

# WHEAT VARIETY IMPROVEMENT

U.S. Central  
Great Plains Field Stations  
Akron, Colorado

Greg Hinze and J.R. Welsh <sup>1</sup>

Colorado  
State  
University  
Experiment  
Station

# PROGRESS REPORT

Fort Collins

PR 70-33

JUNE 1970

Wheat variety experiments are being conducted at Akron in order to determine which of the available varieties and potential selections are best adapted to the area.

These trials form the basis for varietal recommendations of the Colorado State University Experiment Station for the Akron wheat growing area. Additional data, other than that published in this report, are collected each year from off-station locations at Burlington and Julesburg. Data obtained on all varieties in these tests include yield, test weight, height, disease resistance and an evaluation of quality for bread making. A three- to five-year period is normally required for an accurate evaluation of the potential of varieties.

Five different winter wheat nurseries are currently being grown at Akron; 1- Winter Wheat Variety Trial, 2- Southern Regional Performance Nursery, 3 Semi-dwarf F4 Nurseries, 4- Colorado Intrastate Nursery, and 5- Colorado Observation Nursery. The Winter Wheat Variety Trial includes several of the older varieties as well as the newer varieties and selections that have been released in recent years or which are being considered for release in the near future. Yield data pertaining to this trial for the period of 1961 to 1969 appear in Table 1. Over the past three years the variety

Trapper has shown the best overall yield potential in the nursery.

The regional nursery includes new strains originating from state and federal wheat breeding programs in the western and central United States. The most outstanding performance has been by the selection NB 66425. Its performance with check varieties is given in Table 2. This selection has a number of desirable characteristics including good yield, heavy test weight, disease resistance, and acceptable milling and baking properties. It will be released when adequate seed stock become available.

The Colorado Intrastate Nursery and the Colorado Observational Nursery include new strains developed in the Colorado State University Experiment Station wheat breeding program at Fort Collins. The Semi-dwarf F4 Nursery is also from Fort Collins and include numerous selections from an intense program in which the semi-dwarf character and yield potential of the Mexican semi-dwarf spring wheats are being incorporated into winter wheat varieties. Those selections showing agronomic promise in these nurseries will be further evaluated in winter wheat yield trials in 1971.

A spring wheat nursery was established under irrigation in the Wray area in 1969. This nursery included the most promising of the Mexican semi-dwarf spring wheats. Unfortunately it was completely destroyed by hail. The nursery was planted again in 1970 and an additional nursery of this type was planted at Akron. Both nurseries are under irrigation.

<sup>1</sup> Assistant Agronomist, Central Great Plains Branch Experiment Station, Akron; and Associate Professor of Agronomy, Colorado State University, Fort Collins, respectively.

Table 1. Yield Summary of Varieties Grown in Winter Wheat Variety Tests at Akron, 1961-1969.

Variety	C.I. or Sel. No.	Yield in Bu./Acre							Average	% Wichita Same Years
		1961	1962	1963	1964	1967	1968	1969		
Wichita	11952	22.1	25.0	14.2	21.0	40.2	26.2	36.7	26.5	
Warrior	13190	16.3	18.1	17.6	22.4	46.2	26.3	47.7	27.8	105
Scout	13546			17.9	14.3	42.9	30.4	50.1	31.1	112
Lancer	13547				18.5	50.7	25.3	48.4	35.7	115
Parker	13285				16.6	46.4	29.5	48.5	35.2	114
Guide	13856					44.0	25.7	43.1	37.6	109
Trader	13998					50.2	24.2	44.7	39.7	115
Trapper	13999					51.5	26.2	47.0	41.6	121
SLK/2 CNN	NB64365						27.0	48.2	37.6	120
Scout/CI 12995	CO 653033						26.4	48.0	37.2	118
WRR/CO12/PKRCO	652363						25.5	44.0	34.7	110
Scout Seln.	CO 64043							48.4	48.4	132
Scout 66	CI 13996							49.2	49.2	134

Table 2. Performance of NB 66425 and Check Varieties for Two Years at Five Colorado Locations.

	Year	AKRON		BURLINGTON		JULESBURG		SPRINGFIELD		FT. COLLINS		AVERAGE	
		Yield	T.W. 1	Yield	T.W.	Yield	T.W.	Yield	T.W.	Yield	T.W.	Yield	T.W.
NB 66425	68	20.5	52.3	35.6	58.7	40.3	62.0	28.7	62.1	86.3	60.4	42.3	59.1
	69	59.5	59.0	45.1	61.1	54.6	57.1	51.5	61.2	97.2	61.6	54.6	60.6
Two Year Average		40.0	55.6	40.3	59.9	47.4	59.5	40.1	61.6	91.7	61.0	48.4	59.8
Scout 66	68	22.6	55.1	26.0	59.2	37.3	62.8	17.4	62.1	95.1	62.1	39.7	60.3
	69	53.1	59.7	40.5	61.5	56.5	57.5	38.9	60.6	88.0	62.3	49.1	60.9
Two Year Average		37.8	57.4	33.2	60.3	46.9	60.1	28.1	61.4	91.5	62.2	44.4	60.6
Triumph	68	24.6	56.6	26.8	60.2	36.2	63.6	13.8	61.6	79.0	62.4	36.0	60.8
	69	46.6	60.5	29.0	61.2	45.1	57.7	34.9	59.5	76.8	62.0	41.1	60.7
Two Year Average		35.6	58.6	27.9	60.7	40.6	60.6	24.3	60.6	77.9	62.2	38.5	60.7

<sup>1</sup> T.W. is test weight.