Wild Blueberry Commission OF MAINE

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MAINE WILD BLUEBERRY INDUSTRY RESEARCH AND EXTENSION PRIORITIES November 2019

Cropping System Management

1. Develop and incorporate new and existing growing degree day models specific to wild blueberry management, weed management, insect management, and disease management.

2. Determine most effective way to use additional data reporting tools in conjunction with growing degree day based on-farm integrated pest management.

3. Understand the influence that increasing climate variability has on wild blueberry plant development stages and integrated crop management systems in order to improve crop yield and profitability.

4. Determine the drought tolerance of the wild blueberry system and techniques to improve the capacity of the system in buffering increasing rainfall anomalies.

5. Develop economic tools to determine management practices to improve crop profitability.

Plant Nutrition – Nutrient and Carbon Cycling

1. Understand the leaf physiology and nutrient reabsorption process during the fall of non-cropping year and the impact on crop growth and yield during the following crop year.

2. Understand the temporal variation and spatial heterogeneity in crop water use and nutrient needs, and develop new techniques to improve yields and profitability.

3. Develop crop fertility recommendations and techniques based on plant nutritional needs at significant plant development stages to improve wild blueberry production such as:

    - Reduction of nutrient binding in the soil.
    - Promoting root and rhizome growth.
    - Improving winter hardiness.
    - Improving fruit quality and yield.

4. Determine how current management practices for example, pruning methods, and fertilizer use affect nutrient cycling and plant fertility.

5. Study nutrient and carbon cycling between wild blueberry plants the organic pad and soil including the mycorrhizal association.

Pest Management Systems

1. Expand the knowledge of the biology and ecology and management of existing and potential wild blueberry pathogens and diseases including *Monilinia, Botrytis, Valdensia,* and *Septoria,* and other leaf spot diseases.

2. Improve disease modeling and risk estimation associated with different plant development stages to determine proper spray timing for mummy berry and Botrytis blossom blight and leaf spots.

3. Research and develop new or revised cultural, biological and synthetic methods for more effective control of insects, weeds and diseases.

4. Study the biology and ecology of beneficial insects and insect pests.

5. Determine best management practice to manage pests and crop while protecting pollinators.

6. Revise/update Integrated Crop Management protocols including monitoring and management thresholds with changes in crop protectant use.

7. Evaluate pest management options and to screen for effectiveness and prevent resistance.

Production and Processing

A. Food Safety

1. Investigate new opportunities to maintain and improve post-harvest food safety and quality of wild blueberries.

2. Explore microbial communities within packing and processing spaces and potential relationship to risk of *Listeria* contamination.

3. Research the potential effects of climate variability and crop management on pre-harvest food safety of wild blueberries.

4. Investigate quality control processes and food safety risks for fresh pack related to GAP/FSMA.

B. Value-added

1. Investigate pre and post-harvest treatments for fresh pack berries.

2. Explore best management practices required to produce high quality berries for value-added markets.

Education

1. Provide research results and recommendations through the wild blueberry website, social media, wild blueberry meetings, and field days.

2. Provide best management and site-specific practices for wild blueberry growers.

3. Offer food safety training for fresh pack operators and food processors to comply with federal and state standards.

4. Educate growers about wild blueberry production practices, inputs, and risk management to improve profitability.

5. Provide a summary of fresh pack post-harvest treatment research to date.

6. Educate growers on value-added options, with consideration to business planning and marketing.