

Barley Production on Alabama Farms

Barley has traditionally been produced on a relatively small acreage in Alabama. Consequently, statistics for barley production in Alabama are not available.

In recent years, the practice of no-till planting of row crops has stimulated interest in early maturing small grain crops for double cropping. Barley generally matures earlier than wheat or oats. However, early maturing wheat varieties, such as Coker 9227, mature only a few days later than most barley varieties.

Because of its early maturity, barley fits well into a double-cropping system with soybeans, grain sorghum, or corn. Barley is also an excellent grazing crop and the feed quality is high.

Adaptation

Barley grows best in well drained, productive loams or clay loams with medium to high fertility. It does not tolerate excessive wet or dry soils. Both yield and grain quality are reduced severely on poorly drained soils.

Poor results can also be expected when barley is grown on sandy soils. Barley grows erratically on sandy soils and may ripen prematurely in drought conditions.

Barley is the least tolerant of the small grains to soil acidity. Best yields can be expected when it is planted on soils with a pH of 6.0 or higher. It is more winterhardy than oats but less winter-hardy than wheat or rye.

Barley is best adapted to the northern portion of Alabama. Production in central and southern areas of the state has generally been unsuccessful and is therefore not recommended.

Varieties

The performance of barley varieties in the Alabama Small Grain Variety Trials from 1986 to 1987 is shown in the table. For comparison, the performance of Pioneer Brand 2550 wheat is also included.

Currently, recommended barley varieties for grain production in Northern Alabama are Sussex, Keowee, Barsoy, and Wysor. More information on yield, disease resistance, and other characteristics of barley can be found in the annual "Small Grain Variety Report" published by the Department of Agronomy and Soils, Alabama Agricultural Experiment Station, Auburn University. Copies of the current report and variety recommendations can be obtained from your county Extension office.

Seedbed Preparation

Plant barley in a well prepared, firm, and weed-free seedbed. Yields will generally be improved when some

Performance of Barley Varieties Tested in Northern Alabama.

Variety	Regional Avg. Grain Yield 1986-87(lb./A*)	Regional Avg. Forage Yield 1986-87(lb./A)	Lodging (Percent)	Avg. Date 10 Percent Headed
Wysor	2,592	3,647	4	4/13
Volbar	2,160	2,658	2	4/19
Anson	1,920	2,631	2	4/20
Sussex	1,872	2,868	26	4/10
Boone	1,824	2,877	6	4/18
Barsoy	1,680	2,551	2	4/10
Keowee	1,632	2,918	4	4/20
Pioneer 2550				
Wheat	1 860	2,999	0	4/28

* The standard weight for Barley is 48 pounds per bushel. The standard weight for wheat is 60 pounds per bushel.

sort of deep tillage, such as chisel-plowing or using a subsoiler with a 30- to 36-inch shank opening, is used.

Seeding Method—Rate and Time

Use plump, high-quality, certified seed that have good germination and are free of undesirable weed seeds. Treat the seed with a fungicide seed dressing to control smut and seedling diseases. Plant seeds 1 to 2 inches deep by either drilling or by broadcasting the seed and covering with a light harrowing.

Suggested seeding rates for grain production are 75 to 100 pounds for broadcasting or 75 pounds for drilling. If barley is to be grazed, increase the seedling rate by 25 pounds per acre. Seed barley in October in North Alabama. Where grazing is to occur, seed in September.

Fertilization and Liming

Barley must receive the proper fertilization and liming to obtain maximum yields. This can best be done by following soil test recommendations. Since barley is the least tolerant of the small grains to soil acidity, it is very important to be sure that the soil pH is above 6.0. Apply any required lime, phosphorus, or potassium at the time of seedbed preparation.

When barley is planted for grain, apply 20 pounds of nitrogen at planting and apply a topdress application of 60 pounds in the spring. When grazing is planned, apply 60 to 100 pounds of nitrogen at planting. Make a topdress application of 60 pounds per acre in the spring.

Diseases

Disease control on barley is largely a matter of using recommended production practices and selecting disease-resistant varieties. It is questionable whether foliar fungicides can economically control barley diseases. Little information on the effectiveness of fungicides on barley diseases is available.

