Clintford has an outstanding combination of straw strength, yield potential, kernel size, test weight, and percent groats. The parentage is 'Clinton 59'/7/'Landhafer'/2/'Milford' PI 193101. Clintford was selected by the modified pedigree method with plant selection in the F₁, F₂, and F₃ generations. Breeder seed was formed from progenies of 74 plants selected in the F₂ generation and was observed for uniformity in the F₃ and F₄ generations. At the time of its release, Clintford exceeded other cultivars recommended in Indiana in yield, straw strength, short height, test weight, kernel size, and percent groats.

Clintford has stems that are moderately short (about 79 cm), strong, and glabrous. Leaves are green in color and the flag leaf is upright at booting. The leaf below the flag leaf averages about 16 mm in width and 27 cm in length. The coleoptile color is green. Panicles are equilateral and intermediate in density, averaging 9.5 cm wide and 18 cm long. Panicles average 19 branches from six whorls. Branches are ascending and commonly one arises from the lowest rachis node. The rachis is flexuous. The lemma is white, commonly with a light brown, tinge, and fluoresces. Lemma length, averaging about 13 mm, commonly extends about 2 mm beyond the groat. Kernels are very plump and high in percent groats (4-year average, 73%). Clintford is similar in flowering time to 'Tippecanoe' and about 2 days earlier than 'Clintonland' (Reg. No. 114).

Clintford has resistances to crown rust (Puccinia coronata Cda. var. avenae Fraser and Led.) of the 'Bond' (Pe-3 and Pe-4) and 'Landhafer' (Pe-5) types and to stem rust (Puccinia graminis Pers. f. sp. avenae Ericks. and E. Henri.) derived from Clinton 59 (P. coronata). It is susceptible to all the current races of P. coronata and P. graminis occurring in Indiana. Clintford has been resistant to loose smuts (Ustilago avenae (Pers.) Rost.) in Indiana. It is moderately susceptible to the barley yellow dwarf virus and to Septoria (Septoria avenae Frank f. sp. avenae).

Clintford became a major cultivar in Indiana and in the northcentral U.S. Its hectarage expanded steadily from 12% of the Indiana crop in 1968 to 33% in 1971. Breeder seed is maintained by the Purdue University Agricultural Experiment Station, West Lafayette, IN 47907.

Diana is 1 day earlier than Clintford and similar to it in height (average 79 cm). Stems are glabrous, erect, and strong at the pre-ripen and post-ripen stages of grain development. The coleoptile color is green, young plant growth is erect, and lower leaf sheaths and leaf blade edges are glabrous. The plant is medium green in color. The leaf below the flag leaf averages 16 mm in width and 25 cm in length. The flag leaf is erect at an inclination of 73°.

Panicles are equilateral and intermediate in size, averaging 9 cm in width and 19 cm in length. Panicle branches are ascending. An average of 18 branches arise from six whorls, one generally from the lowest rachis node. The rachis is flexuous.

The grain is plump and has a 1 to 2% higher than average protein content. The lemma and palea color generally is light brown, ranging in different seasons from almost copper-colored to a medium brown. About 15% of the kernels fluoresce in blacklight. Lemmas average 12 mm long and extend about 2 mm beyond the groat. The lemma is generally awnless but occasionally has awn traces.

Diana has adult plant resistance to crown rust derived from P. coronata and P. graminis (Reg. No. 293). Its resistance to stem rust (Puccinia graminis Pers. f. sp. avenae Ericks. and E. Henri.) is provided by genetic factors Pg-2 and Pg-4; additional resistance is derived from 'Ukraine'. Diana is highly resistant to the loose smuts (Ustilago avenae (Pers.) Rost.) in Indiana, and moderately susceptible to the barley yellow dwarf virus and Septoria (Septoria avenae Frank f. sp. avenae).

Diana was grown on 1 to 2% of the oat hectarage in Indiana, 1970 to 1976. Breeder seed is maintained by the Purdue University Agricultural Experiment Station, West Lafayette, IN 47907.

REGISTRATION OF CROP CULTIVARS

REGISTRATION OF DIANA OAT

Diana is 'Clintonland'/4/Ark. 674/'Clinton'/2 ('Clinton 59'/3/'Milford'/5/'Shield' sib)/5 Clinton/2/Pot. 17434-3. Diana was selected by the modified pedigree method of breeding with plant selection in the F₁, F₂, and F₃ generations of the cultivar. Breeder seed was formed by cross-pollinating 162 F₂ plants to give progeny rows that were uniform in maturity, height, and resistance to the crown rust disease (Puccinia coronata Cda. var. avenae Fraser and Led.).

Diana has a pure line selection from the cross 'Carolee'/Fulgrain'/5/Fulgrain/4 'Cimarron'/3/Hajara'/5/Fulgrain'/5/Fulgrain'/5 'Clintland'/5 'Carolee'/5 'Coker 227'. Diana is the final selection (Fe). The last cross was made at Raleigh, N.C., in 1967, and the final selection (Fe) was made in 1973.

In 23 state and regional tests grown from 1975 through 1978, Brooks yielded 19% more than 'Salem' and 3% more than 'Coker 227'. It is similar in test weight to Carolee and Salem and has excellent winterhardiness. In 16 state and regional tests grown from 1975 through 1978, its average survival was 43% greater than 'Salem' and 3% less than Coker 227. It has some tolerance to barley yellow dwarf virus and moderate resistance to soil-borne mosaic virus.

Because of high yield combined with moderately high grain protein and low hull percentage, Brooks produces exceptionally high yields of protein per acre. It has at least a 25% advantage in kg/ha of protein over commonly grown cultivars. This cultivar should be widely adapted in the southern United States.

REGISTRATION OF BROOKS OAT

Brooks' oats (Avena sativa L.), CI 9260, NC 73-15, is a pure line selection from the cross 'Carolee'/Fulgrain'/5/Fulgrain/4 'Cimarron'/3/Hajara'/5/Fulgrain'/5 'Clintland'/5 'Carolee'/5 'Coker 227'. The last cross was made at Raleigh, N.C., in 1967, and the final selection (Fe) was made in 1973.

In 23 state and regional tests grown from 1975 through 1978, Brooks yielded 19% more than 'Salem' and 3% more than 'Coker 227'. It is similar in test weight to Carolee and Salem and has excellent winterhardiness. In 16 state and regional tests grown from 1975 through 1978, its average survival was 43% greater than 'Salem' and 3% less than Coker 227. It has some tolerance to barley yellow dwarf virus and moderate resistance to soil-borne mosaic virus.

Because of high yield combined with moderately high grain protein and low hull percentage, Brooks produces exceptionally high yields of protein per acre. It has at least a 25% advantage in kg/ha of protein over commonly grown cultivars. This cultivar should be widely adapted in the southern United States.