

growing better crops of

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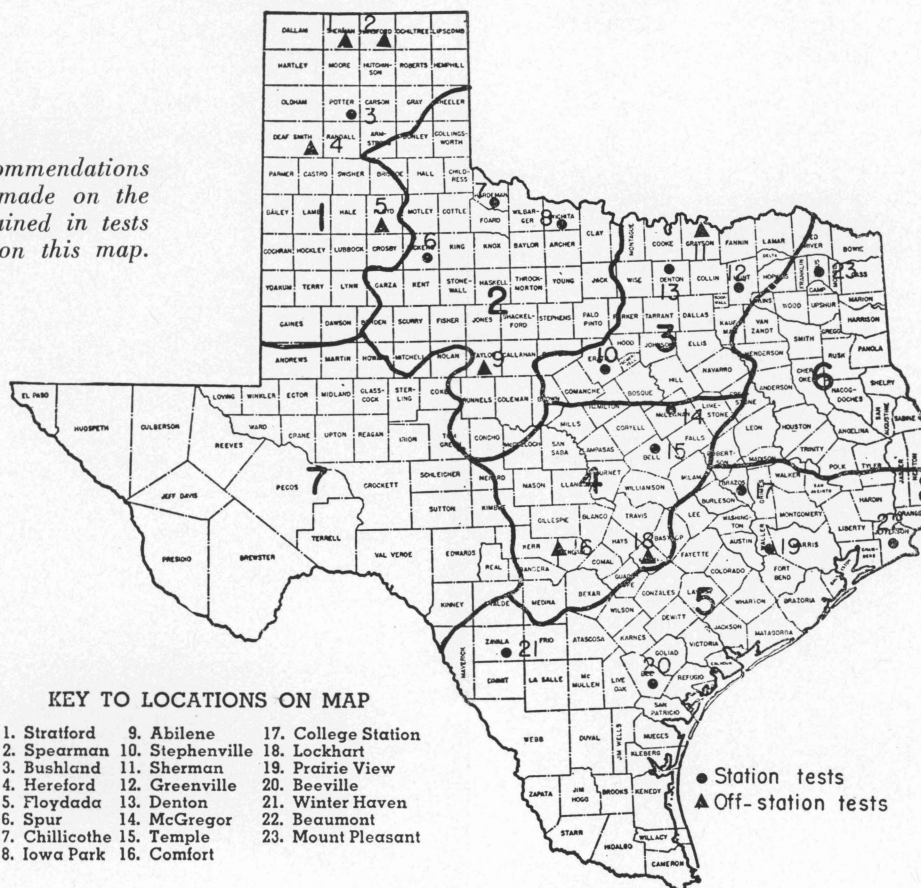
BARLEY

TEXAS
AGRICULTURAL
EXTENSION
SERVICE

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SMALL GRAIN GROWING AREAS AND TEST LOCATIONS

Barley variety recommendations in this leaflet are made on the basis of results obtained in tests at locations shown on this map.



KEY TO LOCATIONS ON MAP

- | | | |
|----------------|------------------|---------------------|
| 1. Stratford | 9. Abilene | 17. College Station |
| 2. Spearman | 10. Stephenville | 18. Lockhart |
| 3. Bushland | 11. Sherman | 19. Prairie View |
| 4. Hereford | 12. Greenville | 20. Beeville |
| 5. Floydada | 13. Denton | 21. Winter Haven |
| 6. Spur | 14. McGregor | 22. Beaumont |
| 7. Chillicothe | 15. Temple | 23. Mount Pleasant |
| 8. Iowa Park | 16. Comfort | |

● Station tests
▲ Off-station tests

Table 1. Recommended Barley Varieties

Recommended	Acceptable	Recommended	Acceptable	Recommended	Acceptable
Area 1		Area 3		Area 5	
Fall seeding		Fall seeding		Fall seeding	
Kearney	Cordova ¹	Cordova	Texan ²	Goliad	Cordova
Reno	Harbine ¹	Rogers	Wintex		Texan ²
Ward	Rogers ¹	Harbine		Spring seeding	
Spring seeding		Spring seeding		Not recommended	
Cordova	Wintex	Not recommended		Area 6	
Not recommended		Area 4		Fall seeding	
Area 2		Fall seeding		Cordova	Texan ²
Fall seeding		Fall seeding		Rogers	
Cordova	Wintex	Cordova	Texan ²	Harbine	
Harbine	Kearney	Rogers	Harbine ³	Spring seeding	
Rogers	Texan ²	Not recommended		Not recommended	
Ward		Area 7		Fall seeding	
Spring seeding		Spring seeding		Cordova	Texan ²
Cordova		Not recommended			Arivat ⁴

¹Less winter-hardy than other varieties listed.
⁴Based on farm observations; no data available.

