

**Equipment and Technology Needs
for
Small and Midsized Farmers
Emerging for the Local Market**

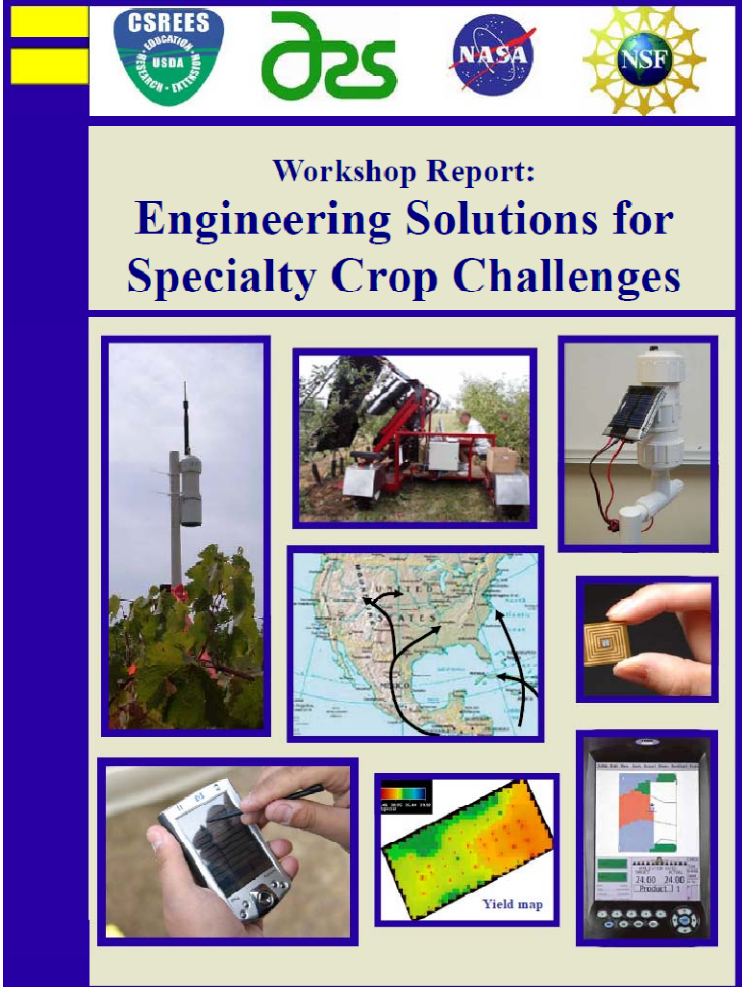
**National Value Added Agriculture Conference
4-June-2009**

Major Challenges

- Labor Cost, Availability, Quality
- Efficient Use of Inputs
- Appropriate Equipment Solutions
- Local Processing/Packaging
- Environmental Footprint
- Product Quality/Safety

Technologies

- Sensors
- Automated Systems
- Economic and Bio-Growth Models
- Internet and Social Networks



The image shows the cover of a workshop report. At the top, there are four logos: CSREES (USDA, EDUCATION, RESEARCH, EXTENSION), a green stylized logo, NASA, and NSF. Below the logos, the title "Workshop Report: Engineering Solutions for Specialty Crop Challenges" is written in blue text. The cover features a grid of nine images: a weather station on a vine, a red harrow in a field, a white sensor device, a map of the United States with arrows pointing to the West and South, a hand holding a small circuit board, a hand holding a mobile phone, a yield map with a color scale, and a mobile phone displaying a data screen.

“Engineering Solutions for Specialty Crop Challenges”
April 24-25, 2007, Arlington VA.



STS Series Combines
 High-Octane Harvesting





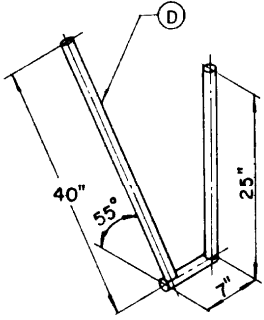


Sustainable Agricultural
Machinery Developments
Pty Ltd (Australia)

