GROWERTALKS

Features

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Marketing & Research: The Science of Flower Power

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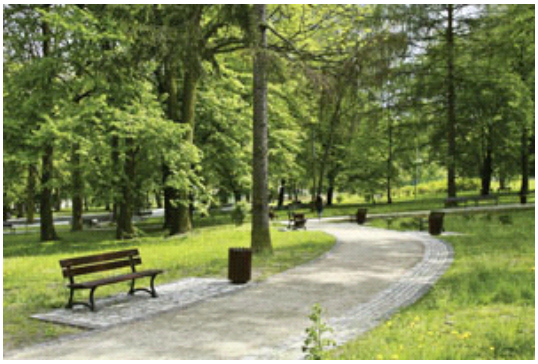

With a nation of stressed-out, time-crunched Americans taking a second look at what's important in their lives, don't assume that vegetable gardens are their only trigger point in the garden center this year.

The evidence on the benefits of plants and green landscapes continues to stack up—from psychological benefits to money-saving and environmental attributes. A small investment in cut flowers, a garden or even just a walk through someone else's garden may be the elixir for the stressed-out person, the enhanced education for a third-grade class or the desired improvement in quality-of-life for an elderly parent. A correctly placed tree could be the much-needed difference in someone's energy bill.

While we all know that plants have fantastic benefits beyond their great visual appeal, a little ammunition in the form of scientific research may be just what you need to convincingly promote plant sales. Here are some of the newest research reports, along with a few oldies but goodies.

Your challenge? Use this information to inspire your customers!

You're never too old

Worried about losing your best customers, the aging baby boomers? We've seen a flurry of published research in the past year that supports the notion that gardening is exactly what they should be doing to boost their vitality.

According to new research out of Kansas State University, gardening can keep their hands nimble and strong and keep their self-esteem high. Plus, gardening can help people achieve a moderate activity level and meet the Centers for Disease Control and Prevention's exercise recommendations.

"One of the things we found is that older adults who are gardeners have better hand strength and pinch force,

which is a big concern as you age," said Candice Shoemaker, Kansas State professor of horticulture. They also saw marked differences between gardeners and non-gardeners in the areas of overall physical health and self esteem. She adds, "There's a lot of natural motivation in gardening. For one thing, you know there's a plant you've got to go out and water and weed to keep alive. If we get the message out there that older adults can get health benefits from gardening, they'll realize that they don't have to walk around the mall to get exercise."

Another study, by Claudia Collins and Angela O'Callaghan at the University of Nevada Cooperative Extension, Las Vegas, looked at the impact of indoor gardening for a group of residents at an assisted-living facility. In just a month, with four two-hour horticulture classes, they found that residents "showed a significant increase in mastery, self-rated health and self-rated happiness."

They concluded, "The results of this study indicate that a basic horticultural activity, as simple as learning how to maintain a houseplant and taking individual responsibility for one, can have a short-term positive impact on the quality of life and on primary indicators of future health outcomes of older adults residing in assisted living facilities."

Physical and Psychological Health Conditions of Older Adults Classified as Gardeners or Nongardeners" was published in the February 2009 issue of HortScience (Vol. 44). The Kansas study on exercise, "Can Older Gardeners Meet the Physical Activity Recommendation through Gardening?" was published in HortTechnology (Vol. 18, Issue 4). For a press release on that research, visit http://www.eurekalert.org/pub_releases/2009-02/ksu-ggo020309.php. "The Impact of Horticultural Responsibility on Health Indicators and Quality of Life in Assisted Living" appeared in the October-December 2009 issue of HortTechnology (Vol. 18, Issue 4)

Plants for the sick

Bringing flowers and plants to the sick is more than just a sympathy gesture. A recent publication by Seong-Hyun Park and Richard Mattson at Kansas State University backs up existing data that show a positive relationship between plants and pain management and recovery in hospital settings. In this study, they studied patients recovering from an appendectomy in patient rooms with and without foliage and flowering plants.

The study concluded, "Patients in hospital rooms with plants and flowers had significantly fewer intakes of postoperative analgesics; more positive physiological responses evidenced by lower systolic blood pressure and heart rate; lower ratings of pain, anxiety and fatigue; and more positive feelings and higher satisfaction about their rooms when compared with patients in the control group. Findings of this research suggested that plants in a hospital environment could be noninvasive, inexpensive and an effective complementary medicine for patients recovering from abdominal surgery."

"The Effects of Flowering and Foliage Plants in Hospital Rooms on Patients Recovering from Abdominal Surgery," was published in the October-December 2008 issue of HortTechnology (Vol. 18; Issue 4).

Growing Environmental Stewards

Children have long benefited from plants and gardening, and school gardening curriculums are on the rise. Recent studies confirm how school gardening programs can also fit into environmental and science education.

