Elderberries
How to Get That Yield !

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Your Speaker

- Patrick Byers
  - University of Missouri Extension
  - Farmer
- Co-director of the Missouri Elderberry Development Program (1997-date)

Our Location

- Climate
  - Avg min temp: -7.2˚ C (Jan)
  - Avg max temp: 30.5˚ C (Jul)
  - Avg annual rainfall: 1143 mm
- Soils – silt loam, good for agriculture
- Growing season - April 12 to October 30 (200 growing season days)

Missouri

Outline

- Overview of productivity
- Selection of cultivars
- Environmental issues
- Site selection
- Cultural practices and productivity
- Pest management and productivity
- Harvest management and productivity

Overview of Productivity

- What is productivity? Maximizing the production of fruit that meets appropriate quality standards
  - Genotype
  - Environment
  - The expertise of the elderberry farmer
- From a farm standpoint, productivity is just one component of profitability
  - Efficiency is just as important
  - Financial management is just as important
  - Successful marketing is just as important

Selection of Cultivars

- Plant characteristics
- Adaptation
- Pollination issues
- Yield
- Pest resistance
- Intended use


LAKE GEORGE
LAKE GEORGE
Single blossoms produce uniform crop


Side blossoms produce later crop

Environmental Issues

- Macroclimate vs microclimate
- Freeze and frost damage
- Excess rain, pollination issues
- Hail
- High temperatures

Regrowth following hail damage

Site Selection

- Full sun
- Protected from high winds
- Well drained soil

Cultural Practices

Cultural Practices

- Planting layout
  - Bermed plantings are helpful if soil drainage is an issue
  - Plant spacing

Cultural Practices

- Pruning
  - Annual removal of all shoots can improve harvest efficiency
    - Larger, fewer flower cymes
    - Concentrated ripening period
    - Implications for eriophyid mite and SWD management?
    - Will this work in northern growing areas?

Cultural Practices

- Fertility management
  - Soil test initially
  - Nitrogen – at least 80 kg N/hect
  - Other nutrients as indicated by soil test
  - Foliar sampling to monitor nutrition

Cultural Practices

- Irrigation
  - Elderberries are not drought tolerant plants
  - Drip or trickle irrigation systems work well – 18mm tube with emitters every 18-24 inches
  - Water needs: 38-50mm per week

Cultural Practices

- Weed management
  - Control perennial weeds before planting
  - Plastic mulch for young plantings
  - Mature elderberry plantings
    - Weed barrier fabric
    - Mulching
    - Hand removal
    - Herbicides

Pest Management

Pest Management

- Eriophyid mites

Pest Management

- Spotted wing drosophila

Pest Management

- Japanese beetle

Pest Management

- Other insect pests

Pest Management

- Elderberry rust

Pest Management

- Other elderberry diseases

Pest Management

- Elderberry viruses

Pest Management

- Birds

Harvest Management

Harvest Management

- Let’s discuss the harvest decision process…

Harvest Management

Terry Durham's Destemmer

Harvest Management

Harvest Management

- Yields
  - Year 1: 1374 kg/hect.
  - Year 2: 3741 kg/hect.
  - Year 3: 6300 kg/hect.
  - High yields: 12723 kg/hect.

In Conclusion…

- Productivity is the intersection of genetics, environment, and grower experience
- Productivity is not the same as profitability – remember efficiency
- Design a planting with productivity in mind
- Choose cultivars carefully
- All aspects of management impact productivity
- Pest management and productivity
- Harvest management and productivity

Comments or Questions?

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