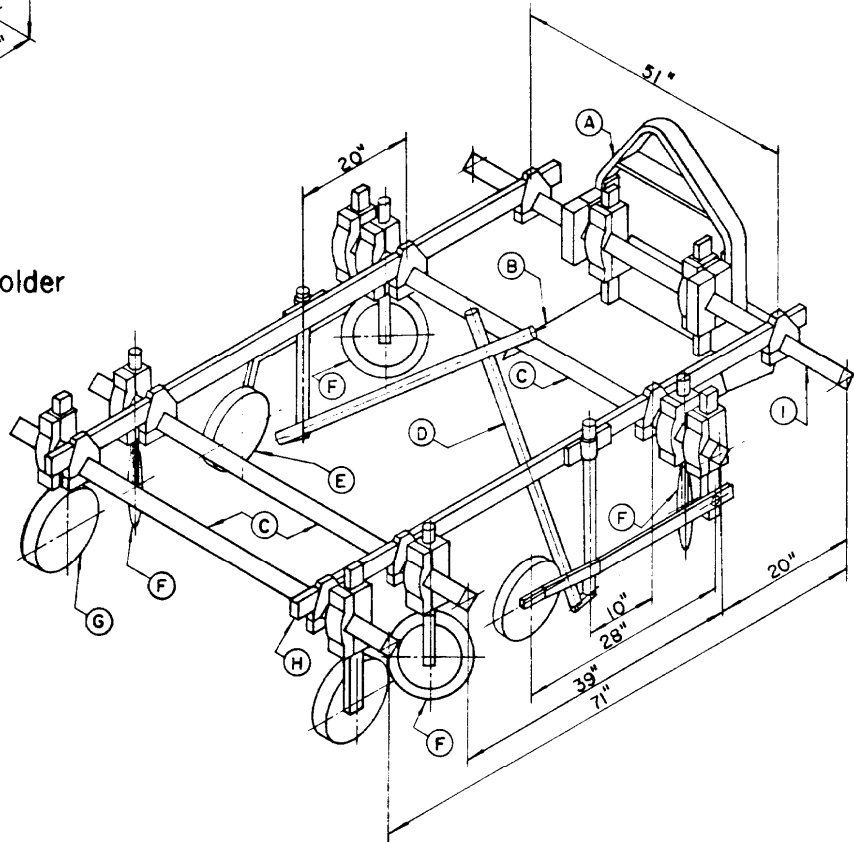


Family Farm Series Publications: Vegetable Crop Production

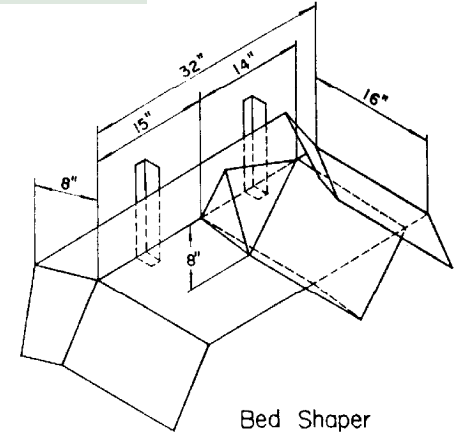
Plastic Tunnel And Mulch Laying Machine



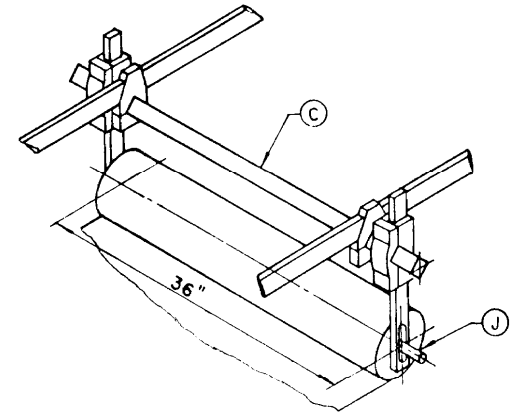
Detail of
Plastic Roll Holder



Plastic Tunnel and Mulch Laying Machine



Bed Shaper
with Furrow Former



Mulch Layer Attachment



Small-Scale Combine Harvester

“A small combine harvester of a compact and light weight design realizes efficient harvesting of crops even in small fields. These harvesters have contributed to labor saving for farmers. The design has been fully reviewed and revised in order to achieve quick harvesting with ease.”

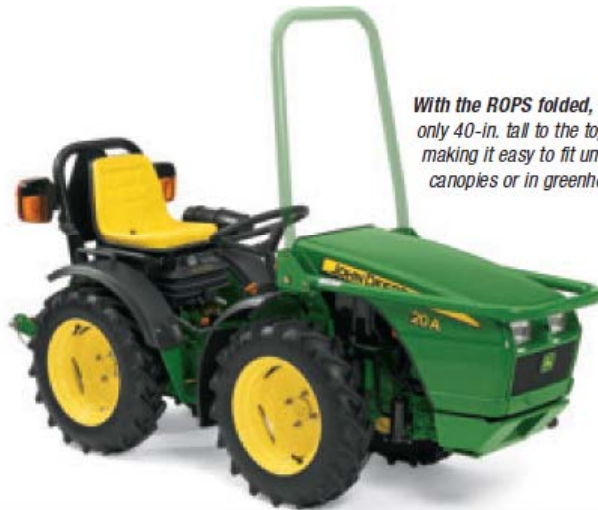


Small-Scale Rice Transplanter

“A small rice transplanter is useful when moving along narrow pathways and working in small fields. The compact and light weight design allows for easy operation by beginners and the aged.”



