

PARK OATS FOR IDAHO¹

FRANK C. PETR and HARLAND STEVENS²

A RECENTLY developed oat variety named Park was released to certified seed growers by the University of Idaho Agricultural Experiment Station in 1958. Park oats is similar in growth characteristics to Overland and is well adapted for use as a companion crop for alfalfa and clover. Its stiff straw, uniform height, and even ripening make it suitable for com-

bine harvesting. The primary advantage of Park over the widely grown Overland is its greater yield capacity.

The Park oat was developed through the cooperative efforts of several state experiment stations and the United States Department of Agriculture to provide more productive and better adapted varieties for the farmer.

History

The cross, Clinton x Overland, was made by Harland Stevens at Aberdeen, Idaho in 1942. The following year a backcross to Overland, designated X43BO, was made by F. A. Coffman. Plant selections were made by Coffman in subsequent generations of this backcross population and tested for disease resistance by cooperating pathologists at Beltsville, Maryland; Ames, Iowa; Pullman, Washington; and Madison, Wisconsin³. In 1946, Harland Stevens, F. A. Coffman, and H. A. Rodenhiser selected a number of the most promising rows including a row designated as 46Ab-5983.

Seed of this selection, along with a number of others, was supplied to several state agricultural experiment stations for preliminary testing in 1947. It soon became evident that Sel. 46Ab-5983 was a potential variety for irrigated areas. In 1951, it was named Park, assigned the number, C.I. 6611,⁴ and entered in uniform regional tests in the Northwest. Its excellent performance in these tests indicated its wide adaptability. Park was first released in Montana in 1953 as an oat for irrigated areas. It has been tested at various locations in Idaho with good results.

Description

Park can be distinguished from most other oat varieties by its upright leaves which remain dark green in color from shortly

after emergence until the boot stage. At this stage of growth the medium-sized uppermost leaf is very erect. After heading

the foliage develops a glaucous gray-green color. The leaves of Park are generally mid-wide and there are no hairs on the leaf margins or on the nodes of the culm. Park is medium in height, rarely exceeding 42 inches even under conditions of ample moisture and high fertility.

The panicles are rather short with medium short somewhat elevated branches and the rachis is straight. There are usually 5 to 6 whorls or branches in the panicle. Under normal growing conditions most of the spikelets contain three kernels

The kernels of Park are short and plump. The glumes are fine in texture and only slightly longer than the largest of the kern-

els which they enclose. The lemma and palea (hull) enveloping the groat are white. When viewed under ultraviolet light, Park kernels are fluorescent. Straight to slightly twisted awns occur occasionally under certain conditions but usually only on late tillers.

Separation of primary and secondary kernels is by fracture of the rachilla segment, typical of many commonly cultivated oats. The rachilla is short and wide. The base of the primary floret or kernel is rather blunt, but no abscission layer is evident. Occasionally short hairs can be found on the base of the primary kernel but usually are not evident in the threshed grain.

Yield and Quality

Park has a good yield record under both irrigated and non-irrigated conditions. Table 1 shows its yield record over a period of years at the Aberdeen Experiment Station and for a 2-year period at the Twin Falls Experiment Station. At Aberdeen, Cody, Bannock, and Park were essentially equal in productivity with average yields of 151.0, 150.9, and 150.4 bushels per acre, respectively. At Twin Falls, Park has the high yield of 126.1 bushels per acre, while Cody yielded 120.3 and Bannock 107.3 bushels per acre. At Aberdeen, the test weight of Park was only slightly lower than that for Cody and Overland but has been approximately a pound below that of Bannock. Throughout the period of testing, Park

has had an average lodging record of 5.5 percent, whereas Overland and Cody have had lodging percentages of 11.7 and 16.5, respectively. Under similar conditions the tall variety, Bannock, has lodged 28.5 percent.

Park is about two days later in maturity than either Overland or Cody, and about two days earlier than Bannock.

In spite of its mid-season maturity, Table 1 shows that the yield of Park was the highest at Tetonia, Moscow, and Sandpoint. These locations have a comparatively high annual rainfall. In limited tests under very dry conditions, Park has not been superior in performance.

¹ Joint contribution from the Idaho Agricultural Experiment Station and the Crops Research Division, A.R.S., U.S.D.A.

² Agronomists, Crops Research Division, A.R.S., U.S.D.A.

³ Acknowledgment is given to H. C. Murphy, F. A. Coffman, C. S. Holton, H. L. Shands and M. D. Simons for providing data on the disease reactions of Park.

⁴ C. I. refers to the accession number assigned by the Crops Research Division, U.S.D.A.

