

Barley Variety Performance in Michigan

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In recent years, barley has become an attractive alternative feed grain for livestock, particularly dairy and beef cattle. Its reputation for low production costs is particularly attractive in times of economic adversity for farmers, and like wheat, barley responds well to good management.

Role of Barley in Michigan

In 1985, about 40,000 acres were devoted to barley production in Michigan. This was double the all-time low of 20,000 acres in 1978, but far below the all-time record of 303,000 acres in 1932. By far the greatest proportion planted (95 to 98 percent) is spring barley, most (about 80 percent) of which is intended for malting purposes. To qualify for malting, the barley must be bright and unweathered, practically free of other grains and foreign material, contain little or no broken, skinned, or otherwise damaged kernels, and meet other appropriate quality standards.

Aside from its use for malting, barley is a high quality feed grain and is a viable alternative or supplement to corn in many situations. Some of its features include:

- Its feeding value is comparable (90 percent) to that of corn, with a higher protein content and lower total energy supply.
- Good barley yields can be produced with substantially less costs in labor, equipment, and chemicals.
- Its range of adaptation to northern latitudes is much greater than that of corn; thus good yields of barley can be produced in latitudes where corn is not profitable.
- Barley is usually harvested in July when weather conditions are favorable, compared to November or December when most corn is harvested. This also corresponds to greater availability of labor and equipment. Therefore, production of barley offers the opportunity of better utilization of both time and equipment.

Table 1. Performance and characteristics of spring barley varieties tested in Tuscola, Huron, and Ingham counties from 1979 to 1985.

| Variety | Origin | No. of tests | Test Yield (bu/acre) | Weight (lb/bu) | Height (in.) | Heading Date | Use |
|---------|-----------|--------------|----------------------|----------------|--------------|--------------|--------------|
| Morex | Minnesota | 18 | 87.6 | 50.0 | 35 | 6/13 | Malting/feed |
| Robust | Minnesota | 18 | 89.9 | 50.8 | 34 | 6/13 | Malting/feed |
| Larker | N. Dakota | 17 | 85.3 | 50.4 | 35 | 6/13 | Malting/feed |
| Bowers | Michigan | 23 | 92.2 | 49.9 | 34 | 6/17 | Feed |
| Leger | Canada | 6 | 94.0 | 51.6 | 38 | 6/17 | Feed |

Table 2. Yield of spring barley varieties from performance trials in 1985.¹

| County: | Presque Isle | Missaukee | Isabella | | Tuscola | |
|---------|--------------|-----------|------------------------|------------------------|---------|-----------------------|
| Variety | | | Seeding rate 2 bu/acre | Seeding rate 3 bu/acre | | Mean of all locations |
| Hazen | 91.0 | 103.6 | 101.4 | 106.5 | — | 100.8 |
| Bowers | 90.0 | 89.2 | 112.6 | 110.4 | 80.3 | 96.5 |
| Leger | 76.3 | 93.8 | 98.1 | 110.2 | 76.7 | 91.1 |
| Robust | 82.5 | 106.3 | 75.1 | 81.6 | 75.3 | 84.2 |
| Morex | 83.6 | — | 88.6 | 92.6 | 76.4 | 85.3 |

¹Seeding rates were 2 bu/acre unless otherwise specified.

Spring vs. Winter Barley

Although most Michigan barley is the spring type, there has always been an interest in winter barley. The two types are generally comparable in yield potential, but winter barley matures faster and generally can be harvested one to two weeks earlier than spring seeded types. Consequently, planting some winter barley may help to spread out use of labor and equipment.

Winter barley is not as winter hardy as wheat, so it should be planted only in southern Michigan where winter survival is assured. This generally corresponds to areas comparable to the Saginaw Valley region. Some varieties have greater tolerance to colder temperatures than others, so growers on the northern fringe of this area should select more tolerant varieties.

Although there is no basic relationship between the type (spring or winter) of barley and its use as feed or malting, all of the current malting varieties are spring seeded types, while feed varieties represent both spring and winter types.

Variety Selection

Growers should select varieties that will meet their purposes and produce the best in their geographic location. Excellent varieties of both spring and fall seeded types are available for Michigan growers. These represent feed and malting types from both public and private sources. Tables 1 to 5 show the characteristics and performance of varieties in several locations in Michigan. Although they vary somewhat in characteristics and productivity, all are considered acceptable for Michigan's climate.

Table 3. Characteristics of barley varieties tested at several locations in the Upper Peninsula (1979 to 1985).

| Variety | Height (in.) | Heading Date | Lodging Index* | Test Weight (lb/bu) | —Disease Resistance**— | | |
|---------|--------------|--------------|----------------|---------------------|------------------------|-------------|--------|
| | | | | | Loose Smut | Spot Blotch | Mildew |
| Morex | 29 | 6/25 | 1.5 | 46.5 | R | MR | + |
| Bowers | 33 | 6/27 | 2.2 | 45.2 | S | MR | R |
| Bonanza | 40 | 6/26 | 2.6 | 45.2 | R | MS | S |
| Larker | 36 | 6/26 | 2.7 | 46.7 | S | S | MS |
| Leger | 37 | 6/27 | 1.8 | 46.5 | R | S | MR |
| Robust | 30 | 6/29 | 0.6 | 46.2 | R | + | + |
| Hazen | 32 | 6/26 | 0.3 | 46.3 | R | + | + |

*Belgium Lodging Rating System: $A \times B \times .2 = \text{Lodging Index}$
 A = Area surface lodging percent
 B = Intensity of Lodging (1 = upright; 5 = flat)

**R = Resistant
 S = Susceptible
 M = Moderately
 + = No data

Table 4. Yield (bu/acre) of barley varieties tested at several locations in the Upper Peninsula (1979 to 1985).

| Variety | Alger | | Menominee | | Other | | Average | |
|---------|-------|--------------|-----------|--------------|-------|--------------|---------|--------------|
| | Yield | No. of Tests | Yield | No. of Tests | Yield | No. of Tests | Yield | No. of Tests |
| Morex | 63 | (3) | 80 | (4) | 81 | (3) | 75.4 | (10) |
| Bowers | 58 | (6) | 80 | (6) | 82 | (3) | 75.0 | (15) |
| Bonanza | 91 | (2) | 84 | (3) | 100 | (1) | 89.0 | (6) |
| Larker | 69 | (4) | 67 | (3) | — | — | 64.0 | (7) |
| Leger | 55 | (3) | 76 | (2) | 85 | (2) | 70.0 | (7) |
| Robust | 53 | (2) | 73 | (2) | 76 | (2) | 67.0 | (6) |
| Hazen | 51 | (1) | 83 | (1) | 86 | (1) | 73.0 | (3) |

Table 5. Yield and test weight of winter varieties in Ingham county (1983).

| Variety | Height (in.) | Yield (bu/acre) | Test Weight (lb/bu) |
|------------|--------------|-----------------|---------------------|
| OAC Halton | 46 | 96 | 51.7 |
| Odin | 51 | 101 | 52.2 |
| Lakeland | 46 | 98 | 52.2 |
| OH 77-19 | 43 | 107 | 51.9 |
| Post | 45 | 83 | 50.1 |
| LSD-0.05 | 4 | 17 | 2.0 |



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