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Winter Oats, Barley, Rye, and Spelt

Purdue University Cooperative Extension Service
WINTER OATS, BARLEY, RYE AND SPELT

Winter Oats

Winter oats usually survive the winters only in the southern fourth of Indiana or roughly south of U. S. Highway 50, though they have moved farther north in recent years of mild winters. Usually, yields of grain and straw in areas of adaptation will exceed those of spring oats, and harvest is earlier. In Indiana trials, yields have varied from 10 to 100 bushels per acre according to the extent of winter injury. Because of slow early spring growth and narrow leaf blades, winter oats are not as productive of spring pasture as winter barley or rye but make excellent early winter pasture. Later, dense, tall growth gives legume seedings more competition than do other winter grains.

Culture: Soil should be prepared and fertilizer applied as for wheat. About 8 pecks of seed per acre should be drilled 3 or 4 weeks earlier than wheat. Oats are not attacked by Hessian fly. Oats seed should be treated with new improved Ceresan, Ceresan M or some other standard fungicide for smut control. Such treatment helps control root rots and seedling blights.

Varieties: Indiana is north of the area of best adaptation for winter oats and only a few varieties are winter-hardy enough to consistently produce profitable crops even in the mildest portion of this state.

Dubois, for a winter oat, is very winter-hardy under Indiana conditions. It is high yielding, stiff-strawed, medium short, produces white grain of high test weight. It is resistant to Indiana smut races, susceptible to new races of crown rust.

Forkedear: Winter-hardy, high yielding, weak-strawed, medium tall, produces yellow grain, susceptible to smut and crown rust.

Winter Barley

Winter barley usually is grown in southern Indiana, where most varieties tried, to date, survive the average winter. Under wheat acreage allotments, the acreage has greatly increased in northern counties. Only the most winter-hardy varieties should be used in the north. Most varieties straw-break badly as soon as dead ripe.

Factors responsible for the interest in winter barley are:

1. Wheat acreage allotments.
2. Its place as a source of early feed and its ability to replace corn on erosive land.
3. Its value, because of early maturity and removal, as a companion crop for legume and grass seedings.
4. Its rapid early growth for fall and spring pasture.
5. More winter hardiness than winter oats in southern counties and greater production of grain than can be grown from winter oats or spring-seeded oats or barley on good land.

Soil and Climatic Adaptation: Winter barley, in common with spring barley, is best adapted to soils that are sweet or only slightly acid. The crop will do best on soils not too acid for red clover.
Wet, heavy or poorly drained soils are not adapted to this crop. The limestone soils in southern Indiana seem well adapted, but clay flats and raw shale or sandstone soils are poorly adapted to barley.

Seedbed Preparation and Planting: The crop should be seeded at 8 pecks per acre on soil prepared as for wheat 10 to 14 days earlier than the fly-free date for seeding wheat. When fall pasture is desired, winter barley should be seeded in early September. Barley is not subject to as much injury from Hessian fly as wheat when seeded early, but in case of heavy fly infestation on wheat, the fly-free date should be observed in planting barley. The crop is readily attacked by chinch bugs. Its early maturity prevents serious damage from them but protecting adjacent grain crops, especially corn is a problem.

Fertilization: Winter barley responds to fertilization much like winter wheat and is even more responsive to early spring top dressings of nitrogen than winter wheat. In most cases, fall fertilizer, such as 4-16-16 analysis, will prove satisfactory applied at the rate of 200 to 300 pounds, depending on the soil. Only Kenbar or Hudson should be seeded on strong soils, high in nitrogen.

Disease Control: The loss from barley smuts has been quite heavy in some fields. The most practical treatment for seedling blight, semi-loose smut and covered smut is the use of Ceresan according to directions. The common brown or loose smut is not controlled by this dust. Where it is abundant, growers should give the hot-water treatment to enough barley for a seed lot or obtain seed free from brown smut. Scab may reduce quality and feeding value but cannot be controlled by seed treatment. Treatment of scabbed seed will reduce seedling blight and improve stands.

Rotations: Where the crop can be seeded fairly early, winter barley may be used in the rotation the same as winter wheat. Seedbed preparation consists, in most cases, of disk and harrowing. By seeding lespedeza in the barley, the rotation might become soybeans, barley, lespedeza, with plowing for soybeans only. In such a rotation, lespedeza could be used for hay, pasture or seed, barley for grain and soys for hay. Such a rotation would be highly desirable from the standpoint of erosion control and favorable to the maintenance of soil productivity. The average cost of producing these crops in rotation is estimated at not more than half the cost per acre of growing corn.

Varieties: Kentucky No. 1: Winter-hardy, high-yielding, mid-season, tall, weak-strawed, rough-bearded variety. Resistant to scald; moderately susceptible to leaf rust; susceptible to the smuts, including loose smut.

Kenbar: High yielding, stiff-strawed, short, semi-smooth-bearded. Resistant to loose smut and scald; susceptible to leaf rust. Not as winter-hardy as Kentucky No. 1.

Hudson: A new variety from New York is high yielding, taller than Kenbar, semi-smooth beards, stiff-strawed. Looks good in northern counties especially.

