Spotlight

Winter-Killed Cover Crops Influence Nitrate Leaching

Although cereal grain cover crops can reduce nitrate leaching, few vegetable production fields are planted to winter cover crops in the coastal valleys of California. Most growers leave their fields in bare, fallow beds, because dealing with cover crop residues delays early planting schedules. To overcome this limitation, **Heinrich et al. (p. 502)** looked at the ability of a winter-killed cereal rye to reduce nitrate leaching. They found that this strategy is unlikely to be consistently effective due to the need to kill the crop when relatively young, resulting in the release of nitrogen from decaying residues back into the soil.

Machine and Hand Harvested 'Brown Snout' Cider Apple

Yield of 'Brown Snout' cider apple with an over-the-row small fruit machine harvester reached 87% that of hand harvest (when clean-up yield was included), and juice quality characteristics were not negatively affected **(Miles and King, p. 519)**. There were no differences due to harvest method on damage to spurs or limbs, and machine harvest used four times less labor than hand harvest (5 vs. 23 labor-hours, respectively). These results suggest that machine harvest may be suitable for cider apples if equipment is available and affordable.

Finishing Bedding Plants in Unheated High Tunnels is Rewarding but Risky

Currey et al. (p. 527) evaluated the growth and development of 10 spring bedding plant species finished in unheated high tunnels vs. heated greenhouses at two northern latitudes. The high tunnel environment exhibited greater temperature extremes than the greenhouse. Several cold-sensitive and cold-temperate species were lost during a cold temperature event. Surviving species exhibited some delays in flowering compared to a heated greenhouse, but many had higher quality characteristics such as more compact plants. Production of cold-tolerant annuals in unheated or minimally heated high tunnels appears to be a viable alternative for commercial producers aiming to reduce energy costs.

Novel Mulches Benign to Ground-Nesting Squash Bees

Squash have a high pollination requirement. Wild, ground-nesting squash bees, which nest in crop fields, provide a majority of the crop's pollination, but can be disturbed by management operations. In a 2-year study, **Splawski et al. (p. 535)** found squash bee nests within bare, newspaper, and newspaper and grass plots, indicating that these mulches did not prevent nesting. Newspaper and grass mulch had a positive effect on plant growth and fruit production. Mulches that utilize municipal waste materials may provide weed control strategies for squash plantings that are more benign to squash bees than cultivation or black plastic mulch.

Movable Light-Emitting Diodes Save Electricity in a Lettuce Factory

Li et al. (p. 546) report that movable LED system can halve the initial light source input while allowing the plants to obtain the desired illumination with minimal energy consumption. This vertical moving of the system reduced 15.0% to 18.4% of electricity than the fixed height treatments. The illumination schedule provided by the horizontal movement can halve the initial light source input while resulting in no differences in electricity consumption, morphological parameters, or phytochemical accumulation compared with the fixed counterparts.

Growth Regulators Improve Longevity and Leaf Chlorosis of Cut Lily and Gladiolus

Postharvest performance and quality of cut lilies and gladioli can be greatly reduced by leaf chlorosis. **Ahmad et al. (p. 560)** report that overnight pulsing with gibberellin (GA_{4+7}) + benzyladenine (BA) or a propriety mixture of GA_{4+7} and BA in a commercial floral preservative extended the vase life and prevented leaf chlorosis of cut lilies, and can be used by growers and wholesalers for maintaining quality of cut stems. The solutions were effective when applied during low-temperature storage.

Growth and Nitrogen Uptake of Turfgrass Irrigated with Reclaimed Water

A greenhouse experiment was conducted to determine if nitrogen in reclaimed water contributes significantly to turfgrass plant nutrition and to measure N-use efficiency and the effects of irrigation with reclaimed water on N leaching. **Fan et al. (p. 565)** found that N from reclaimed water can be beneficial for turfgrass growth and health, but the concentration of N in reclaimed water with advanced treatment would need to be at least 5 ppm. Two-fold greater N was leached with the synthetic N fertilizer treatment compared with reclaimed water.

