

Characterization of INTA's Sunflower Germplasm Bank against *Phoma macdonaldii* at Balcarce, Argentina.

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ABSTRACT

- Introduction y objective. *Phoma macdonaldii* causes Black stem spot of sunflower (BSS) and reduces yield up to 30%. There is no information about the resistance of INTA's Sunflower Germplasm Bank (ISGB) entries to BSS and this was the objective of the present research.
- Materials and methods. Forty seven entries of the ISGB were tested in a naturally infested field at Balcarce Integrated Unit (INTA-UNMP, 37°45' S, 58°18'W, Province of Buenos Aires, Argentina). Two commercial hybrids of known reaction against *P. macdonaldii* were used as controls (VDH 487 susceptible and DK 3820 resistant). The experimental unit was a 5 m-long row surrounded by two rows of a susceptible genotype to promote uniformity of inoculum to each plot. Sunflower debris from an infected field was spread over the row length. From R6 to R8 growth stages, severity of BSS was quantified and incidence of affected nodes, calculated.
- Results. The susceptible control had significantly higher BSS severity than the resistant one ($P < 0.0001$), being 50 and 32%, respectively. Also, there were differences in BSS incidence. The correlation between both variables was $r = 0.63$ ($P < 0.0001$). Three genotypes had BSS similar or better behavior than the resistant control (745, 1008 y 1036), while seven genotypes had similar or higher disease level than the susceptible control.
- Conclusion. The sunflower genotypes of the ISGB have variability in their resistant level against BSS.
- Discussion. This knowledge is important and basic in breeding for resistance and is the first screening of the ISGB genotypes against *P. macdonaldii*.

Key words: genotypes, *Phoma macdonaldii* or black stem spot, resistance, natural inoculation, field testing.