ISBN 978-85-66836-17-2

COMMON BEAN LINES FROM BREEDING PROGRAMS IN BRAZIL EXHIBIT HIGH LEVELS OF RESISTANCE TO WHITE MOLD. R. C. LIMA[1]; P. H. TEIXEIRA[2]; A. F. F. SOUZA[2]; M. S. LEHNER[2]; T. J. PAULA JÚNIOR[1]; H. TEIXEIRA[1]; J. E. S. CARNEIRO[2]; R. F. VIEIRA[3]. [1]Epamig, Viçosa, MG, 36570-000 Brazil, E-mail: rclima86@gmail.com [2]Universidade Federal de Viçosa, Dep. de Fitotecnia, Viçosa, MG. [3]Embrapa/Epamig, Viçosa, MG.

We hypothesized that common bean lines/cultivars (genotypes) with high levels of WM resistance can be screened from those selected for foliar disease resistance and high yield. We submitted 107 genotypes to screening for WM reaction in 14 field trials during the fall-winter season (from 2008 to 2011) in Brazil. Thereafter, 19 genotypes screened plus the WM-resistant control line A195 were evaluated in seven advanced field trials (from 2011 to 2014) and two straw tests. Overall, the correlation WM score-yield was negative in 13 of the 16 trials with either moderate/high or high WM pressure. In the advanced trial with the highest WM pressure, five lines had lower WM scores and higher yields than the control resistant line A195. Lodging resistance, tall canopy and late maturity were important avoidance traits. The Andean genotypes A195, Ouro Branco, and CAL96 exhibited the highest physiological resistance to WM. However, decreased WM scores in the straw test were associated with increased WM score in the field in seven of the 14 comparisons, suggesting that only field trials are required for the screening and evaluation of common bean genotypes for resistance to WM in the fall-winter season in Brazil. The regions where common bean is cultivated during the fall-winter season in Brazil have dry and windy winter. We conclude that genotypes with high levels of WM resistance can be screened from those released by breeding programs in Brazil.

Keywords: Sclerotinia sclerotiorum; Phaseolus vulgaris; Physiological resistance; Avoidance.

Acknowledgments: Financial support was provided by the CNPq (Brasília, Brazil), FAPEMIG (Belo Horizonte, Brazil), and EMBRAPA.

late maturity might be a useful avoidance mechanism for regions with a very dry and windy winter in Brazil