In a recent report out of Texas A&M University evaluating the effect of a gardening program on third through fifth graders, researchers looked at how the school gardening program impacted the children's environmental attitudes and actions. While all students showed positive environmental attitudes, demographics did play a role. Those with previous gardening experience scored significantly higher on the environmental attitude statements when compared with children without gardening experience. Girls also scored significantly higher than boys in this area. The study also concluded that, "Caucasians scored significantly higher when compared with African-Americans and Hispanics on environmental attitude scores, and Caucasians scored significantly higher when compared with African-Americans on environmental locus of control scores." (Editor's note: "Locus of control is a term in psychology which refers to a person's belief about what causes the good or bad results in his or her life, either in general or in a specific area such as health or academics.)

Another study out of Iowa State University surveyed parents of students who'd participated in Iowa's Growing in the Garden curriculum (for kindergarten through third grade). The results showed that a significant number of parents noted an increased awareness and interest in their children in the areas of science and the environment. Here, the study noted that socioeconomic status, ethnicity and gender did not influence the outcomes.

"Growing Environmental Stewards: The Overall Effect of a School Gardening Program on Environmental Attitudes and Environmental Locus of Control of Different Demographic Groups of Elementary School Children," appeared in the April-June 2008 issue of HortTechnology (Volume 18, Issue 2). "Assessing a Garden-Based Curriculum for Elementary Youth in Iowa: Parental Perceptions of Change" was published in the January-March 2008 issue of HortTechnology (Volume 18, Issue 1).

Carbon and houseplants

This study isn't finished yet, but look for it this summer. The interior foliage sector has noted a need for research on indoor plants and their ability to assimilate indoor carbon. The National Foliage Foundation is supporting a new study by Dr. Bodie Pennisi and Marc van Iersel at the University of Georgia. The project also has the backing of Green Plants for Green Buildings and FNGLA. Look for an interim report out by July 1, 2009 and a final report by November 1, 2009. Plan on using the information to turn houseplants into oxygen machines.

Walk in nature to improve memory

Do you remember those days before you had to keep a list, when you could remember everything? A walk in the park, the woods, or the arboretum might be just the thing you need to boost your memory. New research out of the University of Michigan shows that scenic settings (as opposed to urban ones) actually renew and

replenish cognitive control centers. Study participants who took 20-minute walks in an arboretum performed 20% higher on standard memory and attention tasks than those who walked through a typical downtown, urban setting.
Could a walk through the garden center do the same thing?

The research conducted by psychology researchers Marc Berman, John Jonides and Stephen Kaplan was published in the December 2008 issue of Psychology Science. For more details on the research, visit www.ns.umich.edu/htdocs/releases/story.php?id=6892.

Green spaces ease ADD symptoms

We have a new addition to the numerous benefits documented by the University of Illinois at Urbana-Champaign's Landscape and Human Health Laboratory. Researchers Andrea Faber Taylor and Francis Kuo just published their newest study on how children with attention deficits concentrate better after a walk in the park. Twenty-minute walks in the park resulted in children with ADHD concentrating better than after downtown or neighborhood walks. The effect was considerable and comparable to that of typical formulations of methylphenidate—commonly known as Ritalin, the prescribed drug used to treat ADHD.

Also of note: the Landscape and Human Health Laboratory has a new study under way, "The Capacity to Learn." They will be looking at the effects of schoolyard nature on children's learning and academic achievement, as reflected in standardized test scores. They hope to convincingly document whether children learn more in green school settings.

"Children with attention deficits concentrate better after walk in the park," was published in the March 2009 issue of the Journal of Attention Disorders (Vol. 12, No. 5). Also visit the lab's website at www.lhhl.uiuc.edu/index.htm.

Shade trees equal energy savings

It's common knowledge that shade trees can reduce a home's electric bill if they're using energy for cooling in the summer. But a study finally produced the numbers to prove it. According to ScienceDaily, shade trees on the west and south sides of a house in California can lower a summertime electric bill by about $25 per household.
A few key points to pass on to consumers:

> Placement of a tree is the key to energy savings. Shade trees do affect summertime electricity use, but the amount of the savings depends on the location of the tree. Trees planted within 40 ft. of the south side or within 60 ft. of the west side of the house will generate about the same amount of energy savings. This is due to the way shadows fall at different times of the day.
>
> Tree cover on the east side of a house has no effect on electricity use.
>
> A tree planted on the west side of a house can reduce net carbon emissions from summertime electricity use by 30% over a 100-year period.

This research, conducted by David Butry of the National Institutes of Standards and Technology and Geoffrey Donovan with the Forest Service's Pacific Northwest Research Station, will appear under the title "The Value of Shade: Estimating the Effect of Urban Trees on Summertime Electricity Use," in an upcoming issue of the journal Energy and Buildings.

