



Ecological Landscaping: Horticulture's Exciting New Challenge

A new goal is described for horticultural professionals based on the need to create landscapes that enhance rather than detract from local ecosystem function. **Tallamy (p. 446)** explains why built landscapes must compensate for the loss of natural areas and describes the essential components of such landscapes. Plant choice is critical to maintaining the specialized relationships that comprise nature, particularly those between insects and plants, and can improve the ability of all built landscapes to sustain complex food webs, sequester carbon, manage watersheds, support pollinators, and connect habitat fragments. Accomplishing this in socially acceptable ways is one of horticulture's most exciting challenges.

Container Production of Two Western Milkweed Species

Hanson et al. (p. 482) examined the effects of container volume and fertilizer rate on growth and survival of two milkweed species common to western North America. Substantial increases in root and shoot growth were realized when plants were given the high fertilizer rate and when reared in the largest containers. Most narrowleaf milkweed plants developed a firm plug by the end of the growing season; showy milkweed plants developed a firm plug only when given the high fertilizer rate. Certain narrowleaf milkweed container sizes flowered during production. Outplanting survival rates were high (> 90%) for both species, regardless of treatment.

Decreasing Iron Chlorosis of Corn Grown in Soilless Media

Corn is widely grown in containers in greenhouses to facilitate phenotypic analysis. Iron chlorosis regularly occurs in maize varieties with fertilization and irrigation practices that result in dark green leaves of dicot species. **Parry and Bugbee (p. 490)** found that reducing phosphorus in fertigation solutions decreased iron chlorosis in maize, while still providing adequate phosphorus for rapid growth. They also observed an improvement in leaf greenness by using a ceramic substrate or decreasing the leaching fraction when

high phosphorus irrigation solutions were used. These findings can significantly improve maize growth and nutrition in controlled environments.

Antitranspirant Increases Watermelon Grafting Success

Watermelon plants grafted using the one-cotyledon splice method rely on moisture in the air for survival following grafting. **Dabirian and Miles (p. 494)** report that application of commercial stomata-coating and stomata-closing antitranspirant products, applied 1 day before grafting to both scion and rootstock seedlings, increased the survival of newly grafted watermelon transplants. Survival was 30% greater with the stomata-closing antitranspirant than the control (water) for 'TriX Palomar' grafted onto 'Tetsukabuto' or 'Emphasis' rootstocks. Stomatal conductance of scion and rootstock seedlings decreased after application of the stomata-closing antitranspirant, likely reducing transpiration.

Brassica Vegetables Screened for Clubroot Resistance in Oregon

Growing brassica varieties with resistance to the soilborne pathogen clubroot is an effective strategy to minimize crop loss. However, there are many clubroot pathotypes, and genetic resistance to clubroot may be pathotype-specific. In field and greenhouse studies, **Heinrich et al. (p. 510)** identified the dominant pathotype present in western Oregon using the European clubroot differential set and screened 21 commercially available varieties from 9 crops with purported resistance. Compared to a crop-specific susceptible check, 17 of 21 varieties had some resistance to clubroot, and of those, 15 were highly resistant ($\leq 15\%$ incidence with low disease severity).

Recycling Squeezed Grape Fruit Waste in Growing Media

Grape juice industries produce large amounts of squeezed grape fruit waste (SGFW). **El-Mahrouk et al. (p. 523)** investigated the use of SGFW compost as an alternative to a commonly used substrate (1 coir:1 vermiculite) for producing lemon basil. SGFW-based substrates were mixed with coir or vermiculite to form 13 different growing media. Pure SGFW was found unsuitable for seed germination and growth of lemon basil. Combining pure SGFW with vermiculite (1:1) resulted the highest seed germination and growth. Low-cost SGFW compost has potential for use as a growing medium when mixed with vermiculite.

Table Beet Variety Assessment in New York

Table beet production is increasing in New York in systems ranging from small, diversified farms to broad-acre fields. Profitability may be optimized by the selection of varieties based on consumer preference, yield, and disease susceptibility.

Cercospora leafspot (CLS) is a fungal disease affecting foliage quality that may result in defoliation, which makes mechanized harvest problematic. **Pethybridge et al. (p. 530)** evaluated horticultural characteristics and CLS susceptibility of popular table beet varieties. All varieties tested were of similar susceptibility to CLS except for the less-susceptible Ruby Queen. Varieties differed in foliage dimensions and in foliar and root biomass following in-ground storage.

Fish-derived Protein Hydrolysates Improve Lettuce Performance

Protein hydrolysates (PHs) are an important group of plant biostimulants that have received increasing attention due to their positive effects on crop performance and contribution to sustainability. In a growth chamber study, **Xu and Mou (p. 539)** found that drench application of fish-derived PHs significantly increased lettuce stem diameter, biomass, leaf number, relative water content, and succulence. PHs also significantly enhanced chlorophyll content and gas exchange. As plant biostimulants and fertilizer, PHs might have potential to be utilized for sustainable lettuce production.

New Product Label Proposed for Plant Lighting Systems

Electric lighting is widely used for plant production in greenhouses and controlled environments. Recent advances in light-emitting diode (LED) technology provide an array of novel lighting options. However, growers have been unable to compare technologies and LED options due to insufficient data on lamp performance metrics. **Both et al. (p. 544)** propose a standardized product label that facilitates comparison of lamps across manufacturers. Among other characteristics, the label would display information about

PAR efficacy, photon flux density output, and include graphs of the normalized photon flux density across the 300–900 nm waveband, and a horizontal distribution of the light output.

Knowledge and Perceptions of Invasive Species

Public perceptions of invasive species and their control often are obstacles to overcoming problems associated with them. **Waliczek et al. (p. 550)** found that college student generally had low knowledge scores related to identifying and estimating the damages associated with invasive species. The study found positive correlations between knowledge of invasive species and management strategies and instruction and awareness of invasive species. The study showed that educational efforts are needed and potentially could be a worthwhile investment in helping to manage invasive species.

American Juice Grapes in a Warming World

Increasing growing-season temperatures are challenging for color production by ‘Concord’ juice grapes. In a 4-year field trial comparing ‘Concord’ and ‘Sunbelt’ in eastern Washington, **Keller and Mills (p. 557)** found that ‘Sunbelt’ generally produced juice with higher red color, soluble solids, and titratable acidity. However, ‘Sunbelt’ yields often were considerably lower than ‘Concord’ yields, and conversion from hand pruning to minimal pruning did not consistently improve yields. Since the two varieties had rather similar winter hardiness, ‘Sunbelt’ might be used as a blending partner with ‘Concord’ as growing seasons become warmer even in regions with cold winters.