by the Florida and Georgia Agricultural Experiment Stations. It has an excellent combination of grain and forage yield, disease resistance, and straw strength.

The parentage of Horizon 314 is Coker 84-15/TX84AB2171. Coker 84-15 was an unreleased advanced line that was tested in the 1985 Uniform Winter Oat Nursery. Its pedigree is CK76-30/5/CK75-27/4/CK76-29/3/CK76-23/CK75-28/CI8335. CI8335 is an Avena sterilis L. line, used as a source of resistance to crown rust (caused by Puccinia coronata Corda. f. sp. avenae Eriks.). CK76-30 was released as ‘Southern States 7630’. All other parents of Coker 84-15 were unreleased advanced lines. Coker 84-15 appears in the pedigree of several other oat cultivars including ‘Chapman’ (Blount et al., 2001), ‘Harrison’, and ‘Terral Secretariat LA495’. TX84AB2131 is a Texas breeding line in which the crown rust resistance genes from ‘TAM O-301’, ‘TAM O-312’, ‘Coker 227’, and ‘Coker 234’ were combined with the stem rust (caused by Puccinia graminis Pers.: Pers. f. sp. avenae Eriks. & Henn.) resistance gene from ‘Alpha’ (CI9221).

Horizon 314 was tested experimentally as FL92OHR31,314 and as FLX499-1-B3-G6. It was selected from material donated by the Northrup-King Seed Company (Novartis Seeds, Syngenta Seeds) to the USDA-ARS when the Coker Pedigreed Seed Company oat breeding program (owned by Northrup-King) was discontinued in 1989. Twenty-five thousand single panicle selections that had been harvested from the 1988 Coker program nurseries were planted at Quincy, FL, for evaluation in 1992. Horizon 314 was a single row designated 31,314 selected from that material.

Horizon 314 is 3 to 6 d later maturing than Chapman. It is higher yielding, has a heavier test weight, and is about 10 cm taller than Chapman. At the time of its release in 2000, Horizon 314 exhibited excellent resistance to prevalent races of crown rust, and was moderately resistant to Helminthosporium leaf spot, (caused by Helminthosporium sativum Pam., King & Bakke). It has been rated as susceptible to crown rust in south Texas. It is susceptible to stem rust and Barley yellow dwarf virus.

Juvenile plants of Horizon 314 are semierect with the culms midsize and glabrous. The flag leaves are midsize and drooping. The panicles are erect, equilateral, dark green in color, and florets have occasional awns 2 to 3 cm in length. Horizon 314 has leaves that are more upright than most other oat cultivars grown in the southeastern USA. Horizon 314 has good winter survival and moderate straw strength. Seeds of Horizon 314 are long, moderately plump, tan in color, and similar to those of Chapman.

Horizon 314 was first included in a yield evaluation trial at Quincy, FL, in 1993. In 1995, it was entered in the Elite Oat Test and in the USDA Regional Uniform Winter Oat Yield Nursery, which was grown at 20 stations in 13 states. In the Elite Test, grown at four locations, Horizon 314 produced an average of 2688 kg ha⁻¹, which was higher than all the other cultivars except Chapman, which produced 2760 kg ha⁻¹. It headed 6 d later than Chapman at the Quincy location. In regional testing, Horizon 314 was the highest-yielding oat.

In 1998, Horizon 314 was recommended as Georgia’s official state perennial forage oat cultivar for stations in Georgia, Horizon 314 produced an average of 2921 kg ha⁻¹. Average yields in the 2000–2001 Small Grains Performance Tests at Tifton, Griffin, and Ocilla, Ga., were 3157 kg ha⁻¹. Horizon 314 yield was only 2 yr (2000–2001) grain yield at Griffin, Ga., was 3136 kg ha⁻¹ and 3316 kg ha⁻¹, respectively. In oat forage trials conducted in 2000, Horizon 314 had an average yield of 3316 kg ha⁻¹, compared with an average of 3046 kg ha⁻¹ in the trial.

In 2000, Horizon 314 was recommended by the U.S. Plant Variety Protection Board for distribution. Horizon 314 has been licensed exclusively by the Georgia Cooperative Extension Service for marketing and promotion of the variety. For more information, contact the seed is available from the Florida Cooperative Extension Service, the seed is contained in Horizon 314 and the new source of Horizon 314 if interested in purchasing the Horizon 314. New cultivars, germplasm, and other information.

R.D. Barnett,
J.W. Johnson


Hatch funds allocated to the Horizon 314 oat were supplied by the Georgia Crop Improvement Association.

Published in Crop Sci. 42:1741–1743.

Registration of Horizon 314 oat (Avena sterilis L. subsp. hypogaea var. hypogaea “Horizon 314”).

Reg. no. 01748; Oat cultivar resistant to crown rust (Puccinia coronata Corda f. sp. avenae Eriks.)

Horizon 314 oat is a semierect, narrow-seeded oat with good winter survival and moderate straw strength.

New cultivars, germplasm, and other information.


Hatch funds allocated to the Horizon 314 oat were supplied by the Georgia Crop Improvement Association.

Published in Crop Sci. 42:1741–1743.