24 Grape I

Where: Grand Gallery Room C
MI re-certification credits: 2 (1C, COMM CORE, PRIV CORE)
OH re-certification credits: 0.5 (presentations as marked)
CCA Credits: CM (1.5) PM (0.5)
Moderator: Thomas Todaro, Michigan State University

9:00 AM **Changes in Within-Shoot Carbon Partitioning in Pinot Noir Grapevines Subjected to Early Basal Leaf Removal**
- Paolo Sabbatini, Michigan State University

9:30 AM **Retro-Fitting VSP to Increase Production**
- Cain Hickey, University of Georgia

10:00 AM **Two Decades of Berry Moth Research - What Have We Learned? (OH: 2B, 0.5 hr)**
- Rufus Isaacs, Michigan State University

10:30 AM **Early Mechanical Leaf Removal in Merlot**
- Josh VanderWeide, Michigan State University

11:00 AM **Session Ends**

Enhancement of Fruit Technological Maturity and Alteration of the Flavonoid Metabolomic Profile in Merlot (Vitis vinifera L.) by Early Mechanical Leaf Removal

Removal of basal leaves near blooms inevitably affects grapevine balance and cluster microclimate conditions, improving fruit quality. Mechanization of this practice allows growers to save time and resources, but to our knowledge, it has not yet been compared with the manual application of this practice in a cool-climate region where seasonal temperatures frequently limit fruit technological maturity and phenolic ripening in red Vitis vinifera cultivars. In our research, berry sugar concentration was highest with pre-bloom mechanical treatment (PB-ME). Furthermore, metabolomics analysis revealed that PB-ME favored the accumulation of significantly more disubstituted anthocyanins and flavonols and OH-substituted anthocyanins compared with manual application. Given that vine balance was similar between treatments, increased ripening with PB-ME is likely due to enhanced microclimate conditions and higher carbon partitioning through a younger canopy containing basal leaf fragments proximal to fruit. This information provides an important strategy for consistently ripening red Vitis vinifera cultivars in cool climates.