



WILD BLUEBERRY ADVISORY COMMITTEE TO THE UNIVERSITY OF MAINE

2026 - 2027 WILD BLUEBERRY RESEARCH AND EXTENSION PRINCIPLES AND PRIORITIES

Guiding Principles for Wild Blueberry Research

- 1. All research and Extension activities should seek to optimize net returns for growers and processors.**
- 2. All research and Extension should seek to deliver concrete and practical recommendations.**
- 3. All research and Extension should consider and serve the diversity of business scales and models.**

Major Focus Area

Utilize existing resources and research to rapidly deliver actionable, practical, and cost-effective tools, recommendations, technologies, fact sheets, and guidance to reduce costs and improve profitability.

Extension and Outreach

1. Gather, leverage, and disseminate existing relevant knowledge and research to educate the industry on current best practices and provide applied and cost-effective management recommendations on topics described below.
2. Promote farm economic tools and provide cost–benefit insights on management options.
3. Deliver clear, concise, understandable, and easily adaptable recommendations and summaries across multiple formats.
4. Ensure outreach is accessible to all growers, regardless of experience or location.
5. Support growers in understanding and complying with updated product labels and mitigation requirements.

Plant Nutrition

1. Improve understanding of nutrient use and availability in soil and tissue to inform improved wild blueberry soil and tissue test-based recommendations to account for:
 - a. cost-effectiveness
 - b. application timing, rates, and methods
 - c. nutrient ratios
 - d. soil type (and adoption of current sample depth/horizon industry standards)
 - e. crop year vs. non-crop year
2. Evaluate methods of optimizing supplemental plant nutrition under present day management conditions and climate, focusing on:
 - a. cost-effectiveness
 - b. application method, rates, and timing (e.g., fall prune, spring crop)
 - c. macro and/or micronutrients
 - d. granular and/or foliar fertilizer
 - e. fields with and without irrigation

3. Investigate plant physiological responses to stressors and identify potential plant responses and interactions between fertility, disease, and environmental stress (e.g., frost, drought, heat).

Integrated Pest and Pollinator Management

1. Optimize control programs for new and existing pests (insects, disease, weeds).
 - a. Develop core recommendations to build a “maintenance program.”
 - b. Update or develop economic thresholds based on current yields and market value.
 - c. Update or develop degree day or alternative models to improve long-range forecasting.
2. Establish MRL residue decline curves for new and existing materials, including generic options.
3. Investigate tools (organic and conventional) for better management of Spotted Wing Drosophila.
4. Determine optimal leaf disease materials and application timing.
5. Determine efficacy and cost-effectiveness of promising, low-risk, and newly registered products.
6. Develop cost-effective rotation recommendations for resistance management.
7. Develop a single source of holistic and concise pollinator recommendations that consider:
 - a. Optimal stocking timing and duration
 - b. Colony size, density, and placement
 - c. Best practices for managed species used
 - d. Cost-effectiveness (ROI)
8. Develop recommendations for core elements of effective wild bee management.
9. Update information on cost vs. benefit and use of honey bees, bumble bees, others (e.g., stocking location and density, factors impacting species’ cost-effectiveness).

Climate Change

1. Increase plant resiliency and operationalize tools for short-term/immediate use.
2. Deliver recommendations for cost-effective irrigation technologies and techniques for drought, extreme heat and/or frost risk management.
 - a. Assess feasibility and ROI based on water source, soils, location, food safety regulations, and operation scale.
 - b. Define both optimal and minimum crop water needs (i.e., frequency, volume, timing).
3. Refine and deliver research-based mulching recommendations that:
 - a. Educate producers on the risks associated with mulching, and define best management practices for spreading, application (when and where appropriate), timing, mow-down, processing, and harvesting to mitigate risks.
 - b. Define and mitigate mulching effects on plant nutrition (e.g., Nitrogen immobilization).
 - c. Account for differential effects of mulch source (tree species) and size on (e.g.) longevity, fertility, pH, water holding capacity, mycorrhizae, plant growth, and pest dynamics.

Harvesting and Processing Technology

1. Develop mechanization, automation, and technology-based harvest and processing solutions across business scales that:
 - a. Increase profitability through harvesting and labor efficiency gains and the reduction of loss.
 - b. Prevent, detect, and control food safety hazards.

- c. Utilize the application of existing technologies.
- d. Deliver mechanization, automation, robotics, and precision agriculture technologies with potential for rapid industry adoption.

Food Safety

1. Develop novel solutions that minimize foodborne pathogens in harvested, market-read wild blueberries with minimal to no adverse effect on sensory factors and quality.
2. Deliver fruit surface treatment products and recommendations to reduce microbial load and improve quality metrics.
3. Investigate possible points of contamination in the supply chain (farm to fork).
4. Investigate microbial loads and prevalence of pathogens on fruit, soil, and irrigation water.

APPENDIX

RESEARCH SUPPLEMENT - Additional Guidance for Wild Blueberry Researchers

Consider including as response variables, producers' key benchmarks of sprout year crop potential, fruit set, carried fruit efficiency, and marketable fruit.

1. Increase sprout year crop potential (flower buds/acre) by developing management guidelines to improve stem density and production of flower buds.
 - a. Understand parameters controlling plant dormancy, enhance rhizome spread, and develop techniques to improve stem coverage.
 - b. Develop integrated plant health, nutrition, and pest (insect, disease, and weed) management protocols to optimize crop physiology, mitigate growing season drought stress, and improve dormant season winter hardiness.
2. Improve fruit set through advancements in plant health, mitigation of environmental risk, and enhancement of pollination efficiency.
 - a. Develop protocols to maximize fruit set and mitigate drought stress through advancements in crop nutrition and physiology.
 - b. Develop novel techniques and protocols to mitigate frost damage to floral tissue.
 - c. Enhance crop and land management techniques to protect pollinator health – commercial and native – and the mutual sustainability of pollinators and the wild blueberry industry.
3. Improve carried fruit efficiency by developing precision crop load management techniques which support crop physiological needs at each fruit development stage.
 - a. Develop integrated plant health, nutrition, and disease management protocols to reduce fruit abortion by mitigating growing season drought stress.
 - b. Determine genetic and physiological factors limiting fruit sizing & quality (color, firmness, flavor, and ripening).
 - c. Understand and mitigate fruit physiological response to heat stress.
4. Maximize marketable fruit by improving pre-harvest retention & quality, reducing harvest shrink, and developing post-harvest techniques to maintain quality to market.
 - a. Assess/update protocols for monitoring of pests and diseases to inform management decisions and the development of action thresholds.
 - b. Evaluate new or revised cultural, biological and synthetic methods for more effective control of insects, weeds and diseases.
 - c. Develop whole crop protocols to improve fruit retention, color, firmness, and flavor for frozen, value-added, and fresh pack.
 - d. Develop novel harvest technology to minimize harvest shrink, reduce fruit damage, and to commercialize across scale of production.
 - e. Develop novel post-harvest environmental, material, and mechanical solutions that reduce post-harvest shrink and damage to berries, maintain color, firmness and flavor, and improve processing and fresh pack line efficiency.