

2016 Wheat Variety Performance & Recommendations

Angela Post • North Carolina State University

Christina Cowger • USDA-ARS

These recommendations are based on variety tests conducted in North Carolina in 2013-14, 2014-15, and 2015-16. Yield and test weight are evaluated at every location. Pest resistance ratings are updated when pest pressure makes it feasible to evaluate resistance. These rankings are not always the same as those reported in the OVT, because 1) other variety tests may be used in addition to the OVT, and 2) some locations used in the OVT may be excluded.

Plant At Least Three Varieties: Always try to select at least three varieties to plant. This minimizes the risk from a variety that lacks resistance to a pest or flowers at a time when weather conditions are not optimal. Some “Above-Average Yielding” varieties are good first choices. But if you choose one or two varieties mainly due to high yield, avoid those that are susceptible to scab, and – outside the Piedmont – to Hessian fly. Also, choose one or two varieties mainly due to good resistance to those pests, which are hard to manage with pesticides. Even “Average Yielding Varieties” are likely to produce acceptable yields. To help with disease management, make sure you note which varieties you plant in each field.

Avoid Spring Freeze Damage: Spring freeze damage is often a problem in North Carolina and can result in unacceptable loss in yield potential. Early-heading varieties are the most likely to be damaged by spring freeze. To reduce the risk of yield loss due to freeze damage, plant no more than one early-heading variety and at least one late-heading variety. Late-heading varieties should be the first ones planted. Early-heading varieties should be planted on the late side of the optimum planting period, and should be the last varieties planted.

Reduce the Risk of Head Scab: In the past decade, head scab has been a significant disease problem nearly every year in some part of North Carolina. Scab causes yield losses, low test weight, and rejection of grain at the buying station due to high vomitoxin (DON) levels. This disease is one of the major problems that small grain growers must try to avoid. The best way to minimize risk is to plant varieties rated “MR” to head scab (Table 1). If weather conditions in the spring favor scab, fungicides may be recommended at flowering. However, even if selected, timed and applied correctly, fungicides are only about 50% effective. They can reduce scab damage, but not eliminate it. Therefore, planting varieties rated “MR” to scab is the first and most important step in managing this threat. See www.smallgrains.ncsu.edu/head-scab.html for more information.

Maximize Yield By Managing Powdery Mildew or Leaf Rust: Research at NCSU has shown that when powdery mildew or leaf rust develops, the combination of varieties rated “R” or “MR” for these diseases **and** a fungicide application most often leads to the highest yield. These diseases are uncommon in the Piedmont region, but in other parts of the state, selecting varieties with resistance to powdery mildew and leaf rust is always a good idea. See www.smallgrains.ncsu.edu/video-library.html for more information about these diseases.

Are Soil Virus Diseases Important? In fields with a history of soil virus diseases, yields can be reduced by 14% or more when a variety rated “S” for soil-borne mosaic or spindle-streak virus is used compared to one rated “MR.” Once a field has exhibited soil virus problems, it is important to plant varieties rated “MR” or “R” to that particular virus. There are no fungicides or other treatments that can be used to treat soil viruses. Therefore, when you have a soil virus, variety selection is your only defense against yield loss.

More Information on Variety Selection or Disease Management: Check the *Small Grain Production Guide*, the small grain production website (<https://smallgrains.ces.ncsu.edu>), or call your local county extension office. Further information about variety characteristics such as plant height or local variety performance can be found at www.ncovt.com.

