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S. P. Swenson
South Dakota State University

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MIOMARK OATS

By S. P. Swenson*¹

Agricultural Experiment Station
South Dakota State College
Brookings, S. D.

M IOMARK, a superior new variety of oats, was released and distributed to growers for 1941 production by the Agronomy Department of the South Dakota Agricultural Experiment Station. This variety was known as F40 while being tested at the central experiment station, the experiment substations and in farm demonstrational trials.

Miomark was developed by backcrossing a selection of the cross Iogold x Markton to Markton.² The name "Miomark" was adopted because it indicated the pedigree and the order of combining the varieties, Markton x Iogold-Markton. Markton is highly resistant to the smuts while Iogold possesses earliness, good yielding ability and resistance to stem rust. The purpose of the cross was to develop an early high-yielding variety of oats which possesses both smut and stem rust resistance.

Miomark is an early maturing variety of white oats which is highly resistant to local races of loose and covered smut and resistant to the most prevalent races of stem rust. It is susceptible to leaf (crown) rust of oats but because this disease has seldom been ser-

* Formerly Associate Agronomist.

1. The writer is indebted to E. E. Sanderson, Agronomy Foreman at the Agricultural Experiment Station at Brookings, S. W. Sussex, Foreman of the Experiment Substation at Highmore, and Edmund Stickel, Foreman of the Experiment Substation at Eureka, for their kind cooperation in conducting the oats variety tests.
2. Crosses made by Mathew Fowlds, formerly Assistant Agronomist.

ious in South Dakota, this lack of resistance does not appear to justify withholding this variety from growers. It is more vigorous in growth and grows from three to seven inches taller than Richland or Iogold. For growers desiring a high yield of straw, it appears to possess a decided advantage over other early varieties. It generally heads out from one to three days later than Richland and maintains a longer post-heading period generally maturing from two to four days later. Because of its slightly later maturity, it probably is not as well adapted to central and western South Dakota as to the eastern and northern sections. In straw strength, it appears to rank between Richland and Iogold and will lodge under conditions of abundant moisture on heavy rich soil. Under most conditions, however, its strength of straw is very satisfactory.

Miomark has consistently outyielded Richland at Brookings and Eureka, and has been equal to or slightly higher than Richland in test weight. At Highmore, its performance has been about equal to that of Richland. In farm demonstrational trials conducted in 1940, it outyielded Richland by nine percent for the state as a whole.

Miomark was released and distributed as a variety which in the eastern and northern sections of South Dakota should usually yield increased amounts of both grain and straw. Because of its combined resistance to both the smuts and to stem rust, it should have decided advantages over the varieties now being grown.

The data on which the above statements are based are presented in Tables 1 to 4 which follow. They are the results from experimental tests conducted at the Agricultural Experiment Station at Brookings, at the Agricultural Experiment Substations at Highmore and Eureka and from farm demonstrational tests conducted by county extension agents in the various counties. All varieties used for comparison are standard varieties excepting F334 which was released on a trial basis from the South Dakota Agricultural Experiment Station a few years ago but which has never been enthusiastically recommended because of its weak straw.

Table 1. Summary of average yields and other data on Miomark in comparison with four other varieties of oats grown in rod rows for the period 1937-1940 and in 1/66 acre plots at Brookings for the period 1938-1940.

