Kristopher A. Blee, Plant Biology

Assistant Professor, 2001
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Ph.D., Utah State Univ., 1997
Postdocs, Univ. London, Utah State Univ.

Research Interests:

- Plant-microbe interactions
- Plant defense
- Symplastic continuity

Research Summary:

I am fascinated with the intricacies of plant-microbe interactions from the anatomical level to the molecular. How is it that beneficial plant colonizing microbes such as arbuscular-mycorrhizal fungi are able to proliferate in plant tissues, even altering normal anatomical development, while other pathogenic microbes are restricted? My research interests are aimed at measuring plant responses in defense and carbon metabolism to these colonization efforts. With an understanding of plant responses it may be possible to manipulate plants to enhance their resistance to disease. We have cloned the oxidative burst (a very early event in plant defense) peroxidase from bean, expressed it in yeast, and generated antisense gene silenced tobacco to better examine peroxidases in plant defense. Because peroxidases are thought to be involved in the lignification of cell walls this peroxidase may also be involved in xylogenesis. Additionally we are evaluating naturally occurring plant defense signaling compounds for their effectiveness as agents in the induction of plant systemic resistance.

Recent Publications:

Y.C. Kim, **K.A. Blee**, J.Robins, A.J. Anderson. 2000. OxycomTM under field and laboratory conditions increases resistance responses in plants. In press, Europ. J. Plant Path.

K.A. Blee and A.J. Anderson. 2000. Arbuscular mycorrhizal fungi and defense responses in plants. *In* Current Advances in Mycorrhizae Research. Integrating Principles of Plant Pathology and Molecular Biology. *Editors* Gopi K. Podila and David D. Douds. American Phytopathological Society Press, St. Paul, MN. pp 27-44.

K.A. Blee and A.J. Anderson. 1998. Regulation of arbuscule formation by carbon in the plant. Plant Journal 16:523-530.