Fungicide recommendations can be found in Extension Circular ANR-458, "Small Grain Pest Management" and ANR-500, "Alabama Pesticide Handbook." Several of the common barley diseases are described as follows.

Scald (causal fungus, *Rhynchosporium secalis*).

Distinctive oval to oblong blotches having gray to tan centers and dark to reddish brown margins are found on all aerial portions of a barley plant. Usually, symptoms are found on the leaf blades and sheaths but they may appear on the seedhead and awns under favorable weather conditions.

Spread of the disease is favored by cool, wet weather. Scald is often introduced into a field on infected seed. Once established, this fungus will survive between barley crops on crop residues at or on the soil surface. Use fungicide seed treatments to eliminate seed-borne inoculum.

Rotating barley with other small grains or winter forage crops will greatly reduce losses to scald. Deep plowing or burning crop residues will also reduce scald damage. Keowee and Volbar are the only recommended varieties that have good resistance to scald.

Spot blotch (causal fungus, *Bipolaris sorokiniana*).

Spot blotch can be a serious problem of all growth stages of barley. Small round to oblong brown lesions with yellow halos develop on the leaves. These lesions often merge to form blotches which may cover a large part of a leaf. Severely damaged leaves usually wither and die. Head and kernel infections may occur if weather conditions are favorable.

The fungus is often introduced into fields on infested seed and survives between grass crops as spores or mycelium in the soil or in crop debris. Since seedborne inoculum is so important for the spread of spot blotch, use a good, clean, fungicide-treated seed. Rotating small grains, including barley, with non-grass crops and destroying crop residue may help reduce disease damage. Anson is the only available barley variety that has good spot blotch resistance.

Net blotch (causal fungus, *Drechslera teres*).

Net blotch is named for the net-like pattern found on barley leaves and leaf sheaths. Lesions usually appear as small brown spots or streaks which expand to brown oval or oblong streaks. A yellow margin or halo is usually found around individual leaf lesions. Development of numerous lesions on a leaf results in the net-like pattern. The fungus survives between growing seasons on infested crop debris or seed. Disease development is favored by cool, wet weather in the fall and spring. Crop rotation and fungicide seed treatments will reduce the incidence of net blotch.

Keowee is the only barley variety available with resistance to net blotch.

Leaf rust (causal fungus, *Puccinia hordei*). Small round orange spots develop on barley leaves and sheaths. Rust pustules containing thousands of orange spores appear as the epidermis over these spots. It is not unusual for thousands of pustules to develop on a single leaf of a susceptible barley variety.

Rust-infected fields of barley will often have an orange-yellow cast because of the large number of rust pustules on the foliage. Using resistant varieties is the only economical method of controlling rust on barley. Unfortunately, most barley varieties have only moderate resistance to this disease.

Scab (causal fungus, *Fusarium graminearum*). This disease has been an occasional problem on barley. The first sign of infection is a small, water-soaked spot on the seed head at the base of the glumes. Within a short period of time, the entire glume will become water soaked. Salmon-pink mycelia of the fungus can often be found along the margin of the glume.

Developing kernels on infected spikelets are usually sunken and sometimes covered with the pink mycelia. Infected spikelets are usually a bleached straw color. By harvest, infected seed heads are often covered with small black fruiting bodies or perithecia. Outbreaks of scab are usually associated with warm, wet weather.

The fungus that causes scab commonly survives on crop residues of nearly all grain crops including corn and sorghum. A one- to two-year rotation of barley with non-grass crops is necessary to reduce disease pressure. Treating seed with fungicides will protect seedlings from seed-borne inoculum.

Weed Control

Weed competition and damage can be minimized by the use of weed-free seed and by good seedbed preparation. It is also helpful to rotate barley with row crops, on which good weed control is practiced.

Use herbicides to control many of the broadleaf weeds that occur in barley fields. For specific weed control practices using herbicides, see Extension Circular ANR-458, "Small Grain Pest Management," or Extension Circular ANR-500, "Alabama Pesticide Handbook."

Harvesting Barley

Barley can be combined and stored safely when the moisture content of the grain is 13 percent or less. Fumigate the stored grain to prevent insect damage.



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Paul L. Mask, Agronomist-Grain Crops; **Austin K. Hagan**, Plant Pathologist & Nematologist

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