

A PROPOSAL TO
NORTH CAROLINA SMALL GRAIN GROWERS ASSOCIATION, INC.

FOR RESEARCH OR EDUCATION ENTITLED
Support of the NC OVT Wheat Variety Selection Tool
COVERING THE PERIOD FROM **10/01/2023** TO **9/30/2024**

REQUESTING SUPPORT IN THE AMOUNT OF **\$4,000**

SUBMITTED BY:

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Note: This is a fundamental research or scholarly project and, as such, the University shall be free to publish or disseminate the results of this research or otherwise treat such results as in the public domain, and it will conduct the research in an open forum consistent with the University's mission of research, instruction and public service.

Project #: 22-02 (Year 3 – 2023-24 Funding Request)

OBJECTIVE(S):

The goal of this proposal is the annual support of the NC OVT Wheat Variety Selection Tool. This tool can be found at ncovt.medius.re

PROJECT DESCRIPTION AND RELEVANCE:


Variety selection is one of the most important decisions a grower can make, accounting for up to 60% of their overall yield level at the end of the season. The role of the North Carolina Official Variety Testing program (NC OVT) is to provide growers with an unbiased source of variety performance data across North Carolina. Prior to 2020, this data was delivered to growers using hard copy printed yield tables (Green Book) or electronic yield tables loaded to the NC OVT website. While these data delivery methods were effective, they were limited by the depth of data presented. A grower could identify the highest yielding variety at a location or across the state, but that same grower was unable to access characteristic information or performance information by other criteria such as maturity or disease resistance without navigating to multiple separate tables.

To solve this issue, the NC OVT partnered with Medius.Re to develop a database for wheat variety results from the NC OVT trials (Wheat Variety Selection Tool). The Medius group has had a long history of providing variety performance data to growers and industry personnel in the potato industry. Using this experience, and the base tool they use for potatoes, we were able to develop a comprehensive database for wheat varieties. This database spans multiple years and provides the growers with multiple options to search and filter their data to meet the specific demands of their operation from one data view (Figure 1). A search that would take multiple hours using the old tables, now takes minutes using the Medius database. Additionally, growers can access images and other supporting documentation for each variety that was previously unavailable.



Figure 1. Yield data view in the variety selection tool. Single year (left 9 columns) and multiple year (right 4 columns) included in same view.


An example of the output possible from the Wheat Variety Selection Tool is shown below in Figure 2. In this example, a grower from Pasquotank County requested high yielding wheat varieties with excellent test weight. While yield and test weight data are available on the old static tables, it would be very difficult to combine and sort this data together and compare the top performing lines, particularly over multiple years. However, because this data is available in the Wheat Variety Selection Tool, the OVT group organized this report and provided it back to the grower within an hour of the initial request. Moving forward, additional disease and characteristic data will be added to this tool for each variety, further enhancing the scope and scale of the available data.

