



**2023 North American
Cranberry Research
and Extension Workers
(NACREW) Conference**



*Proceedings Addendum:
Cranberry False Blossom Disease Discussion Session*

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Session Overview and Participants

DATE: August 22, 2023, 10:30am-12:30pm

LOCATION: Eisenhower Room, Seaview Hotel, Galloway, New Jersey

GOAL: Discuss the current knowledge gaps of the reemerging cranberry false blossom disease and identify needs and research priorities for the cranberry community to ensure a sustainable cranberry industry.

MEETING FACILITATORS:

Jeffrey Neyhart, USDA ARS

Lindsay Wells-Hansen, Ocean Spray Cranberries

AGENDA

Cranberry false blossom disease (CFBD) was selected as the 2023 NACREW working group topic due to increasing concerns about its re-emergence in some US cranberry production states. This disease nearly devastated the cranberry industry in the 1920s when it spread to several regions in the US and Canada. Breakout groups involving 5-6 people were assigned various topics for 30 minutes of discussion (ex. vectors of false blossom, pathogen spread, management, etc.). Following breakout groups, the entire group continued the discussion to determine topics

ATTENDEE COMPOSITION

State/Province/Region	Number of attendees
Wisconsin	18
New Jersey	12
Quebec	10
Massachusetts	7
Oregon	3
British Columbia	2
Washington	1

Chile	1
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Domain	Number of attendees
Industry	17
University	29
Government (e.g. USDA)	6
Growers	1
Non-profit	5

Research Priorities Identified

Based on the discussion during the 2023 NACREW meeting, the top 5 research priorities were identified:

1. **Vector Phenology and Behavior:** Understanding the phenology, behavior, and life stages of vectors responsible for transmitting CFBD is crucial for developing effective management strategies.
2. **Cultivar and Variety Effects:** Investigating the role of cultivars and varieties in disease expression, resistance mechanisms, and interaction with vectors will aid in identifying resistant cultivars and implementing varietal-specific management practices.
3. **Disease Management Strategies:** Researching thresholds for vector control, resistance management programs, and exploring chemical control options are essential for developing comprehensive disease management strategies.
4. **Environmental Factors and Disease Spread:** Studying the influence of environmental factors such as climate, canopy structure, and geographic location on disease spread and vector behavior will provide insights into environmental management practices.
5. **Grower Engagement and Education:** Prioritizing education and outreach efforts to improve grower identification of vectors and infected plants, understanding grower perspectives and challenges, and developing effective removal methods for infected vines are critical for successful disease management at the grower level.



Attendees of the 2023 North American Cranberry Research and Extension Workers Conference and participants in the Cranberry False Blossom Disease discussion session

SUMMARY OF DISCUSSION/RESEARCH QUESTIONS

Disease Phenology and Transmission

Vector Phenology

- What is the phenology of vector(s) across different locations?
- Where are most of the vectors located, and when do they come and go in different regions?
- At what life stage(s) do vectors acquire and transmit CFBD?

Pathogen Survival and Transmission

- How long does CFBD survive in plants?
- What is the longevity of a cutting infected with CFBD?
- Can plant-to-plant transmission occur? Do cranberries root graft?
- Are there additional vectors besides BNLH?
- Are mycorrhizae affecting transmission of CFBD from plant to plant?

Environmental Factors

- How do abiotic factors contribute to symptom expression, infection, vector behavior, plant survival, and overall plant health?
- How does geographic location contribute to vectors and/or disease spread?

- How does canopy structure affect disease transmission and vector behavior?

Cultivar and Variety Effects

Expression of Symptoms and Latency Period

- Does symptom expression differ depending on cultivar?
- Does the latency period differ depending on cultivar?
- How does each variety respond to vectors and phytoplasma?

Varietal Resistance and Susceptibility

- What is the mechanism of resistance in certain cultivars?
- How does variety play a role in disease development and vector interaction?
- Are all varieties affected by CFBD?

Disease Management and Control

Thresholds and Management Strategies

- Need to establish a threshold for the vector(s) and establish a Resistance Management Program.
- How do management practices affect feeding susceptibility of vectors?
- What are the economic losses associated with CFBD infection and management?

Chemical Control and Testing

- What testing is available, and how quickly can results be obtained?
- Are propagators testing new varieties for CFBD before shipping, and what does this protocol entail?
- Are there chemical control options for eradicating infected plants?

Education and Outreach

Grower Engagement and Education

- Should provide identification guides/classes for growers to improve identification of the vector and CFBD-infected plants.
- Why are growers reluctant to remove infected vines?
- What's the best method to remove infected vines?

Regional Collaboration and Quarantine Measures

- Are the disease and vector present in all growing regions to some extent?
- Is quarantine an option on different scales?
- How should we manage beds with and without the disease in the same location (farm and/or region)?

FALSE BLOSSOM AND BLUNT-NOSED LEAFHOPPER REPORTS

When attendees were surveyed about the occurrence of false blossom phytoplasma and the blunt-nosed leafhopper in their respective states/regions, the following responses were collected.

State/Region	False blossom disease	Blunt-nosed leafhopper
New Jersey	Yes, common	Yes, common
Wisconsin	Yes, not common	Yes, not common
Massachusetts	Yes, not common	Yes, not common
Oregon	No, unsure	No, unsure
Washington	No, unsure	No, unsure
Quebec / New Brunswick	Not observed	Yes, every farm
British Columbia	No, unsure	No, unsure
Chile	No, unsure	No, unsure