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Abstract Book

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HPR P11. Relationship between *Mungbean yellow mosaic India virus* (MYMIV) and vector (*Bemisia tabaci* Gennadius) in soybean

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Whitefly (*Bemisia tabaci*) transmitted yellow mosaic disease of legume crops in Madhya Pradesh, Central India is considered as major constraint in the productivity of soybean. Based on the molecular studies, *Mungbean yellow mosaic India virus* (MYMIV) was found to be the most prevalent causal agent of YMD in soybean. Female whitefly is efficiently more active to transmit the virus than male. In this concern, an experiment was conducted to study the relationship between MYMIV and vector (*B. tabaci*) in soybean under insect proof net house consecutively during 2016-2018. The minimum acquisition access period (AAP) of 0.5 h was required by female adult whitefly to transmit the MYMIV in soybean seedlings. At 12 h of acquisition feeding period, 100% disease infection was attained and the disease symptoms appeared in 20.6 days which further reduced to 18.9 days at 24 h of AAP. At minimum inoculation period (IAP) of 1 h, the vector transmitted 10% MYMIV infection in the soybean plants and the first disease symptoms appeared in 24 days. At 18 h of IAP, 100% disease infection was recorded and the disease symptoms appeared in 17.5 days, which reduced to 15.8 days at 24 h IAP. A single viruliferous female adult whitefly was able to transmit 15% MYMIV infection in the soybean plants and the disease symptoms appeared in 27.3 days. However, 10 viruliferous adult whiteflies/ plant caused 100% infection and the disease symptoms appeared in 18.4 days. The maximum 15 days retention period of MYMIV was recorded in whitefly

HPR P12. Identification of defense proteins in pearl millet seeds effective against *Magnaporthe grisea*

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Pearl millet is an important source of energy and nutrition for millions of people in the drylands of sub-Saharan Africa and South Asia. Recently, blast, also known as leaf spot, caused by *Magnaporthe grisea* (Anamorph: *Pyricularia grisea*) has emerged as a serious threat to pearl millet cultivation causing substantial yield loss. Seeds tend to contain several storage proteins, some have an inhibitory action against plant pathogens. The present study aimed to identify the defense proteins in seed extrudes of ten pearl millet blast differential lines and investigate their protective effect against growth of *Pyricularia grisea* (Pg 45, Patancheru isolate). The biochemical observations of seed extrudes revealed the presence of plant defense linked hydrolytic enzymes chitinases (12-18 units/ml), β-1,3 glucanases (16-48 units/mg protein) as well as cysteine protease inhibitors (57-123 PI units/mg protein) among the tested lines. The pre-treatment of *P. grisea* media with respective line seed extrudes resulted in significant reduction (22-40%; $p<0.001$) of fungal radial growth and fungal dry weight (20-77%; $p<0.001$). The effective concentration for the 50% fungal growth inhibition (EC50) was identified as 400 and 600 µg/ml for resistant lines IP 21187 and ICMR 06444, respectively. Further, the seed extrudes were able to significantly retard the spore germination (by 18 h) and initial growth (by 48 h) of Pg 45 by 24-83%. These findings suggest that the identified proteins are playing synergistic role in pearl millet defense against blast pathogen, Pg 45 and provide the basis to explore the novel biological control strategies in plant defense.