



## **Preliminary Results Released At CalScape: Project Carbon Strengthens the Message "Think Green, Live Green"**

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"Reduce your carbon footprint" has become as common of a phrase as "Got Milk?" The Green Industry offers unique products that hold the key to reducing carbon footprints and will ultimately create a more sustainable and healthy lifestyle. With people spending an average of 90% of their time indoors, indoor air quality presents its own challenges. With increased awareness, there is the potential to reduce the estimated 2.4 million people that die each year from causes directly attributed to air pollution.

NFF is currently funding a project called *Quantification of Carbon Assimilation in Interiorscape Plants*. Tag-named **Project Carbon**: this project, conducted by University of Georgia researchers, Drs. Bodie Pennisi and Marc van Iersel, seeks to provide supporting data to substantiate the argument for using indoor plants as part of sustainable certification programs such as LEED.

Leadership in Energy and Environmental Design (LEED) currently does not recognize indoor plants and their role in improving indoor air quality (IAQ) as part of the LEED point system. LEED promotes a whole-building approach to sustainability in five key areas of human and environmental health: sustainable site development, water savings, energy efficiency, materials selection and indoor environmental quality. Project Carbon seeks to provide the additional science that would support an expansion of the certification to indoor plants.

A total of three phases are planned for Project Carbon; each phase consists of three species grown for a 10-week duration. Greenhouses are set at consistent temperatures both day and night. After acclimatization, plants are placed in a growth chamber under three light levels, typically encountered in interiorscapes. Upon termination of the period in the growth chamber, the data is taken: dry weight of shoot, dry weight of root, total leaf area, number of leaves, vine length, and height. After experiment termination, representative dried tissue samples are sent to the lab for elemental analysis, including carbon, oxygen, hydrogen, and macro and micronutrients.

Photosynthetic measurements of plants under real interiorscape conditions (in situ) will also be taken in various accounts in the Metro Atlanta area and managed by the same company for consistency. In the process of regular maintenance, plant material (leaf clippings, stems, etc.) will be removed and preserved for dry weight analysis. Thus, the photosynthetic rate, the light level and the tissue removed, will provide an estimate of the carbon removal from interiorscape plants in situ.

Preliminary results are showing that a total of 216 "4-inch" plants of *Ficus benjamina*, *Pothos*, *Philodendron*, *Sansevieria*, *Aglaonema*, and *Spathiphyllum*, clearly fix carbon. In addition, since plants absorb carbon dioxide as a molecule, there is a positive impact on the environment by the CO<sub>2</sub> removal, and not just carbon. The weight of elemental Carbon is 12, while the weight of CO<sub>2</sub> is 44. Thus more than three times the amount of CO<sub>2</sub> is removed as just Carbon.

Plants in homes and offices are not only aesthetically pleasing, they can also increase the quality of the air we breathe and thereby the health of the inhabitants. Research has shown that while plants give-off a small amount of harmless volatile organic compounds (VOCs), they also remove significant amounts of toxic VOCs from the air.

As we continue to research and learn more about the potential plants have to remove VOCs, NFF's mission is to continue to support research to create exceptionally healthy indoor environments. More details on **Project Carbon** will be offered during the Tropical Plant Industry Exhibition (TPIE), January 14-16, 2010. For more information about the National Foliage Foundation or how to contribute, visit [www.nationalfoliagefoundation.org](http://www.nationalfoliagefoundation.org) or email Linda Reindl, NFF Administrator, [lreindl@fnjla.org](mailto:lreindl@fnjla.org).

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