

Examining the New Economics of Plants in the Workplace

by Jan Roy

Washington State University has released the results of a study which may shift the way businesses think about plants in the workplace for years to come. Having a professional interiorscaper place plants in the office or in any commercial setting may become a standard method of adding to bottom-line profits.

Plants Feed the Bottomline

Research conducted by Professor Virginia L. Lohr provides concrete data that plants in the office are good for business. Very rarely, if ever, has anyone looked at the economics of the relationship between plants, human well-being and productivity in this context. What business would not want to increase the productivity of their employees and decrease their stress by making a simple change in the workplace?

In Dr. Lohr's study, participants were 12 percent more productive and less stressed than those who worked in an environment with no plants. The study took place in a simulated office setting. Common interior plants were used in a Washington State University computer laboratory with 27 computer workstations. The lab had no windows and was illuminated with overhead fluorescent lights.

The experiments were conducted with 96 university students and employees who ranged in age from 18 to 46 years old. Half were male, half were female. All the subjects had used computers before, and most used computers once a month. When asked if they liked plants, 81 percent said "yes," and the remainder had either no opinion or said "no."

A Computer Measured Reactions

A computer program to test productivity and induce stress was specifically designed for these experiments which incorporated one hundred symbols and time-measured readings of the participants' reactions. They were presented in the same randomized sequence to each subject. Blood pressure readings recorded while using the program confirmed that the program was effective in inducing stress.

Emotional states and pulses were also measured during the experiment. Plants present and plants absent were the only variables the participants experienced. When plants were present, the researchers created a setting much like that of a business that had plant installations. Common low-light tolerant species of interior plants were added around the periphery of the room.

Floor plants, table plants, and hanging plants were included in the installation, giving the appearance of a well-designed, but not lush, interiorscape. Plants were positioned so that clusters would be present in the peripheral view of each subject sitting at a computer terminal, but would not interfere with the subject's activity.

No more than eight subjects were tested at one time. Dr. Lohr's assistants, Caroline H. Pearson-Mims and Georgia K. Goodwin, led each through a series of tasks. Measures were taken of their emotional state, pre- and post-task blood pressures and pulse readings. Each subject was tested either in the presence or the absence of plants, but not under both conditions.

How Plants Help

The participants who worked in the presence of plants reported that they felt more attentive after completing the productivity task than those who worked in the absence of plants. When the scores of the two groups were compared, the group that worked in the presence of plants showed significant increases in their post-task attentiveness.

While each group made a similar number of mistakes on the productivity test, reaction time in the presence of plants was 12 percent faster than those in the absence of plants. This clearly indicates that plants may have contributed to increased productivity.

The results of a moderating influence of plants on blood pressure are consistent with research conducted by other researchers. Respected researchers such as Ulrich have examined recovery rates in pre-stressed subjects who watched videos of natural or urban settings.

Those watching the natural setting reported quicker and more complete recovery from stress. This study confirms that live interior plants in containers can induce the same response as videotapes of natural settings. Factors contributing to the productivity of actual employees are complex and multifaceted, and the full impact cannot be estimated from this study. However, these results demonstrate that this area of research warrants more study.

"Interior Plants May Improve Worker Productivity and Reduce Stress in a Windowless Environment." The study was conducted in WSU's Department of Horticulture and Landscape Architecture and was published in the Journal of Environmental Horticulture.

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