

Horticultural Science Departmental Seminar
3:00 pm, March 4, 2019
121 Kilgore Hall

The Genus *Digitalis* (Foxgloves): Biotechnological Approaches On Cardiac Glycoside Production, Conservation and Taxonomy

Dr. Buhara Yücesan

Visiting Scientist, Department of Horticultural Science, NCSU
Abant İzzet Baysal University, Faculty of Natural & Agricultural Sciences
Dept. of Seed Science and Technology, 14030 Bolu, TURKEY



The genus *Digitalis* L. containing species, commonly known as the “foxglove”, is the main source of cardenolides, which have various pharmacological properties effective against certain pathological conditions including myocardial infarction, arterial hypertension, cardiac dysfunction, angina, and hypertrophy. Together with a prime effect of controlling the heart rhythm, many workers demonstrated that lanatoside C and some other cardiac glycosides are effective in several cancer treatments such as prostate and breast cancers. Phytochemical studies on cardenolides, naturally occurring plant secondary metabolites, have mainly focused on the species of the genus *Digitalis* L., as the members of this family have a high level and diverse content of cardenolides. During the last few decades, plant tissue culture techniques have been optimised for many plant species including *Digitalis*, however, the production capacity of cardenolides somehow failed to reach a commercially desired extent. In this presentation, the genus *Digitalis* is evaluated in terms of its main botanical and physiological features, traditional uses, molecular genetics and metabolomics, cellular mechanism of action, medicinal uses, clinical pharmacology, drug interactions, therapy in the management of cardiovascular disorders, potential utility of therapy in extracardiac conditions, and toxicity.