

**2020 EXTENSION ADVISORY GRANT PROPOSAL
STATE HORTICULTURAL ASSOCIATION OF PENNSYLVANIA**

Title: Rapid Apple Decline Working Group Meeting

Personnel:

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Funding period: May 1, 2020 – April 30, 2021

Amount requested: \$3,579

Justification:

High density apple orchards planted with dwarf apple trees have become the standard for growing fresh market apples due to the quantity and quality of fruit produced on a per acre basis. Over the last several years, there have been reports in apple growing regions across the U.S. and Canada about an unusual rapid or sudden decline of young, dwarf apple trees in high density orchards, typically when trees are in their prime, or about to be in their prime. Hundreds, thousands of trees have been affected in orchards. The problem stems from damage and death of stem tissues around the graft union; the roots are always healthy. Typical pathogen culprits often linked to causing such decline, such as *Phytophthora* spp., *Erwinia amylovora*, tomato ringspot virus and *Phytoplasma* spp., have been ruled out. Tree stress is an important factor as indicated by trees succumbing to opportunistic fungal pathogens; however, isolating the specific stressor, such as drought, winter injury, or another unknown factor, has been difficult to determine. The possibility of these stressors is becoming more frequent due to climate change where extreme weather events are increasing. In addition, a previously undescribed organism may be also playing a role in the mysterious apple decline that may favor this changing environment. Consequently, there is no one unifying theory solving the mystery, and it is most likely a yet-to-be-defined complex of factors contributing to the syndrome. Regardless, the problem keeps occurring and does not appear to be abating, leading to considerable concern about the sustainability and resiliency of current high density orchard systems. In addition, members of the apple growing community have expressed they have never encountered a phenomenon like this with dwarf apple trees in all their years of growing fruit.

The purpose of the Rapid Apple Decline Working Group Meeting is to hold a two-day formal meeting, which will gather members of the apple industry community in the U.S. and Canada, such as researchers, Extension, regulatory, practitioners, growers, packers and nurseries, to share the latest research results and field observations, and establish transdisciplinary research, extension and regulatory priorities necessary for understanding the cause(s) of the unusual tree decline, which ultimately will lead to a mitigation strategy. Although various research groups have been staying in touch informally about the rapid apple decline problem, merging these individual orbits is important, as well as bringing in additional people with different expertise and from other apple growing regions. To ensure the viability and sustainability of the apple industry in the United States and Canada, a timely and complex approach from growers, extension specialists, researchers and State and Federal regulators is needed to solve this important problem.

We are confident this will be a successful event since the PI, Dr. Sherif Sherif (VA Tech) and Mr. Mark Sutphin (VA Tech Extension) hosted and financed a one-day Rapid Apple Decline Summit on December 4, 2019 at the Virginia Tech Alson H. Smith Jr. Agricultural Research and Extension Center in Winchester, VA. Seventy people attended in-person with an additional 20 via video conferencing. Participants were from PA, MD, VA, NY, NJ, NC, OH, OR, MI, MA, WA and Canada. During the summit, we had a conversation about the apple decline problem by learning about what groups are studying in their respective regions about rapid apple decline, and heard first-hand accounts from growers, nurseries, packers and practitioners. Participants had the opportunity to suggest needed projects for the 2020 season for gathering preliminary data, which will make future grants competitive. However, we just barely scratched the surface of what is needed during our one-day summit.

Objective:

The primary objective of the Rapid Apple Decline Working Group Meeting proposed in this grant is to build off of our one-day Rapid Apple Decline Summit in December 2019 by holding an extensive two-day formal meeting, which will gather many of same participating members of the of the apple industry community in the U.S. and Canada, to share the latest research results and field observations from the 2020 season and establish transdisciplinary research and extension priorities necessary for understanding the unusual tree decline. By establishing priorities, our working group will be able to be competitive for large federal grants, such as the USDA Specialty Crop Research Initiative funding program.

Procedures and Expected Outcomes:

During the summer of 2020, a formal Rapid Apple Decline Working Group meeting will be held at the Penn State Fruit Research and Extension Center in Biglerville, PA. An invitation to participate in the working group will be distributed via email to all regions with active apple research; as well as using stakeholder list serves. Participants will include key research, extension and regulatory personnel from USDA-ARS, USDA-APHIS, Penn State University, Washington State University, Michigan State University, Virginia Tech, North Carolina State University, state agricultural departments and Agriculture and Agr-Food Canada. Stakeholders will include tree fruit growers and packers from PA, NY, NC, VA, WA and Canada; and nursery representatives from PA and WA. This list is incomplete and anyone wishing to attend, regardless of state/region/organization, is welcome to attend. In total, we anticipate at least 50 - 70 participants will be able attend the working group meeting.

The meeting will be held over the course of two days. To accommodate those unable to travel, Zoom conferencing will be utilized at the host facility. On Day 1, participants will deliver relevant presentations encompassing apple decline research, field observations, stakeholder concerns or other critical information. On Day 2, the group will convene to establish research, extension, and regulatory priorities for rapid apple decline and building apple orchard resiliency. The meeting will conclude with a discussion of collaborations, grants and future endeavors. Ultimately, the goal will be to formally submit an SCRI Relevance Statement for a multi-million-dollar grant proposal for the 2020-2021 funding cycle (~Fall 2020).

Budget

Salaries/Wages.....\$1,000

<i>Fringe Benefits</i>	<i>\$79</i>
<i>Materials and Supplies</i>	<i>\$2,500</i>
	Total requested: \$3,579

Budget Justification

Salaries/Wages - \$1,000

Funds are requested to support the wages of a part-time administrative staff member at the PSU Fruit Research and Extension Center to assist with the logistics of preparation and execution of the two-day meeting (\$16/hr; approximately 62.5 hours).

Fringe Benefits - \$79

Fringe benefits are computed using the fixed rates of 37.85% applicable to Category I Salaries, 13.00% applicable to Category II Graduate Assistants, 7.86% applicable to Category III Salaries and Wages, 0.25% applicable to Category IV Student Wages, and 23.52% for Category V, Postdoctoral Scholars and Fellows, for fiscal year 2019 (July 1, 2019, through June 30, 2020). If this proposal is funded, the rates quoted above shall, at the time of funding, be subject to adjustment for any period subsequent to June 30, 2020, if superseding Government approved rates have been established. Fringe benefit rates are negotiated and approved by the Office of Naval Research, Penn State’s cognizant federal agency.

Materials and Supplies - \$2,500

Funds are requested to provide beverages, snacks, and lunches for 50-70 people for the two days the working group meeting will be held. Additional funds for supplies are requested to assist in facilitating the two-day event (name tags, large note pads, easels, etc.).

Requested funds and other support:

A grant is pending with the Northeast IPM Center to formalize a “Rapid Apple Decline Working Group” and decisions will be made by February 15, 2020. The maximum amount allowed to request is \$20,000 to support a Working Group. If awarded, the NE IPM grant will cover a small percent of the PI’s effort and travel expenses for participants to attend the two-day meeting. The funds requested for this SHAP Extension grant will provide meals (beverages, snacks and lunches) for the attendees, office supplies (name tags, large note pads, easels, etc.) and administrative support for the two-day meeting.