Table 1. Summary data on Park and recommended oat varieties in Idaho.*

		YIELD in bushels per acre						
		Non-irrigated Stations				Irrigated Stations		
C.I. No.	Variety	Tetonia 4 years	Moscow 5 years	Sand- point 2 years	Average	Twin Falls 2 years	Aber- deen 7 years	Average
3916	Cody	38.3	107.5	59.5	68.4	120.3	151.0	135.6
4181	Overland	35.7	98.6	78.9	71.1	91.4	143.9	117.6
6611	Park	40.6	108.9	92.4	80.6	126.1	150.4	138.2
2571	Marida	35.7	107.7		71.1	104.4	144.6	124.5
2592	Bannock	37.8	102.4	80.5	73.6	107.3	150.9	129.1
1145	Victory**	36.6	99.5	79.0	71.7	59.2	145.5	102.3

		TEST WEIGHT lbs./bu.			LODGING percent
C.I. No.	Variety	Aberdeen	Moscow	Sand- point	
3916	Cody	39.1	34.5	28.5	16.5
4181	Overland	39.2	35.6	36.0	11.7
6611	Park	38.8	35.3	35.5	5.5
2571	Marida	39.2			
2592	Bannock	39.8	35.6	34.5	28.5
1145	Victory**	40.2	36.4	35.5	19.3

* Data from Tetonia was provided by Hugh McKay and Jerry Ames; from Moscow by K. H. Klages; from Sandpoint by C. T. Brackney and from Twin Falls through the cooperation of Marshall Le Baron.

** Formerly recommended in Idaho.

Disease Resistance

With the exception of loose and covered smut, oat diseases are comparatively rare in Idaho. Tests made by cooperating pathologists indicate that Park is resistant to many but not all races of smut. Park also has re-

sistance to a number of races of stem rust and to crown rust races 45, 57, and 101. Park is susceptible to Victoria blight caused by *Helminthosporium victoriae* Meehan and Murphy but this disease is not known in Idaho.

SUMMARY

Park was recently released to certified seed growers in Idaho. It is recommended for production in irrigated areas of the State because of its high yielding capacity and outstandingly stiff straw. Park is also recommended for the more humid of the non-irrigated areas of Idaho. It was first released in Montana in 1953.

Park is a white-kerneled oat with quality comparable to Overland, but its test weight is inferior to that of Bannock.

Park is sufficiently disease

resistant for Idaho conditions. It is moderately resistant to stem rust and smut, but susceptible to Victoria blight.

Park is about two days later in heading than Overland and Cody, but it is earlier than Bannock.

Park is a relatively short oat. Even under conditions of high fertility and moisture it maintains its resistance to lodging and does not produce excessive straw. These characteristics make Park a desirable companion crop in the establishment of alfalfa and clover.



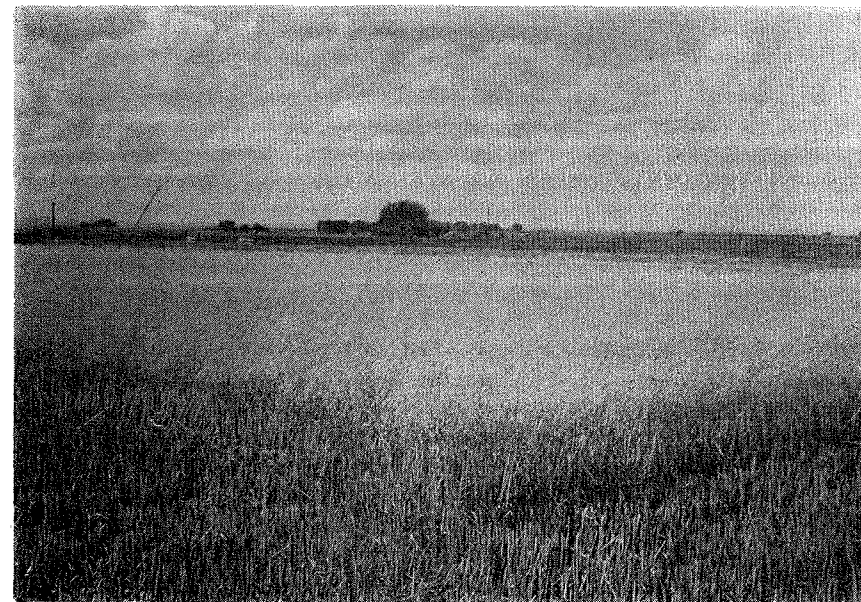
UNIVERSITY OF IDAHO

College of Agriculture

Park Oats for Idaho

FRANK C. PETR

HARLAND STEVENS



IDAHO Agricultural
Experiment Station

Bulletin 290
April 1958