



Use of Herbs as Natural, Environmental Friendly Pesticides

The Technology

Weed, pest and disease control are critical processes for the agricultural industry. Current control methods typically require the application of large amounts of one or more chemical compounds on the plant or soil for treatment. Unfortunately, chemical pesticides can infiltrate water and food supplies, and some have detrimental and even toxic effects on humans and the environment. There is a need for more effective and environmentally-safe control methods.

Researchers at the University of Tennessee have developed a novel process for controlling weeds, plant pests or plant pathogens (e.g., fungi) using bioactive herbs. These naturally-occurring herbal compounds are highly active pesticides that can be added either wet or dry to soil as a soil amendment or as top dressing for potted plants.

Related publications:

- Gwinn, K. D., Greene, S. E., Trently, D. J., Ownley, B. H., Hamilton, S. L., 2003. Monarda: A new control strategy. Proceedings of the Southern Nurseryman's Association Research Conf. 48, 208-211.
- Gwinn, K. D., Greene, S. E., Trently, D. J., Ownley, B. H., 2006. Inhibition of sclerotia of *Sclerotinia sclerotiorum* by Monarda and its essential oil constituents. Phytopathology 96, S44.

Benefits

- Protect both human health and the environment through the development of environmentally benign, efficient control methods for pests in landscapes and agriculture.
- Open new markets for disease, pest and weed control of plants that previously have not been able to be protected.

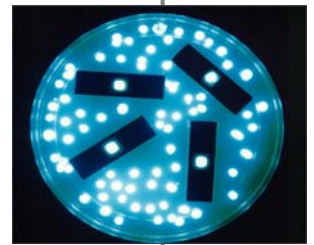
The Inventors

Dr. Kimberly Gwinn is an Associate Professor at the University of Tennessee Institute of Agriculture in the Entomology and Plant Pathology department. Dr. Gwinn has served as the Acting Science Director of the Bioactive Natural Products Center of Excellence, a collaborative research network incorporating several departments and divisions at the University of Tennessee (UT), The McClung Museum, and Oak Ridge National Laboratory (ORNL). Her focus is on the use of natural products as pesticide alternatives, secondary metabolism of fungi and physiology of plant diseases.

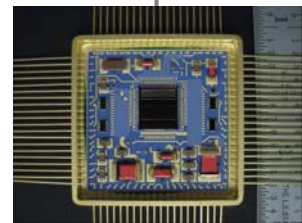
AGRICULTURE



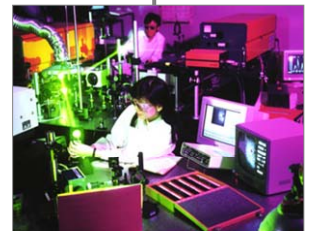
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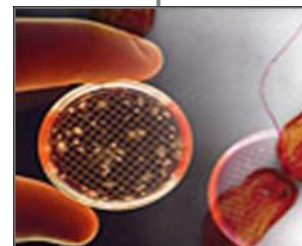
ENGINEERING



MATERIALS



MEDICINE





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Dr. Susan Hamilton is an Associate Professor at the University of Tennessee Institute of Agriculture in the Department of Plant Sciences. Dr. Hamilton's area of specialization is herbaceous ornamental plants and people-plant relationships. Her research interests include herbaceous plant variety trials, public horticulture and people-plant studies. Sue is also the director of the [UT Gardens](#), and the chief faculty member managing the department's undergraduate and graduate programs in public horticulture.

Patents

- US Patent Application 10/541,048. USE OF HERBS AS A DELIVERY SYSTEM FOR BIOACTIVE PHYTOCHEMICALS
- Canadian Patent Application 2,512,248. USE OF HERBS AS A DELIVERY SYSTEM FOR BIOACTIVE PHYTOCHEMICALS

Contact

The University of Tennessee Research Foundation (UTRF) is a non-profit corporation responsible for commercializing University of Tennessee technologies and for supporting University research. UTRF is seeking parties interested in learning more about this technology and in exploring possible research and/or commercialization arrangements.

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