REGISTRATION OF CROP CULTIVARS

REGISTRATION OF TIOGA WHEAT
(Reg. No. 568)
L. R. Joppa, L. D. Sibbitt, and J. D. Miller

'TIOGA' wheat, Triticum aestivum L. em. Thell., CI 17286, is a hard red spring wheat cultivar resistant to the wheat stem sawfly (Cephus cinctus Norton). It was released jointly by the North Dakota State Univ. Agric. Exp. Stn., Fargo, and ARS-USDA in 1974. Tioga was selected as an F_4 derived F_3 bulk in 1966 from the cross 'Fortuna'/S6285. S6285 is a selection from the cross ND4/'Rescue'/II5017/513349 and includes the cultivars 'Thatcher', 'Kenya Farmer 338A', 'Rescue', 'Chinook', 'Frontana', 'Kenya 58', and 'Newthatch' in its pedigree.

The stem of Tioga is midtall, white, solid (filled with parenchyma tissue), midstrong, and inclined from below the base of the spike; the spike is dorsoventrally compressed, oblong to fusiform, middense, and apically awned; glumes are glabrous, white, short, and midwide; shoulders are midwide and square; beak is midwide, obtuse, 1 mm or less long, and keeled only in the upper half; kernels are red, middense, hard, and elliptical; germ is large; crease is midwide and deep; cheeks are angular; the brush is large and midlong.

Tioga is superior to the sawfly-resistant cultivar, Fortuna, in resistance to physiological black chaff, lodging resistance, and yield under low-yield environments. Tioga resembles Fortuna in height (88 vs. 86 cm), maturity (222 vs. 221 days), stem solidness rating (14.8 vs. 13.7), stem cutting (9 vs. 8%), and test weight (77.7 vs. 78.1 kg/ha) under North Dakota growing conditions.

Tioga is similar to Fortuna in its reaction to race 15B of stem rust (Puccinia graminis f. tritici Eriks & E. Henn.) and is susceptible to races 32 and 151. It is susceptible to leaf rust (P. recondita Rob. ex Desm.) and to certain leaf spot diseases such as Pyrenophora sp. Tioga is recommended for those areas where stem and leaf rust are not a problem.

The milling and baking quality of Tioga is satisfactory. It is slightly lower than Fortuna in flour yield, but equal or superior to Fortuna in all other quality factors. Tioga is higher in test weight, flour yield, and loaf volume than 'Chris', 'Manitou', or 'Waldron.' It is also equal to or better than these three standard cultivars in external and internal loaf characteristics. It is equal to the standard cultivars in flour ash, absorption, and dough handling properties. It is slightly below the averages of the standard cultivars in wheat and flour protein content and percentage of vitreous kernels.

Breeder seed of Tioga will be maintained by the North Dakota State Univ. Agric. Exp. Stn., Fargo, ND 58102.

REGISTRATION OF W-335 WHEAT
(Reg. No. 570)
E. L. Smith, L. H. Edwards, H. Pass, H. C. Young, Jr., and D. C. Abbott

'W-335' is a hard red winter wheat (Triticum aestivum L. em. Thell.) which is an F_5 derived line from 5*Scout*/'Agent' backcross population. It was released jointly by the Oklahoma and Texas Agric. Exp. Stns. in 1974. Seeds from 5*Scout*/Agent F_3 plants were grown at the Colorado Agric. Exp. Stn. in the fall of 1966, screened for leaf rust (Puccinia recondita) reaction in the greenhouse at Stillwater, Okla., and F_5 progenies of resistant lines were retested to identify lines homozygous for the gene of leaf rust resistance. Selection for agronomic characters among lines grown in observation nurseries in Oklahoma and several lines, including OK696731, were evaluated in performance trials in 1970. OK696731 was released jointly by the Southern Regional Performance Nursery in Fort Worth, Texas, and the USDA in 1970.

Osage is a hard red winter wheat. It is midtall and medium to medium late in maturity. It matures about 2 days later than 'Scout 66.' The stem is white. The spike is awned, fusiform, middense, and inclinate; glumes are glabrous, white, middense, and narrow; shoulders are midwide and oblique; the beaks are narrow, acuminate, and from 1.5 to 4.0 mm in length; the awns are white, 3 to 8 mm in length; the kernels are red, midlong, hard, and elliptical; the germ is small to midsized; the crease is midlong and middeep; the cheeks are rounded to angular and midsized to large, and midlong.

Osage is similar to Scout 66 in plant height, grain size, and grain yield. It is superior to Scout 66 in test weight, protein content, and loaf volume in all maturity groups. It is also superior to Scout 66 in resistance to physiological black chaff, lodging resistance, and is susceptible to races 4, 13, 14, 15, 19, and 23 of stem rust. W-335 resists lodging better than 'Centurk' and is susceptible to soilborne mosaic mosaic. W-335 resists lodging better than 'Scout 66,' but has on occasion tended to become lodged from past maturity. W-335 may be sensitive to altitude as its relative yields are better in environments not having relatively long mixing time and good leaf volume. W-335 flour yields are slightly lower than most hard winter wheats.

Breeder seed of W-335 will be maintained by the North Dakota State Univ. Agric. Exp. Stn., Fargo, ND 58102, and Nebraska Spring Wheat Foundation, Inc., PO Box 1300, Waverly, NE 68462.