With the ROPS folded, the 20A is only 40-in. tall to the top of the seat, making it easy to fit under low canopies or in greenhouses.













Double arm amputee Christian Kandlbauer shows how realistic prostheses can be.



In the middle of the Computer Science and AI Lab at MIT lies an indoor garden where robots are busy growing tomatoes.



PickerTECH™

The logo for PickerTECH features a stylized red apple with a green leaf, positioned above the company name. The 'P' in the logo is a white circle with a red dot in the center.



Photo courtesy of www.plasticulture.org



Photo courtesy of Martin and Christa Stosiek, Markristo Farm, Hillsdale, NY



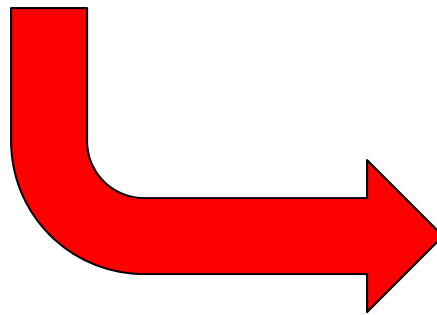
Photo courtesy of Ledgewood Farm



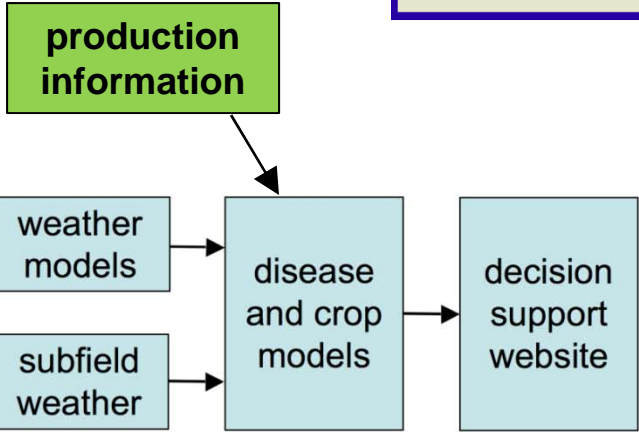
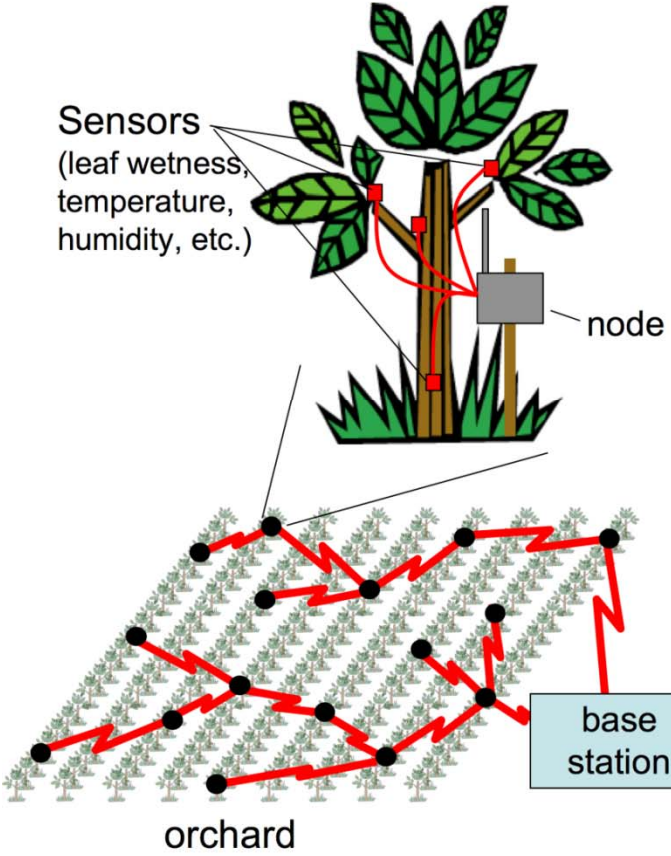
Photo courtesy of www.haygrove.co.uk