³Satisfactory but seed supplies limited.

²Edwards Plateau area only.

Growing Better Crops Of Barley

R. J. HODGES AND I. M. ATKINS*

Barley ranks well below wheat and oats in acreage and farm value in Texas, but it has a dual value to growers as a grain crop and as a winter pasture for livestock. Its use as a winter pasture crop has expanded considerably in recent years. Large acreages are grown exclusively for winter pasture and grazed to maturity. All barley grown for grain in Texas is used for livestock feed.

Adaptation

Barley thrives under a wide range of climatic conditions and on many soil types. It is not well adapted to high rainfall, humid areas and should not be seeded on poorly drained soils. It is one of the most tolerant crops for growing on irrigated soils of high salt concentration, but performs best on well-drained, fertile soils in a cool climate. Barley is grown in nearly all parts of the State, but most of the grain is produced in North and North Central Texas. The acreage sown in South Texas is primarily for grazing and only small acreages are harvested to supply seed needs.

Uses

In Texas, practically all the grain from barley is used as livestock feed. The grain is desirable for fattening hogs or steers and as a part of the maintenance ration for breeding stock. It almost equals corn or grain sorghum in total feeding value, being slightly higher in protein, ash and crude fiber but lower in nitrogen-free extract and productive energy per 100 pounds of feed. Livestock producers often use barley for winter pasture or green-chop feeding. At present, none of the grain produced in Texas is used for brewing purposes.

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Culture

The cultural practices for barley are similar to those required for other small grains. A well-adapted variety should be selected, and it should be grown on fertile, well-drained land with proper attention to seedbed preparation, weed control and adequate fertilization. Soil tests should be made to determine fertilizer needs.

The seedbed should be firm and level. Any necessary extensive preparation, such as breaking or disking, should take place several months before seeding time. Seedbeds may be inexpensively prepared on cotton land by disking or harrowing. Seeding should be done with a drill to insure a uniform rate and depth. In West Texas, the wide row, deep-furrow drills are commonly used. They can operate in trashy seedbeds, and this crop residue combined with deep seeding provides protection from soil blowing and low temperatures. The deep furrows also catch moisture received as snow.

Seeding Rates and Dates

The rate and date of seeding varies greatly in the State due to the great range in climatic conditions and uses of the crop.

Barley may be either fall or spring sown in Area 1. Although fall seeding is somewhat hazardous, it is usually worth the risk because fall sown barley may provide an income from winter pasture, and it usually out yields spring-sown barley. In all other areas, fall seeding is recommended and spring seeding should be practiced only in an emergency.

Grazing Barley

Barley is valuable for early fall and winter grazing. It is used almost exclusively for this purpose in South Texas. Barley grows off more rapidly than oats or wheat and produces a higher tonnage during the fall months. Dairy farmers and others desiring early grazing may seed a portion of their acreage to barley and

depend upon oats or wheat for later grazing. Livestock should not have access to oats and barley at the same time, since barley is less palatable.

When grown for grain and pasture, barley should be grazed during the fall to keep down top growth and lessen the danger of winter killing. The intermediate winter-type varieties, such as Cordova, and upright growing spring-type varieties, such as Goliad, are more easily overgrazed than prostrate-growing winter types such as Kearney. Upright-growing varieties should reach a height of 8 inches before being grazed, and they should be grazed no closer than 4 inches. Overgrazing seriously reduces the top and root growth of a plant and may lower yields of forage and grain. When moisture is adequate, nitrogen applied as a topdressing may increase forage production.

Late grazing usually reduces grain yields. Generally, if the crop is to be harvested for grain, it should not be grazed after March 1 in Areas 1 and 2, February 15 in Areas 3 and 6; and February 1 in Areas 4, 5 and 7. Livestock should not graze fields that are excessively wet.

Table 2. Yields of Fall vs. Spring-seeded Wintex Barley at Denton and Amarillo

Yield of Grain, Bushels					
Denton		Amarillo			
Dryland		Fall		Spring	
Fall	Spring	Dryland	Irrigated	Dryland	Irrigated
26.3	20.2	32.9	41.2	19.2	28.3

Table 3. Rates and Dates for Seeding Barley

	Rate-pounds per acre		Date	
	Dry-land	Irrigated	Fall seeding	Spring seeding
Area 1	48	72	Sept. 15	Mar. 1
2	60	72	Oct. 1	Feb. 1
3	72	—	Oct. 15	Feb. 1
4	72	—	Oct. 15	Not recommended
5	72	—	Nov. 1	Not recommended
6	72	—	Oct. 15	Not recommended
7	72	72	Oct. 15	Not recommended