| | Varieties | Average Yield | | Wt. lbs. per Bu. | Date Headed | Date Ripe | Height, inches | Lodging | |
|--------------------|-----------|---------------|------------|---------------------|----------------|--------------|-------------------|---------|--------|
| | | Bu. per A. | % Richland | | | | | Percent | Degree |
| ROD ROWS | Miomark | 76.1 | 116 | 32.0 | 6-18 | 7-20 | 35 | 27 | 25 |
| | logold | 67.6 | 103 | 29.6 | 6-18 | 7-18 | 32 | 17 | 22 |
| | Gopher | 66.0 | 100 | 31.6 | 6-18 | 7-18 | 33 | 20 | 26 |
| | Richland | 65.7 | 100 | 30.6 | 6-17 | 7-17 | 30 | 16 | 28 |
| | F 334 | 62.8 | 96 | 28.6 | 6-19 | 7-20 | 32 | 35 | 27 |
| 1/66 ACRE PLOTS | Miomark | 64.6 | 120 | 34.1 | 6-21 | 7-21 | 35 | 5 | 20 |
| | F 334 | 57.5 | 107 | 32.6 | 6-23 | 7-0 | 32 | 27 | 38 |
| | Gopher | 56.5 | 105 | 34.6 | 6-21 | 7-18 | 30 | 3 | 30 |
| | logold | 55.5 | 103 | 32.9 | 6-20 | 7-19 | 31 | 17 | 25 |
| | Richland | 53.8 | 100 | 33.8 | 6-19 | 7-17 | 28 | 1 | 25 |

Table 2. Summary of average yields and other data on Miomark in comparison with three other varieties of oats grown in rod rows for the period 1938-1940 and in 1/66 acre plots the period 1939-1940 at Highmore.

| | Varieties | Average Yield | | Wt. lbs. per Bu. | Date Headed ¹ | Date Ripe ¹ | Height, inches ¹ | Lodging | |
|--------------------|-----------|---------------|------------|---------------------|-----------------------------|---------------------------|--------------------------------|---------|--------|
| | | Bu. per A. | % Richland | | | | | Percent | Degree |
| ROD ROWS | Miomark | 39.3 | 128 | 32.2 | 6-9 | 7-9 | 37 | 5 | 5 |
| | Gopher | 33.8 | 110 | 30.3 | 6-9 | 7-7 | 34 | 0 | 0 |
| | logold | 30.8 | 101 | 29.8 | 6-8 | 7-9 | 33 | 25 | 50 |
| | Richland | 30.6 | 100 | 30.7 | 6-8 | 7-8 | 33 | 0 | 0 |
| 1/66 ACRE PLOTS | Sixty-day | 41.9 | 104 | 30.5 | 6-12 | 7-10 | 36 | 0 | 50 |
| | Richland | 40.4 | 100 | 31.0 | 6-12 | 7-11 | 36 | Trace | — |
| | Gopher | 38.8 | 96 | 31.5 | 6-14 | 7-11 | 36 | 1 | 50 |
| | Miomark | 37.9 | 94 | 30.5 | 6-17 | 7-13 | 41 | 0 | — |
| | Cole | 37.2 | 92 | 31.0 | 6-12 | 7-10 | 36 | 0 | 41 |
| | logold | 34.9 | 86 | 31.5 | 6-15 | 7-12 | 37 | 1 | 40 |

1. Data in these columns for 1939 only.

Table 3. Summary of average yields and other data on Miomark in comparison with four other varieties of oats grown in 1/50 acre plots at Eureka for the period 1939-1940.

| | Varieties | Average Yield | | Wt. lbs. per Bu. | Date Headed | Date Ripe | Height, inches |
|--|-----------|---------------|------------|---------------------|----------------|--------------|-------------------|
| | | Bu. per A. | % Richland | | | | |
| | Miomark | 22.3 | 121 | 33.7 | 6-19 | 7-17 | 25 |
| | logold | 19.1 | 103 | 32.1 | 6-19 | 7-16 | 22 |
| | Richland | 18.5 | 100 | 34.0 | 6-17 | 7-15 | 22 |
| | F 334 | 17.2 | 93 | 33.3 | 6-20 | 7-16 | 23 |
| | Rainbow | 17.0 | 92 | 32.3 | 6-21 | 7-16 | 23 |

