In Pioneer yield tests, the grain yield advantage of 2548 averaged 202 kg ha\(^{-1}\) over Pioneer variety '2550' across 99 location-years (1985–1988), and 262 kg ha\(^{-1}\) over Pioneer variety '2551' across 100 location-years (1985–1988). In comparative trials with 'Caldwell' across 48 locations–years (1985–1988), 2548 averaged 5388 kg ha\(^{-1}\) and Caldwell averaged 4757 kg ha\(^{-1}\). Pioneer 2548 appears to be widely adapted to most soft red winter wheat growing regions north of Interstate 20, but planting should be avoided in those areas of the USA prone to frequent winter injury. Areas where wheat soil-borne mosaic virus is known to be present should also be avoided.

Pioneer 2548 is an awned semidwarf with short plant height (5 cm shorter than Pioneer '2555' on the average) and excellent straw strength. Test weight, winterhardiness, and drought tolerance of 2548 are most similar to those of 2550. Pioneer variety 2548 averages \(\approx 1\) d later at heading than 2555 in both the Corn Belt and Southeastern soft red winter wheat regions of the USA.

The coleoptiles of 2548 are white, and juvenile plant growth is semierect. Plant color at the boot stage is green to blue-green, but generally lighter than the other Pioneer soft red winter wheat varieties. The flag leaves are recurved but not twisted, and a waxy bloom is present on the first leaf sheath. The anthers are yellow. Stems are hollow and yellow at maturity. Spikes are generally middense to lax, tapering, and white at maturity. Glumes are of medium length, wide, and have generally oblique shoulders. Kernels are red, oval, shallow creased and the kernel brush is not collared. Kernel phenol reaction is ivory.

Pioneer variety 2546 demonstrates resistance to the prevalent races of leaf rust (caused by _Puccinia recondita_ Roberge ex Desmaz.) in the eastern USA, and has postulated to possess the _Lr3_ and _Lr11_ genes, based on seedling tests at the USDA Cereal Rust Laboratory in St. Paul, MN. It also carries resistance to stem rust (caused by _Puccinia graminis_ Pers.: Pers.), and _S\'>10_ has been postulated as the source. Pioneer variety 2546 is resistant to the prevalent races of powdery mildew (caused by _Erysiphe graminis_ DC.) in the Corn Belt. In the Southeast, however, it is moderately susceptible to the powdery mildew races, but the disease progresses very slowly on the plants.

Pioneer 2548 has resistance and/or tolerance to the most common organisms that cause leaf blights, including _Septoria tritici_ (caused by _Septoria tritici_ Roberge ex Desmaz.), _Septoria nodorum_ (caused by _Phaeosphaeria nodorum_ (E. Müller) Hedjaroude), and _Septoria tritici-repentis_ (Diedr.) Drechs.). It is moderately susceptible to wheat spindle-streak mosaic virus and susceptible to wheat soild-borne mosaic virus. Pioneer variety 2546 has tested susceptible to _Biotype E_ of _Hessian fly_ ( _Mayetiola destructor_ Say), according to screenings conducted by the USDA Entomology Laboratory at Purdue University, and possesses no known genes for resistance.

Pioneer 2548 has been tested by Pioneer cereal chemists since 1984, and has demonstrated acceptable soft wheat milling and baking quality. It is most similar in quality to 2550 for most milling and baking characteristics.

The generation sequence of seed production for 2548 will be breeder, foundation, registered, and certified. Cultivar protection under the Plant Variety Protection Act is pending. Breeder seed is maintained by Pioneer Hi-Bred International, Inc., Department of Cereal Seed Breeding, Route 1, Box 297A, Windfall, IN 46076.

M. M. Iwig,* C. Hayward, B. Iwig, B. Clarkson, G. Marshall, B. Edge, and K. Lively (1)

References and Notes


REGISTRATION OF '2555' WHEAT

Pioneer variety '2555' (Reg. no. CV-759, PI 532914) is a soft red winter wheat (_Triticum aestivum_ L.) developed by Pioneer Hi-Bred International, Inc., and released in 1986.

The parentage of 2555 is IN4946A4/'Hadden'/3/'Kaw- Vale'/'Vigo'/4/'Directour Journee'/4/Pioneer line W521. The exact parentage of Pioneer line W521 is unknown. Pioneer variety 2555 was developed by a modified pedigree method, with single-plant selections made in the F1 and F2 generations. An F3 headrow was harvested in the summer of 1981 and designated W1060B. W1060B was entered into a preliminary yield test, at two locations, in the fall of 1982. It was planted at 7 locations in the fall of 1982 and 12 locations in the fall of 1983. Breeder seed of W1060B was provided to the Pioneer parent seed operation in the fall of 1984 for initial foundation-level increase; it was tested at 13 locations with the designation YW546. It was designated as XW546 in the fall of 1985 and tested at 16 locations. It was released in the fall of 1986 as 2555 and was first sold in the fall of 1987.


In Pioneer yield tests, the grain yield advantage of 2555 averaged 477 kg ha\(^{-1}\) over Pioneer '2530' across 419 location–years (1983–1987), and 370 kg ha\(^{-1}\) over Pioneer '2551' across 340 location–years (1984–1987). In comparative trials with 'Caldwell' across 252 location–years (1983–1987), 2555 averaged 5516 kg ha\(^{-1}\) and Caldwell averaged 4898 kg ha\(^{-1}\). 2555 appears to be widely adapted to most soft red winter wheat growing regions north of Interstate 20, but planting should be avoided in those northern areas of the USA prone to frequent winter injury.

Pioneer 2555 is an awned semidwarf with short plant height (4 cm shorter than 'Arthur', on the average). It possesses good resistance to lodging, though not quite as good as 2551. Pioneer 2555 is more susceptible to winter injury than 2550 or 2551, being most similar to Pioneer '2553'. It is also more sensitive to drought stress than 2550, being similar to 2551. Pioneer 2555 usually heads about the same date as Caldwell in the Corn Belt region of the USA, and averages \(\approx 1\) to 2 d later than 'Florida 302' in the Southeast.

The coleoptiles and anthers of 2555 are purple, seedling anthocyanin is present, and juvenile plant growth is semierect. Plant color at boot is green (most similar to Pioneer 'S76'), and flag leaves are recurved but not twisted. Spikes are generally middense, tapering, and white to light yellow at maturity. Glumes are long, wide, and glabrous, and have generally oblique shoulders. Kernels are red, oval, and large (averaging 39 mg) and have a shallow crease. The kernel brush is not collared. Phenol reaction is black.

Pioneer variety 2555 is moderately resistant to the races of leaf rust (caused by _Puccinia recondita_ Roberge ex Desmaz.) common in the soft red winter wheat region. Pioneer 2555 is susceptible to stem rust (caused by _Puccinia graminis_...