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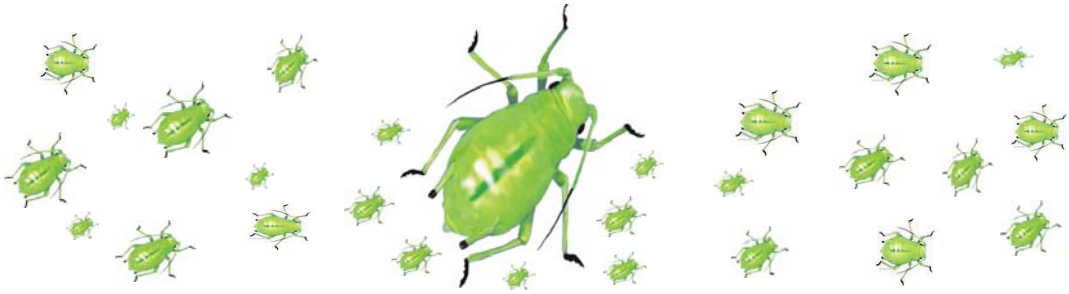

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The aphids *Melanaphis sacchari* (sugarcane aphid) in Africa and *Schizaphis graminum* (greenbug, see above) in the United States; panicle bugs; sorghum midge, *Stenodiplosis sorghicola;* stalk borers and termites infest and reduce yields of sorghum. The millet head miner, *Heliocheilus albipunctella*, reduces grain yield and quality of pearl millet.

INTSORMIL entomologist Bonnie Pendleton, West Texas A&M University, collaborates with African scientists to develop management strategies for sorghum and millet insects. Emphasis is on developing plants resistant to pests. Hundreds of sorghum and pearl millet genotypes have been evaluated by INTSORMIL scientists for grain yield and quality and resistance to insects in the field in Botswana, Mali, Mozambique, Niger, South Africa, and the United States.

Grain mold resistant sorghum at left

IER scientists Niamoye Yaro Diarisso and Mamourou Diourté found crosses of Malisor 84-7 and improved sorghums resistant to panicle bugs and grain mold in Mali. Four sorghums from the United States tested had high levels of resistance to panicle bugs, grain mold (photo right) and the sorghum midge (photo left).

INRAN entomologist Hame Abdou Kadi Kadi and INTSORMIL collaborators evaluated sorghum lines and varieties for resistance to sorghum midge in Niger. ICSV 90013 and ICSV 90011 had yield reductions of only 2 and 6% respectively compared to 60-70% yield losses due to midge damage in the other sorghums tested.

INTSORMIL collaborator David C. Munthali of the Botswana College of Agriculture (photo right) found Texas-bred 04L 217 and 04L 295 sorghum resistant (<20% damaged) while other cultivars were severely damaged (61-100%) by sugarcane aphids. Thirteen sorghums from the Southern Africa Development Community (SADC) were resistant to termites.

Hundreds of sorghums are evaluated each year for resistance to greenbug biotypes E and I in the US. Greenbug resistant commercial varieties greatly minimize the need for insecticide. The development of sorghum hybrids resistant to the greenbug biotype E has been calculated to bring a net welfare benefit to the US of $389 million annually.

INTSORMIL plant breeders in collaboration with their African colleagues are utilizing the pest resistant cultivars in their sorghum and millet breeding programs. Some of the resistant varieties are now commercially grown as a component in combination with biological control and other cultural practices in an IPM program. This IPM approach has resulted in less use of expensive, toxic and environmentally damaging pesticides.

INTSORMIL IMPACTS
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