

Coulee, C. I. 14483, is a semidwarf hard white, bread-type winter wheat released in 1971 for production primarily in the 10- to 15-inch rainfall areas of Washington. Except for shorter plant height, it is very similar to Burt in general appearance. Coulee averages 5 to 12 inches shorter than Burt but is similar in winter and spring growth habit, winterhardiness, and kernel type. Coulee is superior to Burt in resistance to lodging and shattering.

Disease Resistance

Coulee is resistant to the prevalent races of stripe rust in the Pacific Northwest. Like Paha, it is susceptible to race PNW-2 of stripe rust, but this race has not been detected since 1963. Coulee is an improvement over Burt for tolerance to *Cercospora* foot rot, but it is more susceptible than Luke and Paha. Coulee is like Burt for resistance to common bunt, resistance to flag smut, susceptibility to several races of dwarf bunt, and high susceptibility to *Fusarium* root rot. Coulee is slightly more susceptible to leaf rust and much more susceptible to powdery mildew than Burt.

Milling and Baking Quality

Tests by the Western Wheat Quality Laboratory indicate Coulee is very similar to Burt in milling and baking quality. The flour has a strong gluten with bread-baking qualities typical of the strong gluten hard red winter vari-

eties such as Wanser and McCall. Coulee should be acceptable in the foreign and domestic market as a bread-type, strong gluten wheat at 11 to 13 per cent protein levels. As with Burt, bin and handle Coulee separately from common soft white and club wheats to prevent inter-mixing of varieties with distinctly different end-use qualities.

Areas of Adaptation

Coulee is best adapted to good management areas normally receiving 10 to 15 inches of rainfall, where it has outyielded Burt by an average of 7 bushels per acre or by 23 per cent (see the table). Coulee is more productive than Burt in higher rainfall areas but generally yields less than Luke or Nugaines under these conditions. It yielded slightly less than Wanser in the 10- to 15-inch rainfall area, but outyielded Wanser by 4 bushels (8 per cent) in the 16- to 18-inch rainfall area.

When grown under conditions of drought and severe freezing temperatures and in the absence of stripe rust, Coulee has shown no advantage over Wanser. Like Burt, Coulee has little postharvest dormancy and should be grown in areas where rain during harvest is rare to minimize damage due to sprouting.

Managing Coulee

Coulee emerges about equal to Burt and better than Nugaines but not as well as Moro.

Because Coulee has good resistance to stripe rust and emerges well from deep seedings, it may be seeded earlier than Nugaines. Early seeding, however, often results in low protein which is undesirable in strong-gluten wheat varieties.

Seed Coulee at the same rate as other varieties or at 45 to 60 pounds per acre. Seeding rate of late seedings should be increased by 25 per cent. Treat seed with hexachlorobenzene (HCB) at the recommended rates to reduce the possibility of infection by new races of common bunt. Do not grow Coulee where dwarf bunt is a problem.

Fertilization

Coulee produces favorable yields from high nitrogen levels. Use the same fertility program recommended for Nugaines. Establish the desired level of fertilization through soil tests. Early spring application of fertilizer may be desirable to take advantage of the rapid spring growth characteristic of Coulee.

Weed Control

Use weed control practices similar to those used with Nugaines. Since it is shorter than Burt, Wanser, and McCall, follow careful management to control cheat grass (downy brome).

Development of Coulee

Coulee was developed by R. E. Allan and O. A. Vogel of the Plant Science Research Division, Agricultural Research Service, U.S. Department of Agriculture, in cooperation with the College of Agriculture, Washington State University.

Initial field tests of Coulee were made by the Agricultural Research Service and the Washington State University Cooperative Extension Service, with supplemental tests conducted by Washington Experiment Stations. The Western Wheat Quality Laboratory

Comparative Yields of Coulee with Burt and Wanser in Washington Tests

Precipitation Area, In.	No. of Tests	Burt - Coulee (1966, 1967, 1968, 1969, 1970)			No. of Tests	Wanser - Coulee (1968, 1969, 1970)		
		Yield Bu./Acre		Av. Yield		Yield Bu./Acre		Av. Yield
		Burt	Coulee	as % of Burt		Wanser	Coulee	as % of Wanser
Below 16	20	31	38	123	18	37	36	97
16 to 18	27	50	56	112	24	49	53	108
Above 18	27	52	62	117	17	50	66	132

quality tests on Coulee. Some of the disease characteristics of Coulee were determined by the Cereal Disease Laboratory at Pullman.

The original cross between Suwon 92 and Burt was made by E. H. Everson, formerly of the Agricultural Research Service, U.S. Department of Agriculture, Pullman, Washington. R. E. Allan made all the subsequent crosses and in 1964 selected the line that resulted in Coulee.

Authors of this publication:

R. E. Allan, O. A. Vogel, K. J. Morrison,
C. J. Peterson, and G. L. Rubenthaler*

* R. E. Allan is research geneticist, O. A. Vogel and C. J. Peterson, research agronomists, and G. L. Rubenthaler, research cereal technologist, Plant Science Research Division, Agricultural Research Service, U.S. Department of Agriculture, Pullman, Washington. K. J. Morrison is Extension agronomist, Washington State University, Pullman.

Coulee wheat is a result of cooperative investigations of the Plant Science Research Division, Agricultural Research Service, U.S. Department of Agriculture; Washington Agricultural Experiment Station, Pullman; Oregon Agricultural Experiment Station, Corvallis; and Idaho Agricultural Experiment Station, Moscow.

Issued in furtherance of the Acts of May 8 and June 30, 1914, by the Washington State University Cooperative Extension Service, John P. Miller, Director, in cooperation with the U.S. Department of Agriculture. 5M572EM

SEP 21 1972

COULEE WHEAT

Cooperative Extension Service

College of Agriculture

Washington State University

Pullman

Extension Circular 383

April 1972

