

# Introduction to the Workshop

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There is an intense interest for new information on health benefits of fresh fruit and vegetables. Consumption of plant-based foods, particularly small fruit crops such as grapes (*Vitis* sp.), strawberries (*Fragaria* sp.), blueberries (*Vaccinium* sp.), blackberries (*Rubus* sp.), and cranberries (*Vaccinium macrocarpon*) has increased and half of U.S. consumers now eat fresh fruit for a specific health benefit (Fjeld and Lawson, 1999). Phytonutrients (plant derived compounds that promote health), such as carotenoids, phenols, and polyphenols, which are abundant in small fruit crops (Kalt et al., 1999; Kalt and Dufour, 1997), elicit biologic activities associated with health promotion (Prior et al., 1998; Prior and Cao, 2000). Producers and consumers alike are seeking to identify foods and their components that will protect health and delay the onset of disabilities associated with chronic and degenerative diseases.

Recent advances in plant molecular biology, biochemistry, and analytical instrumentation which provide a powerful array of approaches and tools that open new avenues of research will enable plant biologists to characterize, increase and modify plant content of phytochemicals, elucidate the complex transport and biosynthetic pathways, and study effects of pre- and postharvest factors on the concentration and stability of phytochemicals. A growing body of information exists on the effects of specific agricultural practices and the cultural environment (such as temperature, rainfall patterns, and light intensity) on food phytonutrient content (Goldman et al., 1999; Prior et al., 1998). Postharvest evaluation of the phytochemical composition of food crops is important in assessing the impact of handling procedures on the nutritional content, as well as the consumer preference, based on visual and aromatic attributes (Forney et al., 1998). The four papers from this workshop will provide horticulturists with the current status of scientific knowledge of agricultural production factors and genetic improvements germane to the topic of phytochemicals and consumer perception of these value-added constituents in small fruit. To address some aspects of agricultural strategies to enhance phytonutrient contents, as well as the techniques to protect them in small fruit crops through breeding, production practices, and postharvest handling, is timely and essential. This fact prompted the ASHS Viticulture and Small Fruit Working Group to organize the current workshop to review existing information and identify new research opportunities and technical limitations and barriers for enhancing the quantity or quality of phytochemicals in small fruit. It is hoped that these proceedings will raise the awareness of the significance of production practices and postharvest handling procedures in optimizing and maintaining the value-added fruit constituents in small fruit.

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