

**ANNUAL PROGRESS REPORT  
TO  
NORTH CAROLINA SMALL GRAIN GROWERS ASSOCIATION, INC.**

**TITLE:** NCSU Small Grains Extension & Outreach Program  
**LEADER(S):** Angela R. Post  
**DEPARTMENT(S):** Crop and Soil Sciences

**REPORT:**

Objectives were:

1. Continuing education training for agents through Small Grains Short Course
2. Incorporate complete datasets into consumable products for online and in-person dissemination
3. Support virtual education efforts to supplement in-person training for farmers and agricultural agents

**Agent training**

At the state extension conference in October 2022, Charlie Cahoon and I offered Advanced Seedling Weed identification to county agents and we had 26 participants. In addition, basic classroom training will be offered to new agents in September 2023, as a part of this grant. This is a new timing as we often offer training in April and May. However, I am hopeful that a basic training as we approach planting season will be more useful to new agents.

In April and May we offered individual training to agents from 10 counties including Seth Nagy, Tom Dyson, Al Wood, Morgan Menaker, Mikayla Berryhill, Rod Gurganus, Dwayne Dabbs, Blake Szilvay, Heather Schronce, and Tim Britton. We also offered some individualized agent training for seven agents during on-site farm visits for troubleshooting problem fields and tiller counting with agents in early February.

In 2022-23, we held an in-depth training for agents on the variety selection tool at the State Extension Conference. This was a 2-hour training for eight agents covering how to use the tool to find data and how to generate data reports for growers from the variety selection tool if needed. We also did some troubleshooting to find the boundaries of the tool's capabilities in order to further improve it.

This year, the small grains program again participated in the Statewide Agronomic Program Team for Grains. This is a collaborative effort between corn, wheat, and soybean extension specialists to educate field crop extension agents in North Carolina. We hold a monthly Zoom session with field crops agents attracting between 35 and 40 agents every month. We ask agents to submit problems from the field, pictures, and other concerns for us to address as a group each month. The sessions are recorded so that agents have the opportunity to revisit the learning experience as needed. These sessions have led to several on-farm site visits to assess grower issues and make recommendations. Dr. Post participated in all 12 Agronomic Program

Team meetings for 2022-23. Topics covered for small grains included: wheat planting outlook, wheat topdressing source, rate and timing, wheat damage from freezing temperatures, and timing of fungicide applications. There were 461 total touchpoints with this effort, averaging 38 participants per month.

All other current publications are posted on the small grains website. As data is processed for 2023 additional factsheets and materials will be posted to the portal:  
<https://smallgrains.ces.ncsu.edu/>

The following reports have been added this season:  
Grain Quality Analysis 2022  
How to install and Nitrogen Rich Strip  
Wheat Maturity and Planting Date Management  
Summary of Wheat Yield Contest Results

#### **Small Grains Production Guide:**

The Small Grain Production guide is available online at:  
<https://smallgrains.ces.ncsu.edu/small-grain-production-guide-2021/>  
The production guide has been distributed widely this growing season with over 300 copies being handed out at field days, county production meetings, farm visits, and whistle stop tours.

#### **Yield Contest Form Update:**

In 2023, Wheat Yield Contest was fully integrated with the National Contest. For the 2023 harvest season, we received 40 contest entries, up by two entries from last year. Only Ohio growers had more entries by state for the eleven national contest participating states. The electronic form also captures two additional pieces of information from growers: whether they use a plant growth regulator in season, and what actual pesticides are being used.

#### **Virtual Events:**

The virtual content released in 2020 has continued to be popular and receives new viewership each month. Our virtual events are available on The Small Grains Extension YouTube Channel: <https://www.youtube.com/channel/UC7L4iVnAGpGI3dA1WqmbRww>. You can also find them in the Crop and Soil Sciences Library of Virtual events: <https://cals.ncsu.edu/crop-and-soil-sciences/virtual-events/>

Additional virtual education activities for the year included support for Jeremy Davis to attend a virtual conference on drone technologies and drone spraying practices. Our program purchased a T40 spray drone to begin extension demonstrations and research for aerial pesticide use.