Varieties

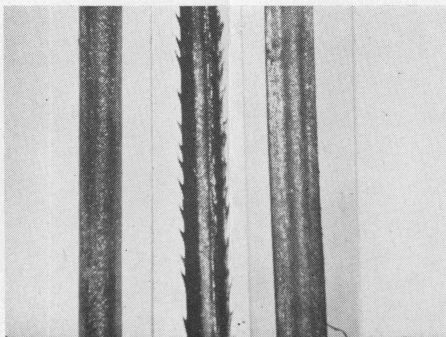
Varieties of barley grown in Texas are divided into three types based on their seedling growth habit: true winter types, intermediate winter types and true spring types. True winter-type varieties, such as Kearney and Ward, behave much as winter wheat, producing prostrate seedling plants with narrow leaves. These varieties normally do not head unless subjected to cold weather, hence are not adapted to spring seeding. These varieties are the most cold resistant of barley varieties. Some approach the hardiness of winter wheat.

The intermediate winter-type varieties, such as Cordova, differ from true winter-types in producing broader leaves which grow more upright. These varieties are sufficiently cold resistant for all of Texas, except Area 1, and even in that area, they survive most years. Because of their more upright and vigorous seedling growth habit, they are best suited to grain and forage production in Texas than other types.

True spring-type varieties produce erect broad-leaved seedling plants which are not sufficiently cold resistant for growing from fall seeding, except in Area 5 and to a lesser extent in Areas 4 and 7. This type may be spring sown in Area 1, but, in most seasons, does not yield as well as intermediate winter-types even under these conditions. Goliad is the only spring-type variety



Varieties and types of barley. Left to right, hooded, awnless, six-row short-awned, awned club, common six-row barley and common 2-row barley.



The smooth or barbless awns of Cordova are shown, left and right, in contrast to the barbed or rough awns of Wintex, center.

recommended in South Texas. Arivat has been grown successfully in the El Paso area but no data are available.

Barley varieties may also be grouped by head types. All commercial varieties now grown in the State have six rows of seed on the side of the central rachis or stem. Other types of barley may be seen in the accompanying photograph.

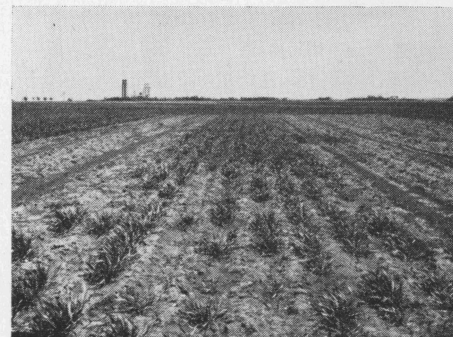
A brief description of the common commercial varieties appears in Table 4.

Diseases

Diseases usually are not serious factors in barley grain production. In South Texas, where humidity is high and frequent showers occur, several diseases may influence the value of the crop for winter pasture and prevent grain production. Barley often matures early enough in the major grain-producing areas to escape damage from foliage diseases. For detailed information on diseases, farmers should contact their local county agricultural agent.

Seed Treatment

Chemical seed treatments give considerable protection to young seedlings and better assurance of satisfactory stands. Black loose smut, covered smut and



Kearney center, a very cold resistant variety, survived low temperatures in 1951 at Bushland. Reno and Ward, on left and right were killed.

barley stripe may be controlled with recommended fungicide treatments, when applied according to manufacturers' directions. Most seed-cleaning plants have equipment for seed treating or it may be carried out on the farm. Fungicides are poisonous and persons using them should take necessary precautions and use protective equipment to prevent inhaling the chemicals. Treated grain never should be fed to animals.

A new water-soak method has been devised for controlling brown loose smut. The method can be used economically in treating small lots of seed for seed production purposes. This consists of soaking the infected seed in water for 2 to 6 hours, and then holding the soaked seed for 34 to 38 hours in an air-tight container, such as an oil drum with an air-tight cover. The addition of Chlorox or Purex at the rate of 1 pint to 30 gallons of water reduces undesirable odors and bacterial growth. The grain must be dried immediately to prevent sprouting and to permit seeding with a drill. After the grain is dry, it can be treated with recommended organic mercurial fungicide before planting.

Insects

Of the many insects seriously damaging barley, the most serious usually is the greenbug (aphid). This insect prefers barley to other grains. Other aphids may attack barley but ordinarily their damage is not serious. Greenbugs cause a characteristic yellowing or reddening of the leaf tissue where they feed. Under favorable conditions for greenbug reproduction, entire plants may die causing small-to-large yellow or dead areas in fields. The variety, Kearney, has considerable resistance to the greenbug. If greenbugs or other insects are found in damaging numbers, farmers should contact their county agricultural agent for control measures. The economics of an insecticidal control program must be considered, since it may not be practical to spend the amount required to control a greenbug infestation.