULATION GENETIC RELATIONSHIPS OF WHEAT PUCCINIA TRITICINA BETWEEN YUNNAN-GUIZHOU AND NORTHWEST, CENTRAL AND EASTERN CHINA

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Text

Wheat leaf rust caused by *Puccinia triticina* (*Pt*) is an important fungal disease of cereals in the world, which frequently occurs in the southwest China as well as in the Huang-Huai-Hai wheat regions, and gradually becoming serious in the northwest China in recent years. Leaf rust in Guizhou is increasing every year due to its unique geography, but there have been few studies on the population structure of leaf rust in Guizhou in the past. Leaf rust in Yunnan is easily endemic and has an early onset. However, little research has been done in the past on population genetic relationships between Yunnan and most other regions. In this study, 246 *Puccinia triticina* isolates were collected from eight provinces including Yunnan, Guizhou, Xinjiang, Shaanxi, Gansu, Hubei, Henan, and Shandong in 2021. The population genetic structure and genetic diversity as well as the relationship between ecological factors and genetic diversity were analyzed by SSR molecular markers to infer the mycological relationships and exchanges of the *Pt* populations between different regions and Guizhou and Yunnan. Our study found that wheat *Pt* in Yunnan and Guizhou had the ability to spread to central (Hubei) and eastern (Shandong) China. Similarly, *Pt* in Shaanxi and Gansu tended to spread to central (Hubei) and eastern (Shandong) China. Lastly, *Pt* in Xinjiang showed moderate genetic divergence from other populations.

P5.1-017

MONITORING SPORE DISPERSAL AND EARLY INFECTIONS OF DIPLOCARPON CORONARIAE CAUSING APPLE BLOTCH USING SPORE TRAPS AND A NEW QPCR METHOD

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Text

Apple blotch (AB) is a major disease of apple in Asia and recently emerged in Europe and

the USA. It is caused by the fungus Diplocarpon coronariae (Dc) (formerly: Marssonina coronaria; teleomorph: Diplocarpon mali) and leads to severe defoliation of apple trees in late summer resulting in reduced yield and fruit quality. To develop effective disease management strategies, a sound knowledge of the pathogen's biology is crucial. Data on the early phase of disease development is scarce: no data on spore dispersal in Europe is available. We developed a highly sensitive TaqMan qPCR method to quantify Dc conidia in spore trap samples. We monitored temporal and spatial dispersal of conidia of Dc, and progress of AB in spring and early summer in an extensively managed apple orchard in Switzerland in 2019 and 2020. Our results show that Dc overwinters in leaf litter and spore dispersal and primary infections occur in late April and early May. We provide the first results describing early-season dispersal of conidia of Dc, which, combined with the observed disease progress, helps to understand the disease dynamics and will be a basis for improved disease forecast models. Using the new qPCR method, we detected Dc in buds, on bark, and on fruit mummies, suggesting that several apple tissues may serve as overwintering habitats for the fungus, in addition to fallen leaves.

P5.1-018

MORPHOLOGICAL AND PATHOGENIC VARIABILITY OF AUSTROPUCCINIA PSIDII FROM GUAVA AND ROSE APPLE

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Text

Myrtle rust caused by *Austropuccinia psidii* has been the subject of several recent studies due to its unusual polyphagous lifestyle. The high pathogenic and genetic variability of the pathogen was already reported, indicating that the complexity of the species is higher than currently known. We aimed to evaluate morphological and epidemiological aspects of *A. psidii* specificity to guava (*Psidium guajava*) and rose apple (*Syzygium jambos*). Suspensions of isolates GM1 (from *P. guajava*) and JM1 (from *S. jambos*) (2×10^4 urediniospores mL^{-1}) were sprayed on *S. jambos* leaves. The density of the lesions (number of lesions per cm2) was quantified, and the germination of urediniospores and the formation of appressoria of both isolates was evaluated in a scanning electron microscope. The percentage of germination on leaves was 97%, with 93% of appressoria for JM1 and 93% with 55% of appressoria for GM1. A higher density of sporulating lesions was observed for *S. jambos* plants inoculated with JM1 when compared with GM1, which caused small necrotic areas without sporulation. The mean densities of lesions were 38.7 and 11.6 lesion per cm2 for JM1 and GM1 isolates, respectively. These results indicate that there is pathogenic specialization within *A. psidii* isolates, which will be used in further studies regarding the genetic complexity of this fungus.

P5.1-019

CURRENT EPIDEMIOLOGICAL SITUATION OF MEALYBUG WILT OF PINEAPPLE DISEASE IN ECUADOR