#### **Variety Selection Tool Update:**

The Wheat Variety Selection tool has now been live for producers and agents to use for two years. New data was loaded to the tool July 15, 2023. Now the tool incorporates eight years of Official Variety Testing data, disease and insect resistance data, and images for many of the varieties. It is being continually updated. We are working continuously to improve the user-friendliness of the tool and to provide additional training to agents to assist growers in making on-farm selections in wheat. In the first week of August the Small Grains Extension Program will release recommended varieties by region by generating reports from the tool. This will be a

valuable resource agents can use in their regions and counties to assist growers in selecting the best varieties for their farms.

### **Wheat Jointing Model Update**

In Fall 2021, Eliza Hardy began work on the wheat jointing model for North Carolina. We have a dataset containing three locations with ten varieties across a range of maturities for the 2022 and 2023 harvest seasons. Data are currently being analyzed to assess how jointing occurred in relationship to heating units. This work has been supported through the NC Ag Foundation; however, data will be incorporated into extension publications for growers which are directly supported through this grant.

### **Grain Quality Analysis Laboratory**

Samples are still coming in from North Carolina growers for the Grain Quality Analysis Lab in 2023. Farmer samples remain free to NC growers and the cost of executing those samples in both wage and consumable supplies is supported by this grant. We have started to receive external entries to this laboratory and look forward to providing this service to researchers and growers throughout the Southeast.

We are again processing approximately over 2000 samples through the laboratory from the Official Variety Testing (OVT) program and also from the small grains extension program. Over the three seasons we have had the equipment in place, this has saved \$173,366 and generated \$41,640 in third party testing capacity. Also, by processing these in house, we are able to quality control our data more closely as well as control the speed at which data become available for use. Previously, if milling quality information was reported for the NCOVT, it was reported one year after release of yield data for the same samples. We now have the capacity to release this data as a part of the variety selection tool in the same year it is harvested. This data should be available in mid-August of 2023.

### **Stakeholder Outreach**

Several small grain field activities throughout the year are supported through dollars that move directly from the NCSGGA to the counties (Field Days and Whistle Stops). However, travel to these locations by the specialists and associated field staff are budgeted in this grant. Funding through this outreach and extension grant allowed us to support travel to thirteen small grain whistle stop tours as well as eight winter grain production meetings covering 15 counties between January and May 2023. Grain Production meetings reached a total of 343 participants this year. We also completed 36 Individual Farm Visits during the season. Thank you for your continued support of these activities that are so valuable to the stakeholders of North Carolina.

### **Budget / Financial Status Update:**

Nearly half of \$27,000 awarded has been spent to date. The remaining balance is expected to be spent by the end of the funding cycle to support extension and outreach activities as we approach fall planting time. Several Small Grain Production meetings are already scheduled for August and early September. Travel to the county locations will be supported under this grant. Some hourly wage labor will be utilized for processing grain samples through the GQA laboratory. In addition the September agent training will require funds for agent travel and materials.

**IMPACT STATEMENT:**

The work completed under this proposal reaches hundreds of growers each season and supports the small grains industry with research-based data. Information is disseminated through print and web-based publications to educate growers and professionals on new and emerging issues in wheat production. The depth of data and comparison power of the new variety selection tool allows small grain producers to select varieties that will work better for their operations and hopefully, increase their bottom line. The tool also allows commercial seed producers to accurately place their lines in the region. Agent training exercises we provide prepare new and seasoned agents to meet the demands of growers in their counties with confidence. We also impact growers directly and in-person through this project, which supports all farm visits made each season to troubleshoot problems and make individual recommendations on-farm. Our extension and outreach work has the greatest impact of anything that we do.