Table 1. 2014 to 2016 Wheat Variety Performance

Wheat Variety	Test Weight	Heading Date	Pest Resistance To									
			Powdery Mildew	Leaf Rust	Head Scab	Hessian Fly Biotype-L	Barley Yellow Dwarf Virus	SNB	Soilborne Mosaic Virus	Spindle Streak Virus	Stripe Rust	Tan Spot
Above Average Yield												
AgMX 415	+	MED	MS	MR	MR	FAIR		MR	MS	MR	R	MR
AgMX 444	-	LATE	MS	MS	MR	POOR		MR	MS	R	R	MR
AgMX 446	+	LATE	MS	MS	S	EXCELLENT		S	S		R	
DG 9552	ave	LATE	MS	MS	MS	GOOD		MS	MS		MR	
DG Shirley	-	LATE	R	MR	S	POOR	MR	MR	MR	MR	S	
Fthstone VA-258	-	MED	MR	R	S	POOR	S	MR	MR	MR	S	S
Harvey's AP 1871E	ave	LATE	S	S	MS	GOOD		S	MS		R	
P 26R10	+	LATE	MS	MS	MS	EXCELLENT	MS	MR	MR	R	R	MR
P 26R20	+	LATE	MR	MS	S	GOOD	S	MR	R	MR	MR	MR
P 26R41	+	MED	MR	MS		GOOD					R	
P 26R53	ave	MED	MS	MS	MS	FAIR	MS	S	MS	MR	R	MS
S Harvest 4300	+	LATE	MS	S	MR	POOR		MR	MS		S	
S Harvest 4400	+	LATE	MR	MS	MS	GOOD		S	MS		MR	
SS 8340	+	MED	MS	MS	MR	POOR	MS	MR	MR	MR	R	MS
SS 8360	ave	LATE	S	MS	MS	EXCELLENT		MS	S		R	
SS 8415	ave	MED	R	MR		GOOD					MR	
SS 8513	+	EARLY	MR	MR		POOR					R	
SY Viper	+	LATE	MR	MS		FAIR					R	
USG 3895	+	MED	MS	R	MS	FAIR		MR	MS		R	
USG 3201	+	LATE	MS	MS	MS	FAIR	MR	MS	MR	MR	R	MS
USG 3404	-	LATE	MS	MS	MR	GOOD		MR	MS	R	R	MR
USG 3523	-	LATE	MS	S	MR	GOOD		MR	MR	MR	R	MR
VT Hillard	+	LATE	R	R		GOOD					R	
Average Yielding												
DG9522	ave	LATE	MS	MS	MR	POOR		MS	MR		R	
Fthstone 73	+	MED	MR	MR	MR	GOOD		MR	MS		R	
Harvey's AP 1882E	-	LATE	MR	MR	MR	GOOD		MR	R		MR	
SY Harrison	-	LATE	S	S	MR	FAIR	MR	MR	MS	MR	R	MR
SY Oakes	+	MED	MS	MS	MR	FAIR	MS	MR	S	MS	MS	MS
USG 3251	ave	LATE	MS	MS	S	FAIR		MR	MR	MR	MR	MR
USG 3756	-	MED	MS	MS	MR	FAIR		MR	MS		MS	
Below Average Yielding												
DG 9223	-	LATE	S	S	MS	GOOD		MR	MS	MR	R	S
GA 12LE28	-	EARLY	R	MS	S	GOOD		S	MS		MR	
NC Yadkin	+	LATE	R	R	MR	POOR	MS	MR	MR	R	S	S
P 25R32	ave	LATE	MS	MS	MR	GOOD	MS	MR	MR	R	R	MR
Prog P 357	-	LATE	S	S	MS	FAIR	MR	MR	R	R	R	MR
Prog P 870	-	MED	MS	MS	S	POOR	MR	MS	MR	MR	R	MR
S Harvest 555	+	EARLY	MR	R	S	POOR		MS	MS		MR	
USG 3612	-	MED	MS	MS	MS	FAIR		MR	MS		R	
USG 3833	-	LATE	S	S	MS	GOOD		MR	MR		R	

1. Listed alphabetically within groups: AgSouth = AgSouth Genetics; AgMX = AgriMAXX; DG = Dyna-Gro; Fthstone = Featherstone; Lgrain = Limagrain; P = Pioneer; Prog = Progeny; S Harvest = Southern Harvest; SS = Southern States; SY = Syngenta; USG = UniSouth Genetics.
2. For test weight "+", "ave", and "-" stand for above average, average, and below average, respectively.
3. SNB stands for Stagonospora nodorum blotch. S, MS, MR, and R stand for Susceptible, Moderately Susceptible, Moderately Resistant, and Resistant.
4. **Dark green** cells indicate resistance and **light green** cells indicate moderate resistance to the most important diseases we face in NC. The more green cells a variety has, the better resistance package overall.