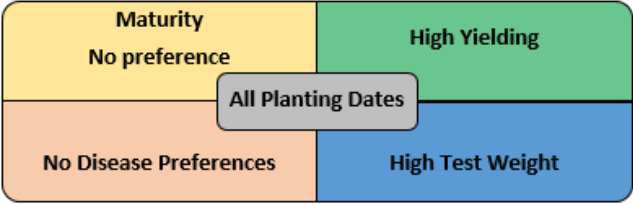


NC STATE EXTENSION

Variety Selection Tool Report

Area of Impact: Pasquotank County





	3 Years of Data					2 Years of Data		1 Year of Data			
	Hilliard	SH 7200	Shirley	98 11	USG 3118	9002	Agrimaxx492	9172	Agrimaxx 514	CP8045	LW2169
Years	2019, 2020, 2021	2019, 2020, 2021	2019, 2020, 2021	2019, 2020, 2021	2019, 2020, 2021	2020, 2021	2020, 2021	2021	2021	2021	2021
Variety Records	14	14	14	14	14	11	11	5	5	5	5
Variety / Company	Virginia Crop Improvement	Southern Harvest	Dyna-Gro	Dyna-Gro	UniSouth Genetics	Dyna-Gro	AgriMAXX	Dyna-Gro	AgriMAXX	CROPLAN	Local Seed
Variety / Availability	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available
Research											
Yield	83.3	84	81.6	83.1	88.1	75.8	85.3	76.7	75.7	77.8	76
Top Yield Group	31.00%	31.00%	23.00%	15.00%	62.00%	20.00%	60.00%	20.00%	40.00%	40.00%	40.00%
% of Hilliard	100.00%	108.80%	98.60%	100.60%	108.90%	92.60%	105.30%	106.30%	104.30%	107.90%	105.50%
% of P28R4L	105.60%	111.90%	107.60%	106.00%	116.10%	113.60%	114.00%	116.20%	113.80%	117.00%	114.80%
Test Weight	57.1	58.5	56.2	58.1	58.6	57.1	57.9	57.5	56.6	57.5	57.8
% Protein	10.70%	11.20%	10.70%	10.70%	11.00%	10.00%	10.30%				
Falling Number	299	277	377	275	379	277	300				
Height	34.4	34.3	31.9	33.6	31.2	33.1	31.4	30.5	30.6	30.6	30.9
% Lodging	11.90%	9.40%	3.20%	6.90%	1.30%	0.00%	1.00%				
GDUs to 50% Head	2330	2250	2330	2330	2300						
Seed Size	14500	10900	13600	13700	12700	11100	12900	11800	11600	12900	12000
Head Type	awned	awned	awnlett	awned	awnlett	awned	awned	awned	awned	awned	awned
Head Scab	R	R	I								
Head Scab	MS	S	S	S	MS	MR	MS				
Powdery Mildew	R	MR	R								
Leaf Rust	MR	MR	MR	MR	R	MS	R	MS	MS	MS	MS
SNB		MS	MR								
Stripe Rust	R	MS	S								
Thin Spot		MS	MR								
Soilborne Wheat Mosaic		MS	MR								
Wheat Spindle Streak		MS	MR								
Barley Yellow Dwarf			MR								

Yield levels, % Yield Difference from Mean, & Top Yield Group highlighted in green above, with darker shades indicating higher values

Items of Note: Selections made here are based first, on their yield performance nearest your location and second, on their corresponding statewide yields. When choosing a hybrid based on performance data, multi-year and multi-location data are a better predictor of long-term hybrid performance. Several of the hybrids in the report have only one-year data available. They are still worth a look on limited acreage if you are looking to try something newer.

Figure 2. Example report from the wheat variety selection tool. The report can be tailored to the specific needs of each grower or growing region for variety characteristics and yields.

The goal of this proposal is the continued support of this new Wheat Variety Selection Tool. The money from this proposal would be used to pay for the annual license fee for the tool, including future features within the tool and support in using the tool. Funding the annual license for the Wheat Variety Selection tool would give the NC Small Grain Growers Association an opportunity to guide the development of this tool moving forward.

IMPACTS:

Implementation of the variety selection tool gives growers the ability to quickly tailor their variety selections to the specific needs of their operation, from disease ratings to performance on specific soil types. This resource provides growers with a higher success rate selecting varieties that will perform best in their operation, thus leading to more profitability for those growers. Since releasing the tool in 2020, nearly 4,500 unique visitors have used the tool each year.

RELATIONSHIP TO SIMILAR PROJECTS, IN NC AND OTHER STATES:

The potato breeding group at North Carolina State University has used the Medius platform for reporting their potato variety data to other groups within the United States. Other state OVT programs are now using our model for delivering variety performance data to growers using the Medius platform, including, but not limited to, Auburn, South Carolina, Virginia, and Maryland.

Similar Variety Selection Tools were developed from NC OVT data for Corn and Soybeans in 2020. Both the Corn Growers Association of North Carolina and the NC Soybean Producer’s Association are funding the annual license agreement for their respective tools.

FUNDS REQUESTED:

2023-24 \$4,000

Previous funding:

2022-23 \$4,000

2021-22 \$4,000