of which was obtained from Aberdeen, Idaho. Backcrossing to Hadden kept the plants short, added disease resistance and earliness. The last cross with CI 14023 contributed most to soft-textured kernels with superior milling and baking quality characteristics.

Omega 78 is an early maturing wheat adapted to the Coastal Plain and Piedmont areas of the southeastern United States. It averages 2 days later in maturity than 'Holley' but is 9 days earlier than 'Arthur 71' in south Georgia. It exhibits satisfactory winter hardiness for the Piedmont area.

Omega 78 plants have strong straw and are semidwarf at maturity, approximately the same height as Oasis and Doublecrop (101 cm) at Tifton. The spikes of Omega 78 are blocky, midlong to long and unevenly apically awnletted. They have glabrous white glumes which are midlong, with broad shoulders, with beaks moderately long and mostly recurved. The grains are red, soft, plump and small to medium in size. The germ is midsize, the crease is midwide and shallow; the cheeks are uniformly rounded and the brush is midlong.

The grain of Omega 78 has medium test weight. It scored high in milling and baking quality characteristics of particle size index, AWRIC, cookie diameter and cake volume. In USDA tests at Wooster, Ohio, Omega 78 scored as well as Oasis and Arthur 71 and was superior to Ga. 1123, Holley and most other southeastern wheats.

Omega 78 is resistant to present races of leaf rust (caused by *Puccinia recondita* Tritici Rob. ex Desm.) but it is resistant to most races of powdery mildew (incited by *Erysiphe graminis* DC ex. Merat) but since its release in 1978 it has exhibited susceptibility to another race now prevalent in the Southeastern U.S. Omega 78 is susceptible to Hessian fly (Mayetiola destructor Say), stem rust (caused by *Puccinia graminis* Pers. f. sp. *tritici* Eriks, and E. Henn.), and Septoria glume blotch (caused by *Septoria nodorum* Berk.).

Omega 78 has a good yield record compared to other adapted cultivars in the Southeastern United States. It was increased and released when acreage was rapidly increasing and there was a demand for a semidwarf cultivar of high milling quality and early enough for double cropping with soybeans. Over 2,025 ha (5,000 acres) were grown for certified seed in Georgia in 1979–80. Breeder seed of Omega 78 will be maintained at the Coastal Plain Exp. Stn., Tifton, GA 31783 and foundation seed will be available from the Georgia Seed Development Commission 2420 S. Milledge Ave., Athens, GA 30605.

REGISTRATION OF POWELL WHEAT1 (Reg. No. 649)
R. S. Albrechtsen2

'Powell,' CI 17761, is a hard red spring wheat (*Triticum aestivum* L. em. Thell.) developed by the Utah Agric. Exp. Stn. and released in 1979. The AR-SEA-USDA participated in testing and evaluation of the cultivar. Local commercial flour mills assisted in evaluating quality characteristics. The wheat was named after John Wesley Powell, an early explorer of the Intermountain Region.

Powell originated as a single head selected in 1971 from an F2, bulk composite of two crosses, UT S15 ('Roque 66'/Delmar) and UT S16 ('Jaral 66'/Delmar) made at Logan, Utah, in 1967. The original F2 headrow was designated as UT S15, 16-517. It has been evaluated in Utah irrigated tests since 1973 and was in the Western Regional Spring Wheat Nursery for three years (1976–78). Powell was purified and breeder seed produced from 200 headrows grown at Yuma, Arizona, during the winter of 1976–77. Foundation seed was produced at Logan in 1977.

Average yield of Powell exceeded that of 'Fremont,' 'Borah,' and 'Moran' by 4.6, 7.6, and 22.5%, respectively, in 17 irrigated tests in Utah over the period 1975–78. Two-year average yields were equal for Powell and Borah in 33 Western Regional Spring Wheat Nursery trials grown in 1976–77. Powell appears to be best adapted for production under irrigated conditions.

Powell is a medium maturing cultivar with short (semidwarf), white straw. It is comparable to Fremont in height and lodging resistance but heads about three days later. The spike is awned, dorsally compressed, fusiform, middle, erect, and shatter resistant. Glumes are white, glabrous, midlong and midwide, with oblique to elevated shoulders. Beaks are midlong, acuminate, and 1 to 3 mm long. Awns are white and 2 to 8 cm long. Kernels are red, midlong, hard and ovate; they have a midized germ and a midwide, middeep crease with somewhat angular cheeks; brush is midsize and midlong.

Powell ranges from moderately susceptible to moderately resistant to stripe rust (caused by *Puccinia striiformis* West.), depending upon the location and the existing race complex of the causal organism. Milling and baking properties of Powell are good to excellent. Mixing stability, loaf volume, and loaf score are consistently higher than those of Fremont; test weight and percent protein are usually slightly lower. Overall baking ratings for Powell are consistently high.

Breeder and Foundation seed will be maintained by the Utah Agricultural Experiment Station, Logan, UT 84322.

REGISTRATION OF SINTON WHEAT1 (Reg. No. 647)

'Sinton,' hard red spring wheat (*Triticum aestivum* L. em. Thell.) CI 17573, was developed by the Research Stations, Agriculture Canada, Swift Current and Regina, Saskatchewan. Assistance was received from the Research Station, Agriculture Canada, Winnipeg, to select for rust resistance. It received license number 1613 in Canada in October 1975.

Sinton was selected from a cross between a high yielding awned line derived from 'Thatcher'*6/‘Kenya Farmer’/’Lee'*6/‘Kenya Farmer and the rust resistant cv. ‘Manitou.’ It was developed by the pedigree method using early generation selection for both grain yield and baking quality. Sinton was evaluated as CT 440 in the Western Bread Wheat Cooperative Tests at about 20 locations in each of the years 1971–1974. Breeder seed was developed by bulking the progeny from 182 uniform plant rows.

In the rust area of Manitoba and eastern Saskatchewan, Sinton averaged 8% higher grain yield than Manitou and 4% higher than 'Neepawa'. In the drier prairie area of southwestern Saskatchewan and southern Alberta, Sinton averaged 3% higher yield than Manitou and 1% lower than Neepawa. Sinton's main attributes are higher grain yield in the black soil zone of the Canadian prairies and resistance to leaf rust (caused by *Puccinia recondita* Rob. ex. Desm. f. sp. *tritici*). It has both seedling and adult plant resistance genes which are effective against prevalent leaf rust races.

Sinton requires about 2 more days to ripen than Neepawa, has straw length similar to Neepawa but slightly stronger. It is moderately susceptible to shattering. The spike is fusiform to oblong, awned, and midlax to middense. The glumes are glabrous and white; shoulders are narrow and elevated, and beaks are tapering and midlong. The kernel shape is oval to ovate, midsize to small, midlong to short, midwide to wide. The germ is midsize and round, and the crease is midwide to wide, and shallow to middeep. The brush is midsize to small and midlong.

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