

saw-type cutting mechanism, harvest recovery was measured for each production system. In general, harvesting costs for small greens can be reduced with the bandsaw-type cutter. Field losses were lowest for spinach and highest for collards; most losses were loose leaves cut by the bandsaw but not retained on the harvester. Turnips were the exception where uncut leaves represented a majority of the field losses. Results suggest total harvest losses are proportional to plant leaf size in small greens. No significant differences in harvesting characteristics were measured between smooth and semi-savoy spinach varieties. Next phase of harvesting research needs to focus on better retaining cut leaves and possible changes in cultural practices to accommodate better recovery. With these improvements, a universal greens harvester will be suitable for the mid-Atlantic region.

Fostering Environmental Stewardship and Community Action: Eco-Ventures at the EARTH Center

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The Eco-Ventures at the EARTH Center summer program provided an opportunity for youth in grades 5 through 7 to participate in outdoor, experiential learning with a focus on ecology and applied environmental stewardship. This 1-week summer program included hands-on learning through exploration, experimentation, debate and discussion. Youth participated in educational activities and discussions concerning environmental awareness and stewardship. The 2008 Eco-Ventures program also included agricultural and gardening topics to help participants understand how they can be environmental stewards in their own back yards. Youth worked with Extension staff to write and film public service announcements which were distributed to various media outlets. Participants developed personal environmental plans of action. Preliminary and post tests results indicated an increase in knowledge on topics addressed and a statistically significant increase in overall test scores. End of program observational evaluations indicated that youth developed teamwork, communication and decision making skills. A 3-month follow-up survey showed that youth had reached their goals, were successful in making personal changes in their environmental impact, and had influenced the decisions of their families, friends and schools.

Rooting of *Camellia oleifera* Abel Cuttings under Low Plastic Tunnels

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Camellia oleifera Abel (tea oil camellia) is an important woody plant for edible oil production in southern China. Grafting is the only method for its clone propagation and the demand for elite cultivars is far beyond the quantity from limited grafting regeneration. One-year-old shoot cuttings were collected from an elite cultivar in a plantation and prepared with various hormones and concentrations. All cuttings were inserted into the well-prepared field beds, which were completely soaked and covered with plastic film for moisture retention. During the experiment from March to July, no additional water was applied for the rooting of cuttings. Hormone is needed for the rooting of tea oil camellia cuttings and all treated cuttings had higher rooting percentage than that of the control. The highest rooting rate, 55%, was observed under the treatment of Guoguang hormones at 1,000 mg·L⁻¹. Rotting quality was evaluated using the total root length and the better root quality, 105.1 cm, was produced under the treatment of ABT #1 at 3,000 mg·L⁻¹. Both hormone types (liquid and powder) and concen-

trations (1,000, 3,000, and 8,000 mg·L⁻¹) did not have significant effect on rooting rate and root quality. Double dips with both liquid and powder hormones had no advance for rooting of cuttings. All treatments under this experiment produced rooting percentage from 22.5% to 55%, significantly lower than later commercial production at average 90% with Guoguang hormones at 3,000 mg·L⁻¹. This lower plastic tunnel usually keeps moisture for months in the field and could be applied to cutting propagation for other evergreen woody plants.

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Incidence and Severity of Foliar Diseases in Five Varieties of *Zinnia*

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Zinnia remains very popular as a cut flower, and local growers are seeking to expand into these markets as part of their direct marketing and agri-tourism efforts. This study measured regional differences in varietal performance in the coastal plain and piedmont regions of New Jersey. Five varieties of *Zinnia elegans* 'Benary's Giant', 'Oklahoma', 'Peppermint Stick', 'Whirligig', and 'Zowie! Yellow Flame' were included in this study. Performance ratings for production of cut flowers suitable for sale and disease incidence of powdery mildew and bacterial leaf spot were compiled. A randomized complete-block design, with 15 plants per experimental unit, was repeated at the Rutgers NJAES Agricultural Research and Extension Center in Bridgeton (coastal plain) and the Rutgers NJAES Snyder Research and Extension Farm in Pittstown (piedmont), testing the null hypothesis that there would be no difference in disease tolerance between varieties. *Zinnias* were transplanted into the field on 17 May 2006 in Bridgeton and 26 May 2006 in Pittstown. No fungicides were applied during the growing season. The Horsfall-Barrat rating system was utilized for each harvest (19 July to 1 Sept.), and rating scores in the field were determined by the same individuals each week. The two farm location ratings were consistent within their locations, but differed from each other. Bacterial leaf spot was more prevalent at the start of the season, while powdery mildew severity increased dramatically late in the season. Preliminary results revealed that 'Zowie! Yellow Flame' exhibited a higher degree of bacterial leaf spot, but a much lesser degree of powdery mildew when compared to the other varieties. In addition, 'Benary's Giant', the industry standard, displayed no distinctive degree of disease tolerance versus the other varieties. Additional statistical analysis will be conducted to determine other varietal differences.

An Analysis of Urban Tree Planting Programs and Nursery Production Relationships

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Urban tree planting programs, particularly those managed by nonprofit organizations, work to improve communities by involving