

Columbia Recommended for Low Rainfall Areas

Columbia is an improved hard red winter wheat variety recommended for planting in the low rainfall areas of Oregon and Washington. It was developed and released to growers to provide a higher yielding, good quality, and smut resistant hard red winter wheat to replace Rio and other Turkey varieties.

Development. Columbia is the result of a cross of Rio-Rex × Nebred. The cross was made in 1942 at the Sherman Branch Station, Moro, Oregon, and the selection resulting in Columbia was made in 1948. It has been widely grown in experimental trials and disease nurseries, with subsequent tests for its various milling and baking qualities. This variety was named and released to growers in 1955 by the Oregon and Washington Agricultural Experiment Stations.

Characteristics. Columbia is easy to identify and distinguish from other Turkey varieties. It has a brown-chaffed, bearded, common head, and the red kernels are long with a narrow crease. The straw is medium in height and fairly stiff, but has the typical "Turkey" fineness.

Winter Hardiness. Columbia equals Rio in winter hardiness and makes a more rapid spring recovery.

Disease Resistance. Columbia is resistant to all known races of both common and dwarf smut. It has proved more resistant to "blasting" than Rio. Columbia may be attacked by root rots under certain conditions.

Threshing. Columbia shatters much less than Rio, and the heads tend to stand more erect. The threshing performance is

satisfactory. Because the kernels are held more tightly than Rio, it resists shattering and requires close adjustment of the cylinder and concaves.

Yielding Ability. Columbia has usually outyielded Rio, the commonly grown hard red winter wheat in the Columbia Basin. See table. The weight per bushel is equal to Rio.

Milling and Baking Quality. Columbia has good milling quality, satisfactory flour yield, and low ash content if the protein content is 10 per cent or more. The flour has a long mixing time, which makes it desirable for a blend with Rio and other bread wheat varieties with a shorter mixing time. Columbia appears to have very satisfactory quality when grown in areas of adaptation.

Recommended Areas. Columbia is best adapted to the 8- to 12-inch rainfall areas. In these areas the yield usually is higher than Rio and other Turkey varieties. In the higher rainfall areas, the soft wheat varieties produce more than Columbia. Often the protein content of Columbia is too low for satisfactory milling when grown in the higher rainfall areas. Adequate nitrogen fertilization is necessary if high protein is to be produced.

Summary of Yields, Columbia and Rio, 1951-1956

Oregon								
Location	Moro	Condon	Shuttler Flat	Ione	Eightmile	The Dalles	Kent	Average
Years tested	6	5	4	5	5	4	4	
Variety	Bu./acre	Bu./acre	Bu./acre	Bu./acre	Bu./acre	Bu./acre	Bu./acre	Bu./acre
Columbia	32.5	32.8	18.6	11.4	23.2	30.4	20.3	24.5
Rio	27.4	28.1	20.6	14.9	23.5	27.8	18.8	23.2

Washington								
Location.....	Lind	Harrington	Waterville	Horse Heaven	Lamont	Dusty	St. John	Average
Years tested	5	5	4	6	1	1	1	
Variety	Bu./acre	Bu./acre	Bu./acre	Bu./acre	Bu./acre	Bu./acre	Bu./acre	Bu./acre
Columbia	25.4	40.0	33.2	19.2	56.8	35.0	51.0	31.2
Rio	23.8	38.2	31.2	20.0	54.5	35.5	55.5	30.4

Columbia was developed at the Sherman Branch Experiment Station, Moro, Oregon, and tested in Washington cooperatively by the U. S. Department of Agriculture and the Washington Agricultural Experiment Station.

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