

## RESEARCH AND EXTENSION PUBLICATIONS

### RESEARCH:

Zheng, D., Zhang, H., Carle, S., Hao, G., Holden, M. R. and Burr, T. J. 2003. A *luxR* homolog, *aviR*, in *Agrobacterium vitis* is associated with induction of necrosis on grape and a hypersensitive response on tobacco. *Mol. Plant Microbe Interact.* 16:650-658.

Herlache T. C., Zhang, H. S., Ried C. L., Carle S. A., Basaran P., Thaker M., Burr, A. T. and Burr, T. J., 2001. Mutations that affect *Agrobacterium vitis* -induced grape necrosis also alter its ability to cause a hypersensitive response on tobacco. *Phytopathology* 91:966 – 972.

Argun, N., Momol, M. T., Maden, S., Momol, E., Celek, H., and Burr, T. J., 2001. Characterization of *Agrobacterium vitis* strains that were isolated from the central Anatolia region. *Plant Disease* 83:102-107.

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Burr, T. J., Reid, C. L., Adams, C. E. and Momol, E. A. 1999. Characterization of *Agrobacterium vitis* strains isolated from feral *Vitis riparia* vines. *Plant Disease* 83:102-107

Huang, T. C. and Burr, T. J. 1999. Characterization of plasmids that encode streptomycin-resistance in bacterial epiphytes of apple. *J. Appl. Microbiol.* 86: 86:741-751.

Xue B. et al. 1999. Transformation of five grape rootstocks with plant virus genes and a *virE2* gene from *Agrobacterium tumefaciens*. *INVITRO PLANT* 35:226-231.

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Alexandrova, M., Bazzi, C. Stefani, E., Anaclerio, F. and Burr, T. J. 1999. Biological control of *Agrobacterium vitis* using non-tumorigenic agrobacteria. *Vitis* 38:31-35.

Szegedi, E., Sule, S., and Burr, T. J., 1999. *Agrobacterium vitis* strain F2/5 contains tartrate and octopine utilization plasmids which do not encode functions for tumour inhibition on grapevine. *J. Phytopathology* 147:665-669.

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- EXTENSION (from 1995):**
- Burr, Thomas J., 2003. Crown gall rears up in 2003. *Finger Lakes Vineyard Notes*. August 6 pp. 1-2.
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### **PROFESSIONAL OVERVIEW AND OBJECTIVES**

My overall program emphasizes research and extension on the biology and control of bacterial pathogens. A primary goal is to understand how bacteria communicate with each other and how they interact with plants to cause disease or to function as biological controls. In *Agrobacterium vitis*, the cause of grape crown gall, this involves research on quorum-sensing systems and the subsequent expression of genes that affect plant interactions. Specific interactions include the ability of the bacterium to induce a grape root-specific necrosis and to induce a hypersensitive response on non-host plants, such as tobacco. A related goal is to determine how some strains of *A. vitis* are able to prevent the development of crown gall specifically on grape and to develop these biological controls for commercial use. Similar objectives are being pursued for *Xylella fastidiosa*, the cause of Pierce's Disease of grape and for *Xanthomonas campestris* pv *glycines*, the cause of pustule disease of soybean. Extension goals include the education of growers with regard to bacterial diseases and the implementation of research in the development of effective, environmentally and economically-sound strategies for disease control