Meeting Review

Human Issues in Horticulture: Research Priorities

April 24-26, 1992

At the Apr. 1992 national symposium "People-Plant Relationships: Setting Research Priorities," researchers and practitioners from around the world met to assess the current state of knowledge of human issues in horticulture and to develop a set of research priorities for this emerging and important field. Research priorities were developed in working groups led by Joel Flagler, Charles Lewis, Virginia Lohr, and Candice Shoemaker, with overall coordination by Diane Relf. Research priority areas on this list represent those for which there was general consensus regarding importance.

It generally is recognized that plants are essential to life on this planet and that plants influence many areas of human well-being. As researchers in this area, we must elucidate the extent, nature, and impact of these influences if we hope to develop, promote, and implement strategies to improve the quality of life through horticulture. Research is essential to document scientifically the impacts plants have on health and well-being of individuals and communities in diverse settings and cultures. These impacts have been broadly defined and include environmental, therapeutic, and economic considerations.

Research areas in priority order

Human health and wellness. Studies have begun to document the influence of plants, landscapes, and

natural settings on human health and well-being (physical, nutritional, and physiological). Plants may play a role in prevention of and recovery from major illnesses and in stress reduction. Research is needed to document who may benefit, how they are affected, and the specific plant qualities that elicit the response. Research in this area has the potential to improve human well-being and reduce health-care costs. Investigating uses of plants in other cultures may reveal additional links between plants and health.

Human interactions in urban areas. People involved with inner-city gardening projects report numerous benefits when communities become involved with plants: improved community cohesion, enhanced self-esteem, reduced littering, and less crime. These benefits have not been documented scientifically—perhaps because research in this area is complex and potentially costly. Documenting the human responses to plants in urban areas is essential to conducting programs most effectively. As urban settings typically are deficient in natural components, we must understand how the reduced presence of nature and the limited opportunity for personal responsibility and for participation with natural components is influencing us and what, if anything, we should do about it.

Impacts on children. Children have been singled out as a particularly important group to study. They are our future and they are being raised

under increasingly complex, difficult, and unnatural environmental conditions. How can interactions with plants and nature benefit children? Research is needed to understand the effects of formal and informal horticultural programs for children on their development, their parents, and their communities.

Environmental quality. Research indicates that plants influence environmental quality in a variety of ways. They reduce soil erosion in water run-off and reduce the build-up of carbon dioxide. Interior plants appear to improve air quality in buildings; plants have been shown to reduce air pollutants in small test chambers. Documenting any effect of plants on environmental quality is important, but a particularly high priority should be placed on testing the ability of plants to remove interior air pollutants in rooms or buildings.

Important issues regarding people's perceptions and values of environmental quality as it relates to the use of cultivated plants need to be explored. Examples of the issues to be researched include: examining the perception of "well-cared-for" vs. "neglected" in a "manicured" vs. "natural/wildflower/wetland/native" landscape; and studying what motivates adoption of landscape management techniques that improve the environment.

Economic development and business productivity. Trees and other plants in the landscape are reported to increase property value. Other reports claim that interior plants improve the business climate, but few studies are available to document such claims. Impacts of plants on worker productivity, stress, and absenteeism should be investigated. Consumers' willingness to pay for the presence of plants also must be elucidated further as to the impact it has on tourism and other business.

Potential research questions

The following potential research questions were raised and discussed at the People-Plant Relationships: Setting Research Priorities symposium. They are *not* listed in order of priority.

Human health and wellness

- What is the potential economic value of the impact of plants on human health?
- What aspects of interactions with

plants are therapeutic?

- Do plants facilitate restorative and physical recovery processes?
- Do plants facilitate stress reduction?
- Are aggressiveness and hostility reduced by the presences of plants? Which plants work best? How many and in what combination?
- Do plant fragrances, colors, or other physical characteristics affect the brain and, therefore, our moods?

Human interactions in urban areas

- How can designs and gardening projects be made more relevant and meaningful by involving the participants?
- What are benefits to communities of residential, institutional, and public open spaces?
- What human factors lead to successful community gardening projects?
- What is the value of including or restoring natural components in urban environments (water, wildlife, vegetation)?
- What are the effects of gardening projects on group behavior (e.g., reduced littering, social interactions, etc.)?

Impacts on children

- What is the efficacy of horticulture in improving parenting or teaching skills for the individual as well as the community?
- How can we improve attitudes, starting in early childhood, toward the presence of vegetation?
- What are the long-term effects of daily exposure to plants, starting in childhood?
- What is the influence of programs involving plants on literacy and learning in general?
- What are the impacts of formal and informal plant-related programs on

children as they mature? Do they influence the family and the community?

Environmental quality

- What is the potential for plants in controlling pollution indoors and out? Which plants are effective and how many are needed?

Economic development and business productivity

- What can we learn from other cultures about how workers respond to plants? Are worker absenteeism and productivity influenced by the presence of plants in the work environment?

General (basic knowledge with application to all areas)

- What are traditional relationships between plants and people?
- How do people (individuals, communities, and cultures) interact with plants (active/passive)?
- What are the benefits of plants to individuals in different settings such as: urban public spaces, health care settings, schools, prisons, residences, and the work place?
- What legislation exists concerning the presence of trees and plants on public and private property? What is the impact of this legislation on people's attitudes and actions toward plants?
- Can we identify groups or individuals and situations most likely to benefit from plants?
- What are the cultural, ethnic, age, gender, and individual differences in how people respond to plants?
- How does the eye respond to green and natural scenes?
- What are the preferences of different people and cultures for different individual plants? How do the re-

sponses to and preferences for living plants compare to representation of plants?

Other questions not specifically related to research into people-plant interaction

- How do people earn a living through horticulture; i.e., what are the career opportunities beyond production horticulture?
- Why is the professional, technological field dominated by white males in this country while the applied mastery of landscaping and gardening is not?
- How can we legitimize people-plant interaction research to enhance its credibility among other groups, including academics, health-care workers, and politicians?
- How do we attract additional researchers to this field?
- Who is funding research in this area, and what are their goals for this type of funding?
- How can we take advantage of the fact that the knowledge of the availability of nearby nature is important even when the natural environment is not being accessed actively?

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