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Introduction to the Workshop "Blueberries – Now and the Future"

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Abstract

This introduction provides a lead-in to the workshop entitled: Blueberries – Now and the Future. This workshop consisted of four excellent speakers summarizing the latest in nursery production, horticultural practices, breeding and development and the nutraceutical benefits of Vaccinium, commonly known as blueberries. The workshop was presented on Saturday 29 July 2006, following the Annual Business Meeting of the American Pomological Society (APS) in New Orleans, Louisiana. The APS sponsored a workshop which was attended by more than 75 scientists and growers. A taste testing of blueberry cultivars followed the presentations.

On Saturday 29 July 2006, following the Annual Business Meeting of the American Pomological Society in New Orleans, Louisiana, the society sponsored a workshop entitled: Blueberries – Now and the Future. This workshop consisted of four excellent speakers summarizing the latest in nursery production, horticultural practices, breeding and development and the nutraceutical benefits of blueberries.

The first speaker, Dave Brazelton, the quintessential blueberry nurseryman and owner of Fall Creek Nursery, Lowell, Oregon, provided a "Perspective on the U.S. and Global Blueberry Industry." When Brazelton talks – researchers, growers, and even blueberry plants listen.

The second speaker, Dr. Bernadine Strik, Professor of Horticulture at Oregon State University, described the "Horticultural Practices of Growing Highbush Blueberries in the Ever-Expanding U.S. and Global Scene." Dr. Strik, an American Society for Horticultural Science Fellow, Class of 2007, has been responsible for testing and developing high density plantings that have revolutionized the way blueberries are grown around the world. Her production knowledge is detailed and frequently internationally sought.

Dr. Arlen Draper, the third speaker, received the Wilder Medal in 1997, for his efforts in small fruit breeding. His talk, "Blueberry Breeding: Improving the Unwild Blueberry", parodied the title of a famous manuscript of one of his predecessors, Dr. Fredrick V. Coville, namely: "Improving the Wild Blueberry" (1). Dr. Draper has been a major force in developing new blueberry varieties since he took over U. S. Department of Agriculture blueberry breeding in Beltsville, Maryland, in 1964. Almost every blueberry breeder in the world finds a way to consult or collaborate with Dr. Draper.

Dr. Wilhelmina Kalt, of Agriculture and Agri-Food Canada, Nova Scotia, gave the finale speech entitled, "Blueberries and Human Health: Review of Current Research." Dr. Kalt's research is quantifying what our grandmothers told us, that we should eat our fruits and vegetables. Her findings have vitalized the marketability of blueberries, and brought a much broader consumer audience to eating this nutritious fruit. Each of these speakers personifies the amazing activity of blueberries on a global scale. They explain why, during the past several years, this crop has defied the laws of economics. Crop production has increased, and yet the price of the crop has also increased.

So if you, dear reader, were unable to be

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present at this event, unlike the more than seventy-five attendees of this workshop, we say that a moment of history has passed you by – and you can only read about it in the subsequent manuscripts.

Literature Cited

1. Coville, F.V. 1937. Pp. 559-574. In: Improving the wild blueberry. U.S. Department of Agriculture, Yearbook of Agriculture. Govt. Printing Office, Washington D.C.

Light Interception in Evergreen Tree Crops

Horticultural tree crop yields tend to be linearly correlated with the percentage of photosynthetically active radiation (PAR) intercepted by the canopies, at least for part of the PAR interception range. Models of PAR interception by hedgerows have been used in the design of orchards for temperate tree crops, especially apples, but not for subtropical tree crops, such as lychee and macadamia. Subtropical crops need special consideration because of the latitudes at which they are grown, the specific shapes and dimensions of the hedgerows, and the evergreen habit, which requires an understanding of the entire annual cycle. We present outputs from a PAR interception model for solid rectangular and tapered hedgerows, based on a model of irradiation beneath blue skies. Annual PAR interception tends to decline as row orientation rotates from north-south to east-west, but with some exceptions for particular tree geometries, and declines slightly with decreasing latitude. Daily PAR interception is also affected by row orientation, with little seasonal variation for north-south rows but large fluctuations for east-west rows, including very high interception in winter and low interception in summer. Row orientation and tree shape greatly affect the distribution of PAR over the surface of the canopy. For example, the side faces of evenly spaced, symmetrical, identical north-south hedgerows are equally irradiated throughout the year, but there can be large seasonal differences in the relative irradiance of the north and south faces of the same hedgerows aligned east-west. The solid tapered hedgerow model tended to overestimate measured PAR interception by about 6%, but the overestimation seemed to vary with PAR interception, being greater at lower levels of PAR interception. A curvilinear relationship was found between the yield of macadamia in the Northern Rivers area of New South Wales, Australia in 1997 and the measured PAR intercepted by the trees, with an explained variance of 50%. Maximum yield occurred at about 86% PAR interception. Using modelled PAR interception, the explained variance of the yield was 34%. Model estimates of PAR interception were close to those measured and might be used to address a range of physiological questions concerning the canopy development of subtropical hedgerows. See Olesen, T. et al. 2007. Modelling the interception of photosynthetically active radiation by evergreen subtropical hedgerows. Austral. J. Agric. Res. 58:215-223.