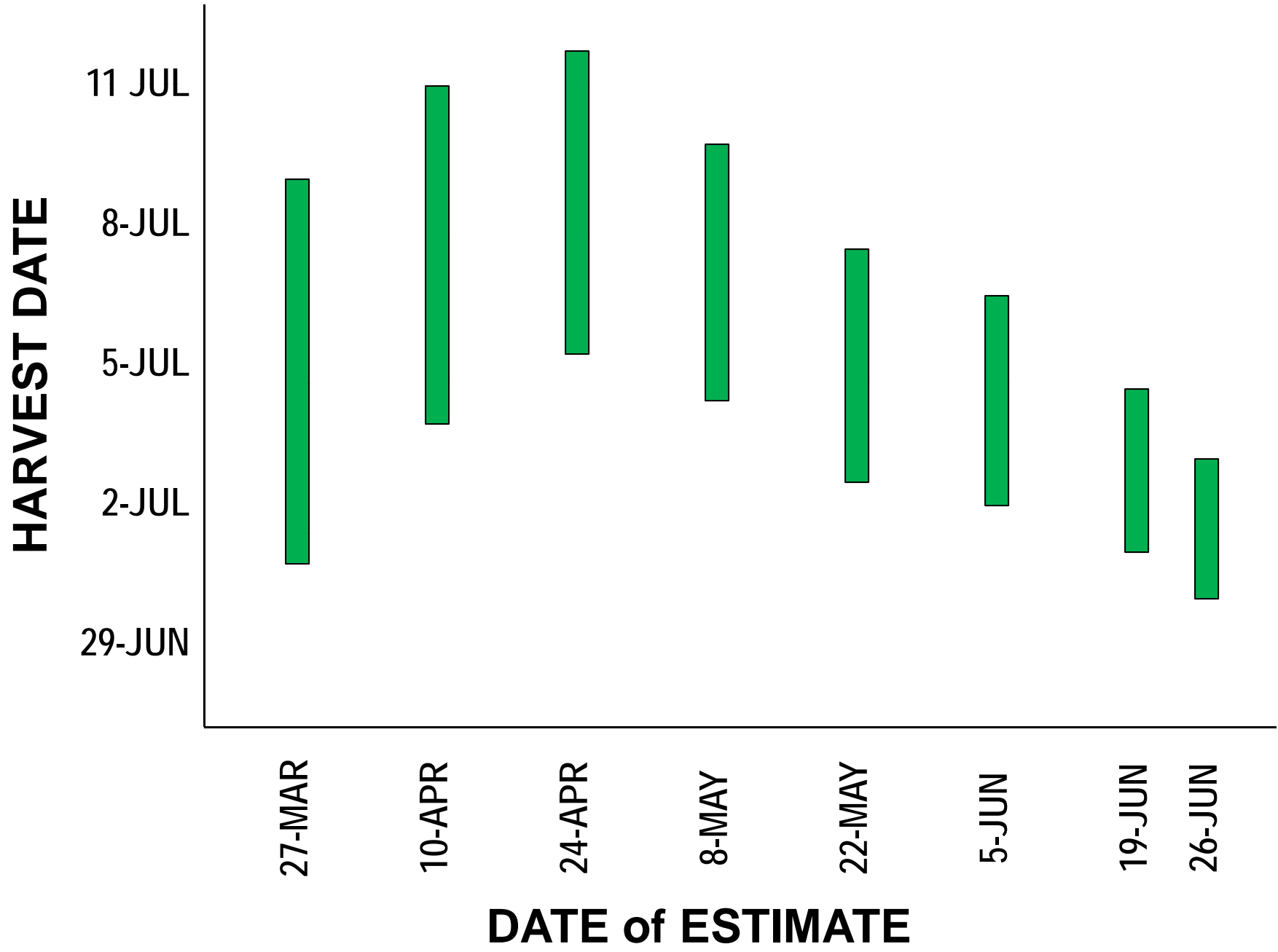


Vermont Mobile Poultry Processing Unit



Fruits and Vegetables







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Tech Look Forward ...

- Small & specialized equipment will be more widely available
- Predicting & Estimating will be more accurate
 - Harvest timing, quantity and quality will be easier and more accurate
 - Vulnerability to pests will be more accurate
 - Field conditions (field readiness) will be more accurate
 - Identifying market needs/opportunities
- Coordinating and planning in complex multi-crop portfolios will be easier
- Monitoring crop conditions will be easier and more accurate
- Extended production seasons
- Labor intensive processes will be reduced
- Packaging and processing will be easier and more timely
- Learning, problem solving, innovation (and commiserating) will be easier

Thank You!

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