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Brachypodium distachyon is a suitable host plant for study of barley yellow dwarf virus

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Barley yellow dwarf viruses (BYDVs) belong to the family *Luteoviridae* and cause disease in cereals. Because of the large and complex genome of cereal plants, it is difficult to study host-virus interactions. In order to establish a model host system for the studies on BYDVs, we examined the susceptibility of a monocot model plant, *Brachypodium distachyon*, to BYDV-GAV infection. Fourteen days after BYDV-GAV inoculation by aphid transmission, *B. distachyon* plants (inbred line Bd21-3) showed conspicuous disease symptoms such as leaf reddening, dwarfness and root stunting. Virus accumulation was detected in both shoots and roots using reverse transcription PCR and triple antibody sandwich ELISA. Compared with infected wheat plants, *B. distachyon* plants developed more severe disease symptoms and accumulated a higher level of BYDV-GAV. Under transmission electron microscope, we observed that virus particles accumulated in companion cells and BYDV-GAV infection was associated with the deformation of chloroplasts in the infected leaves of *B. distachyon* plants. Our results suggest that *B. distachyon* is a suitable and promising experimental model plant for the host-BYDV-GAV pathosystem and possibly for other BYDVs.

Biography

Nadege Soumou Wansim is currently working as a PhD scholar at Northwest A&F University, China. She has published numerous research papers and articles in reputed journals and has various other achievements in the related studies. She has extended her valuable service towards the scientific community with her extensive research work.

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