VIRGINIA AGRICULTURAL EXPERIMENT STATION
EASTERN VIRGINIA AGRICULTURAL
RESEARCH AND EXTENSION CENTER
VIRGINIA TECH

EASTERN VIRGINIA AREC NEWSLETTER

VOLUME I, ISSUE I
DECEMBER 2020

Dr. Joseph Oakes
Superintendent
Eastern Virginia AREC

We hope that everyone is safe and healthy amidst the COVID-19 pandemic, and that you all had a successful fall planting and harvest season. This newsletter is the first in what will be a quarterly newsletter to update you on our current research, as well as, to highlight recent grants and publications. During the COVID-19 pandemic, research has continued here at the Eastern Virginia AREC. I want to personally thank the faculty and staff here at the center for their commitment to masking, social distancing, and cleaning, which enabled us to continue our normal day-to-day in-person operations throughout the pandemic. We have recently finished small grain (wheat and barley) planting and soybean harvest. Dr Nicholas Santantonio has recently been hired to replace Dr. Carl Griffey as small grain breeder. Although located in Blacksburg, the bulk of Dr. Santantonio's field research will continue to be located at EVAREC. Best wishes to Dr. Griffey in his retirement!

Merry Christmas and Happy Holidays!

- *Joseph*

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December Research Highlight!

Small Grain Scab Breeding Program

Dr. Josh Fitzgerald
Research Associate
Eastern Virginia AREC

"The Virginia Tech small grain scab breeding program is committed to developing high yielding fusarium head blight (FHB) wheat and barley lines for producers in the mid-Atlantic region. Each year, we select progeny from scab crosses and evaluate FHB traits in thousands of plots under mist irrigation. One of the pillars of my research is to map and validate FHB resistance QTL(s) from native sources of winter barley and identify diagnostic molecular markers that will aid in marker-assisted selection. I'm collaborating with other VT faculty in developing high-throughput phenotyping capabilities with hyperspectral imaging to assess field disease symptoms of FHB incidence and severity in small grains breeding material. The potential application could drastically save time and resources, while resulting in more objective disease estimations, during the field season when disease evaluation is critical."

Recent Publications & Grants

PUBLICATIONS:

2020 Small Grain State Tests Performance. SPES-227.pdf (vt.edu)

Meier, N.A., Malla, S., Oakes, J.C., Murphy, J.P., Baik, B., Chao, S., Griffey, C.A. Registration of three soft red winter wheat germplasm lines with exceptional milling and cookie baking performance. Journal of Plant Registrations. 2020: 1-7. https://doi.org/10.1002/plr2.20055

Sarkar, S., A.-B. Cazenave, J. Oakes, D. McCall, W. Thomason, L. Abbott, and M. Balota. 2020. High-throughput measurement of peanut canopy height using Digital Surface Models (DSMs). The Plant Phenome Journal. 3(1): e20003. https://doi.org/10.1002/ppj2.20003

Brasier K, Ward B, Smith J, Seago J, Oakes J, Balota M, et al. (2020) Identification of quantitative trait loci associated with nitrogen use efficiency in winter wheat. PLoS One 15(2): e0228775. https://doi.org/10.1371/journal.pone.0228775

GRANTS:

Assessment of Fusarium Head Blight in Small Grains Using Aerial Methods. 2020. $16,000. Joseph Oakes, Josh Fitzgerald, Song Li. Virginia Agricultural Council.

Evaluate hyper-spectral imaging in quantification of DON toxin levels in small grains in Virginia. 2020. $9,930. Song Li, David Schmale, Joseph Oakes, Joshua Fitzgerald. Virginia Small Grains Board.

Agricultural Technology and Big Data: Perceptions from Stakeholders. 2020. $4,000. Tiffany Drape, Joseph Oakes, Trent Jones. Commonwealth Cyber Initiative Southwest Virginia.

Improving Machine Learning Methods for Counting Corn Stands from Drone Images to Assist Replanting Decision Making. 2020. $10,448 Song Li, Joseph Oakes, Wade Thomason. Virginia Corn Board.

Small Grains Research Program Support. 2020. $8,500. Joseph Oakes. Virginia Small Grains Board.

Eastern Virginia AREC Soybean Research Support. 2020. $7,500. Joseph Oakes. Virginia Soybean Board.

Eastern Virginia AREC's mission is to serve Virginia's grain and soybean industries through research and educational programs leading to improved varieties and crop management practices. Our research objectives are to support the Virginia Tech soybean and small grain breeding programs, and to conduct agronomic research that contributes to economically and environmentally sound crop production in the Commonwealth and beyond.

A COLLABORATIVE NETWORK

The ARECs are a network of 11 centers strategically located throughout the state that emphasize the close working relationships between Virginia Agricultural Experiment Station, Virginia Cooperative Extension, and the industries they work with. The mission of the system is to engage in innovative, leading-edge research, to discover new scientific knowledge, and create and disseminate science-based applications that ensure the wise use of agricultural, natural, and community resources while enhancing quality of life.

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