

Horizon 314 Oats: A New Oat for the Southeastern U.S.¹

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Horizon 314 is a new full-season winter oat (*Avena sativa* L.) variety cooperatively released by the Florida and Georgia Agricultural Experiment Stations in 1999. It is well suited as a winter grazing crop for beef or dairy producers, will make an excellent grain, hay or silage crop, and is excellent for wildlife plots. In comparison to Chapman it is higher yielding, has a heavier test weight, is 3-6 days later in heading, and 4 inches taller in height. It has good winter hardiness, good crown rust resistance, tillers well, and has a dark green plant color. Seed of Horizon 314 is available for planting for Fall of 2001.

Origin

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) to the USDA-ARS when the Coker Pedigreed Seed Company oat breeding program (owned by Northrup-King) was discontinued in 1989. A large number (25,000) of single-panicle selections that had been harvested from the 1988 nurseries of the Coker program were planted

at Quincy Florida for evaluation in 1992. Horizon 314 was a single row designated 31,314 selected from that material and it originated from the cross (X499): Coker 84-15/TX84AB2171.

Characteristics

In comparison to Chapman, Horizon 314 is higher yielding, has a heavier test weight, is 3-6 days later in heading, and 4 inches taller in height. It has good winter hardiness, good crown rust resistance, tillers well, and has a dark green plant color. Horizon 314 has leaves, which are more upright than most other varieties and is white-seeded.

The crown rust resistance of Horizon 314 has been very good in the Southeast, although it has been rated as susceptible to crown rust in south Texas. It is susceptible to stem rust and barley yellow dwarf virus.

Performance

Horizon 314 was first included in a yield evaluation trial at Quincy, Florida in 1993. In 1995 it

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was entered in the Elite Oat test and in the 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 75 bu/A, higher than all the check cultivars except Chapman, which produced 77 bu/A. It headed 6 days later than Chapman at the Quincy location. In regional testing, Horizon 314 was the highest yielding entry at 89 bu/A, when averaged across 18 locations. In comparison to Chapman, Horizon 314 had a higher test weight, 31 lbs/bu compared to 29 lbs/bu, was 20 cm taller, and 5 days later in heading.

In the 1996 Regional Uniform Winter Oat Yield Nursery, Horizon 314 was the highest-yielding entry (111 bu/A). In comparison to Chapman it was higher yielding, had a slightly heavier test weight, was 3 days later in heading, and 10 cm taller. It had 11% lodging compared to 21% for the entire test. Horizon 314 had 53% winter survival compared to 50% for the test average at seven locations.

In 1998, Horizon 314 was included in both Florida and Georgia official state performance trials. Across the five locations in Georgia, Horizon 314 was the highest-yielding entry at 82 bu/A. Average state variety test results (2000-2001 Small Grains Performance Tests, Univ. of Georgia) reported three-year (1999-2001) and two-year (2000-2001) seed yields of 92 bu/A and 106 bu/A for Horizon 314, respectively. Average three-year (1999-2001) and two-year (2000-2001) averaged seed yields over all oat entries in the trials, were 88 bu/A and 98 bu/A, respectively.

Horizon 314 is considered to be a good forage producer. Forage dry matter yields for Horizon 314, from the 1999-2000 Small Grains Performance Tests, Univ. of Georgia, averaged over Tifton, Griffin and Plains locations, were 3.4 tons/A and 3.6 tons/A for three-year (1998-2000) and two-year (1999-2000) studies, respectively. In oat forage trials conducted at Quincy, Florida in 2000, Horizon 314 had a dry matter forage yield of 5.4 tons/A, compared to 5.0 tons/A, averaged over all entries in the trial.

In summary, Horizon 314 is a full-season winter oat with outstanding grain production potential, superior winter survival, and good disease resistance. Its disease resistance and high forage yields will also

make it a high-quality forage oat for winter grazing or haying.

Seed Availability

U.S. plant variety protection is pending. Horizon 314 has been licensed exclusively to Plantation Seed, Newton, Georgia for marketing and promotion. Breeders seed of Horizon 314 is available from the Florida Agri. Exp. Sta. Recipients of the seed are asked to make appropriate recognition of the source of Horizon 314 if it is used in the development of a new cultivar, germplasm, parental line or genetic stock.