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Cover photograph (Copyright © 2012, American Society for Microbiology. All Rights Reserved.): Confocal microscopy image of a maize root infected by the fungal pathogen *Fusarium verticillioides*, expressing green fluorescent protein under the control of the promoter sequence of *FUM1*, a key gene in the biosynthetic pathway of fumonisins. Fumonisins are toxic secondary metabolites produced by the fungus during interaction with the host plant and can accumulate in maize kernels to dangerous levels for human and animal consumption. Plant cell walls fluoresce in red and the mycelium in green (total depth, 235 μm ; resolution, $0.36 \times 0.36 \times 1.5 \mu\text{m}$). (See related article on page 252.)