Table 4. Summary of yields and weights per bushel of Miomark in comparison with three other varieties of oats grown in county extension demonstration trials in 15 counties in 1940.¹

| District and County | Yield in bushels per acre | | | | Weight pounds per bushel | | | |
|---|---------------------------|------------|------------|------------|--------------------------|------------|------------|------------|
| | MIOMARK | Richland | Gopher | Rainbow | MIOMARK | Richland | Gopher | Rainbow |
| Northeastern: | | | | | | | | |
| Brown | 34.9 | 33.3 | 18.9 | 31.3 | 36.0 | 34.0 | 27.0 | 33.0 |
| Grant | 72.5 | 60.7 | 58.5 | 61.5 | 29.0 | 30.0 | 29.0 | 26.0 |
| Codington | 39.5 | 46.4 | 42.7 | 40.7 | 36.0 | 34.0 | 33.0 | 32.0 |
| Deuel (Nicola) | 93.2 | 86.8 | 80.7 | | 33.0 | 33.0 | 34.0 | |
| Deuel (Angle) | 85.5 | 88.6 | 64.7 | 97.4 | 31.0 | 33.0 | 31.0 | 33.0 |
| Deuel (Johnson) | 59.7 | 72.8 | 55.3 | 56.6 | 34.0 | 33.0 | 32.0 | 30.0 |
| Hamlin | 37.3 | 34.8 | 27.3 | 32.0 | 32.0 | 32.0 | 33.0 | 39.0 |
| Percent of Richland | 100 | 100 | 82 | 95 | 101 | 100 | 96 | 98 |
| Southeastern: | | | | | | | | |
| Lake | 20.9 | 26.3 | 17.5 | | 33.0 | 31.0 | 32.0 | |
| Moody | 59.5 | 49.0 | 49.5 | 47.9 | 35.0 | 32.0 | 32.0 | 35.0 |
| McCook | 80.9 | 69.8 | 62.5 | | 34.0 | 34.0 | 36.0 | |
| Minnehaha (Englehat) | 85.6 | 84.0 | 76.6 | 74.3 | 33.0 | 32.0 | 30.0 | 32.0 |
| Minnehaha (Iverson) | 77.5 | 71.5 | 69.8 | | 32.0 | 32.0 | 30.0 | |
| Minnehaha (Nessan) | 102.7 | 78.0 | 82.6 | 97.5 | 35.0 | 35.0 | 33.0 | 34.0 |
| Percent of Richland | 113 | 100 | 95 | 104 | 103 | 100 | 98 | 102 |
| North Central: | | | | | | | | |
| Walworth | 14.3 | 6.1 | 13.8 | | 29.0 | 29.0 | 27.0 | |
| Corson (Bieber) | 54.5 | 34.9 | 40.0 | 41.9 | 32.0 | 32.0 | 33.0 | 29.0 |
| Corson (Farstad) | 25.3 | 19.6 | 16.8 | 32.7 | 30.0 | 26.0 | 29.0 | 30.0 |
| Percent of Richland | 155 | 100 | 117 | 137 | 105 | 100 | 102 | 102 |
| East Central: | | | | | | | | |
| Kingsbury | 11.8 | 13.0 | 16.1 | 9.9 | 29.0 | 28.0 | 29.0 | 26.0 |
| Beadle | 16.9 | 18.7 | 34.7 | 18.3 | 27.0 | 29.0 | 30.0 | 27.0 |
| Percent of Richland | 91 | 100 | 160 | 89 | 98 | 100 | 104 | 93 |
| South Central: | | | | | | | | |
| Douglas | 8.6 | 9.9 | 10.2 | 7.2 | 31.5 | 32.5 | 31.5 | 33.0 |
| Lyman | 37.3 | | 37.2 | | 29.0 | | 25.0 | |
| Percent of Richland | 87 | 100 | 103 | 73 | 97 | 100 | 97 | 102 |
| Percent of Richland for Entire State | 109 | 100 | 93 | 101 | 102 | 100 | 98 | 99 |

1. Data obtained through the courtesy of U. J. Norgaard, Extension Agronomist, and the county extension agents conducting the trials.