Carbon sequestration

How much carbon can flowers, shrubs and trees sequester? Here's one new development that may be helpful on the nursery side of things: The U.S. Forest Service has developed a new carbon sequestration calculator for trees. It's meant to help people estimate how much carbon might be sequestered over the lifetime of a tree they plant and to help direct them in choosing the right species for their climate.

It might be interesting for a garden centers to run different sample scenarios with the calculator and promote the results in their nursery stock sections.

You can access the calculator application at http://www.fs.fed.us/ccrc/topics/urban-forests/. (Note: it only runs on Windows operating systems.)

Benefits of a buffer

A row (or three) of trees can make a big difference—and not just as a visual buffer. In a six-year study at the University of Delaware, researchers found that a three-row plot of trees of various species and sizes planted around a farm reduced total dust by 56%, ammonia by 53% and odor by 18%. According to ScienceDaily, researchers also noted that the living filter conserves energy and enhances water quality around the farms by filtering pollutants from the soil and groundwater. Today, about 35% of the 2,000 farms on the Delmarva Peninsula, where the research took place, have vegetative buffers. Similar benefits may be realized in other scenarios.

What works best? The researchers recommend that poultry farms (or other facilities) use deciduous trees or trees with a waxy leaf surface for the first row, and evergreens for the next two rows.

Don't forget!

Let's not forget all the great research that has already been conducted on the benefits of plants, gardening and landscapes. Here are a few examples of findings you might want to cite to get the public excited about plants:

Foliage for indoor air pollutants. Based on NASA research by Dr. B.C. Wolverton, here are some of the best plants at reducing indoor air pollutants: chamaedorea (bamboo plant), dracaena (corn plant), epipremnum (golden pothos), spathiphyllum (peace lily), hedera (English ivy), aglaonema (Chinese evergreen), chlorophytum (spider plant), dracaena Janet Craig, Boston fern, and philodendron.

Plants in the workplace. Interior plants can improve worker productivity and creativity in the workplace. They can also reduce stress and reduce the number of sick days employees take. For links to several studies on these benefits, visit Green Plants for Green Buildings at www.greenplantsforgreenbuildings.org.

Childhood experiences matter. In 2004, Virginia Lohr and Caroline Pearson-Mims at Washington State University analyzed survey respondents' attitudes and actions towards gardening and trees and found a common link with the respondents' childhood experiences. In short, those who grew up next to natural elements such as flower beds and parks had a more positive relationship and attitude towards green spaces as adults. Passive interactions with plants still sparked a positive attitude later on, but it was the more active experience of gardening (including picking flowers, planting trees) that led to the strongest feelings (as well as the act of gardening as an adult). So if you want the next generation to value green landscapes and visits to garden centers, hort programs for children may be one of your best investments.

Garden visits and depression. Elderly residents of long-term care facilities often suffer from depression. A 2005 study out of the University of Turku in Finland looked at the effect of garden visits (and even just viewing a garden from a balcony) on a group of residents experiencing a high level of depression. For more than half of the participants, visiting or viewing the garden improved mood, quality of sleep and ability to concentrate.

What a tree is worth. Over a 50-year lifetime, a tree generates $31,250 of oxygen, provides $62,000 worth of air pollution control, recycles $37,500 worth of water and controls $31,250 worth of soil control. Those numbers come from USDA Forest Service Pamphlet #R1-92-100 and were calculated in 1992. Chances are those numbers might be even higher today. Keep a lookout for updated figures in the near future.

Urban forestry benefits. From the fact that shoppers will pay more for an item in a well-landscaped shopping area to the psychology behind sustainable actions, be sure to check out Human Dimensions of Urban Forestry and Urban Greening for an enormous database of research articles on nature and consumer environments, civic ecology and urban forestry and human benefits. Website: www.naturewithin.info.

Greenery and human health. The Landscape and Human Health Laboratory has documented some crucial findings, including: Views of trees from a home can improve young girls' self-discipline and ability to do well in school. Residential landscaping (done correctly) can discourage crime and strengthen communities. Adding trees near a residence can reduce domestic violence. Their website includes color fliers and downloadable PowerPoint presentations for each of these findings: www.lhhl.uiuc.edu.

Environmental. Finally, we can't leave out the other common environmental benefits we often refer to with gardens and landscapes, from wildlife habitats (bees, butterflies, birds) to biofilters for runoff (rain gardens) and tools for erosion prevention.

Etc. Yes, the list does go on, but we're out of room. Think we missed something important? Or have a success story to share? E-mail us at jwhite@ballpublishing.com. We'll keep you posted on the latest plant benefit research.