Rye

Rye makes up about 4 percent of the harvested acreage of fall seeded small grain in Indiana. Like wheat, it does best on well-drained loam and silt loam soils and is relatively better adapted than wheat to sandy soils. It is used for winter pasture and as a cover crop by many so there is a regular demand for seed in the early fall.
Fertilization: The fertilizer recommended for wheat may be used for rye. The crop grown on sandy soils and light-colored silt loams is about equal to wheat in its response to spring top-dressing with nitrogen. Balbo rye is grown more extensively on sandy soils than on fertile silt loams. Its 3-year average was 32 bushels per acre on light-colored fine sand near Culver, when fertilized with 300 pounds of 3-12-12 at seeding time and top-dressed in early April with 125 pounds of 33 percent ammonium nitrate per acre. Wheat under this treatment has averaged 26 bushels per acre. Without nitrogen, this land averaged 8 bushels of wheat and 11 bushels of rye per acre.

For pasture: Balbo is the best variety for early pasture as it makes a more upright growth in the fall and more growth early in the spring than common rye. It is known as "sweet rye" in that the pasture imparts less objectionable odor to milk; this is an additional advantage for dairy cattle. For best results, it should be drilled at 6 to 8 pecks per acre in late August or early September on land prepared as for wheat. Soils low in nitrogen should receive 20 to 40 pounds of this element prior to seeding.

Additional late fall and early spring grazing may be provided by seeding rye in legume meadows that are to be spring plowed for corn. The seed may be drilled direct but usually is seeded following a light disking.

Rye closely grazed is a good nurse crop for spring-seeded clovers and alfalfa.

For Winter Cover and Green Manure: The value of rye as a winter cover depends upon the amount of fall growth. For this reason, it should be seeded in late August or early September and preferably drilled. Success from broadcasting in standing corn depends upon the supply of moisture, and worthwhile growth is to be expected only on reasonably fertile soil. Often, thin stands result from this time and method of seeding. The same handicap to rye, seeded at the last cultivation of corn, is often like that when winter rye is spring seeded. Leaf rust may severely damage the seedlings so that the fall growth from such plants often does not equal that from seedings made from 6 to 8 weeks later.

Rye grown as a cover crop and for green manure should be plowed under before it heads. Delayed plowing often results in a dry, nitrogen-deficient seedbed for the succeeding crop. This use of rye does not take the place of legumes in the rotation and nitrogen should be supplied for any non-legume crop that follows.

The Grain Crop: Rye for grain should be drilled at 6 pecks per acre. Since it is more winter hardy, it may be seeded later than winter wheat. However, the crop is not damaged by Hessian fly and should be seeded about 10 days earlier than the earliest safe date for seeding winter wheat. Added growth from earlier seeding affords better erosion control.

Varieties: Balbo is higher in yield and test weight than common rye on light-colored sandy soil, probably due to its earlier maturity and less lack of moisture. Common rye is the higher in yield and test weight on silt loam soils and is to be preferred when the grain is marketed as commercial rye. The demand for Balbo seed for pasture and winter cover may make this variety more profitable to raise if harvested in a dry condition and stored until seeding time.

Tetra-Petkus: A new rye from Germany has been very productive in grain and pasture forage in northern Indiana in 2-year trials, except on light-colored sandy soil. It was damaged severely by anthracnose in southern Indiana in 1955.
WINTER SPELT

What is Spelt? Spelt, improperly called "speltz" in Indiana, is a kind of wheat.

Seedsmen and farmers use the name "spelts" to refer to both emmer and spelt which are unlike wheat as the chaff remains on the grain in threshing. Both of these crops have spring and winter varieties. Spelt has greater winter hardiness and longer heads than emmer, and large, hollow stems instead of pithy stems. Winter spelt is the crop grown on sandy soils by some farmers in northern Indiana counties, where it is claimed to produce more grain than oats.

Adaptation: Winter spelt is adapted where winter wheat safely survives the winter. In this country, spelt usually has produced fewer pounds per acre than the better varieties of oats, barley or wheat. Spelt stands up better than wheat, and under conditions where wheat lodged, has produced more grain. The large yields of spelt reported, as compared to wheat, should allow for the hulls or chaff which comprise 20 to 30 percent of the grain weight.

The spelt in common use is not resistant to stem or leaf rust nor to loose or stinking smut (bunt). It has the same susceptibility to Hessian fly as wheat.

Culture: Time of seeding, soil preparation and fertilization are the same as for wheat. The drill is set as for oats at 8 to 12 pecks per acre. Seed should be recleaned to remove sticks and straw that interfere with drilling. Because of the chaff attached, germination is slower than for wheat, and when the seedbed is dry, spelt should be seeded deeper than wheat.

Spelt may be combined or cut and threshed the same as wheat with proper adjustment of the concaves in threshing.

Uses of Spelt: Spelt is primarily a feed grain, and except for the demand for seed, there is no established market. In chemical composition it is similar to oats, and its feeding value is less than that of barley and corn.

More detailed information about Emmer and Spelt may be found in Farmers' Bulletin 1429, U.S. Department of Agriculture.

CERTIFIED SEED SUPPLIES

Certified seed sources of all recommended varieties are available from the offices of county agents or the Agronomy Department of Purdue University.

Small grain variety recommendations are revised each year. For current recommendations, ask your county agent or write for Station Circular 417.