

Agronomy Seminar Series

FALL 2024

“Regulation of carbon export from plant leaves
in stress responses and climatic adaptation”

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In plants, a fine regulation of carbon transport is essential to achieve an optimal balance of carbon assimilation in source tissues and carbon utilization in sink tissues. Rebalancing is especially important for stress responses and the adaptation to local climates. Our investigation focuses on a key step in whole-plant carbon transport, the export of sucrose from leaves. In the model plant *Arabidopsis thaliana* and most crops, the sucrose export rate is mainly determined by the activity of the sucrose transporter that loads sucrose into the transport cell complexes of the phloem vascular tissue in leaf veins. This sucrose transporter is called SUC2 in *Arabidopsis* and SUT1 in most other plants. I will present details on the climate-dependent genetic and epigenetic regulation of SUC2 in *Arabidopsis* natural accessions. Moreover, I will show results on hormone-related transcription factors influencing SUC2 transcription in response to drought stress and outline the post-transcriptional regulation of SUC2 protein by phosphorylation, ubiquitylation and intra-membrane compartmentation.

Monday, September 16th

2:30 PM | LILY 2-425



Agronomy

▷ Attend virtually via Zoom ◁
Seminar links will be posted at:
purdue.ag/agryseminars