Ornamental Sunflower Seedlings React to Daylength

Many sunflower varieties are sensitive to daylength during the first 3 weeks after planting. When planted in the short days of early spring or in the tropics, these varieties flower early, producing undesirably short stems and small flowers. **Wien (p. 575)** conducted screening trials over 5 years to test for this reaction. He grew sunflowers for the first 3 weeks in either 12- or 16-hour daylengths in a greenhouse, then transplanted them to the field. Of the 59 varieties tested, 31 varieties did not react to daylength, 26 varieties flowered significantly earlier after the short-day treatment.

Perceptions of Willingness to Pay for Texas Persimmon Fruit

Currently native food products are not marketed as such. **Glover et al. (p. 580)** conducted a market survey indicating whether texas persimmon fruit could become a niche native food product. Surveys at farmers' markets of variously sized communities in central Texas, combined with surveys of restaurateurs in the same area, where consumers observed the fruit, indicated a potential interest in and willingness to pay for the fruit of the texas persimmon. Results of the study found consumers were willing to pay a price comparable to other specialty fruit products.

Variety Choice Critical for Success of Overwintering Onions

Coolong and Williams (p. 590) report that long-day-type onions offer a better chance of success for overwintering production in Kentucky. While intermediate-day types are typically grown for spring-planted production, their survival rates were low when grown through the winter. When rowcovers were used as protection, survival rates increased significantly, but this also led to a large increase in bolting (flowering) of intermediate-day types. Meanwhile, survival of long-day types was increased through the use of rowcovers, without a concomitant increase in bolting.

Landscape Quality of Annuals and Perennials in Flordia

Landscape quality of 19 cool-season, 20 warm-season, and 4 perennial species was evaluated in central Florida in response to three nitrogen rates. **Moore et al. (p. 597)** reported that for most species, quality ratings of annuals and perennials fertilized at the lower N rates were similar in quality to plants receiving medium to high rates of N annually. In central Florida, the use of 2 to 4 lb/1000 ft^2 per year should maintain acceptable quality annual and perennial plants in the landscape.

Vines and Groundcovers Acceptable with Low Rates of Nitrogen

Fertilizer guidelines for landscape-grown vines and groundcovers are lacking. Aesthetic quality of five vine and groundcover species was evaluated when fertilized at five nitrogen rates. While quality of some species increased significantly as N rate increased, **Shober et al. (p. 604)** reported all plants supplied with at least 4 lb/1000 ft^2 N fertilizer per year maintained acceptable quality ratings. Screening of seven additional species confirmed that fertilization with 2 to 4 lb/1000 ft^2 N per year should be adequate to maintain acceptable landscape-grown vines and groundcovers in west-central Florida.

Hydroponics Lab Module Useful in a Greenhouse Management Course

Craver and Williams (p. 610) evaluated student learning from a hands-on hydroponics lab module in a greenhouse operations management course. They found that student confidence related to the production of crops in recirculating culture significantly increased after the experience. Additionally, they found that higher-order learning (HOL) skills, such as applying, analyzing, and evaluating information related to crop nutrient management, only significantly increased after the hands-on experience was completed. The evidence from this study supports the role of experiential learning in improving student confidence and fostering an environment where HOL is developed.

Peach Variety Performance in a Nordic Climate

Meland et al. (p. 618) evaluated 13 early maturing peach varieties on cold tolerant St. Julien A rootstock in Lofthus, Norway. Peach leaf curl limited production each year. Yields per tree were extremely low when compared to international standards (20 kg/tree). 'Riga' yielded most consistently with 5.74 kg/tree in 2009, 2.06 kg/tree in 2010, and 4.71 kg/tree in 2011. 'Harnas' yielded 6.93 kg/tree in 2010, but had very low yields in 2009 and no yield at all in 2011. None of the varieties tested are suitable for commercial production, but home gardens could consider utilizing Riga and Harnas.