

**GREEN AND BROWN BRIDGES AID SURVIVAL OF MULTIPLE
DIAPORTHE/PHOMOPSIS SPECIES WITH A RANGE OF VIRULENCES ON
SUNFLOWER, SOYBEANS, MUNGBEANS AND OTHER CROPS IN AUSTRALIA**

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ABSTRACT

Multiple species of *Diaporthe/Phomopsis*, some well recognised, others new and undescribed have been identified from live sunflower, sunflower residues, other live crops plus crop and weed residues in the eastern Australian summer cropping regions. Pathogenicity tests have revealed that many of these species are virulent on other crops such as soybean, chickpeas and mungbeans. Some crops are susceptible to multiple species and other species are pathogenic on a range of hosts. In Australia, after thirty years of zero and minimum tillage practices where crop and weed residues are left on the surface in an effort to retain moisture, a significant inoculum reservoir of many *Diaporthe/Phomopsis* species is present in the cropping system regardless of the presence of a favoured crop host. Although green bridges are well recognised in aiding survival of many pathogens, the role of dead weeds left standing after herbicide applications, then acting along with crop stubble as a brown bridge, has largely gone unstudied. It is considered likely that other cropping systems worldwide would also be harbouring reservoirs of diverse pathogenic *Diaporthe/Phomopsis* species in the green and brown 'non-hosts' bridges associated with their individual cropping systems. Additionally, there is evidence that reservoirs of other pathogens and opportunistic colonisers such as *Fusarium* and *Colletotricum* species are also surviving in the 'non-host' residues.

Key Words : Sunflower, *Diaporthe*, *Phomopsis*, pathogenicity, soybeans, mungbeans, green bridge, brown bridge, survival, weeds