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Oat Variety Trial

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Oat Variety Trial

Abstract

Oat is the major spring-sown small grain crop in Iowa. Spring-sown small grains can be used for grain and straw production, as a companion crop to establish hay and pastures, or as a source of early-season forage as hay or haylage. Because small grains generally mature before the end of July in Iowa, a forage legume, cover crop, or green manure crop can follow oats, or animal manure can be spread on the field in which oats were grown.

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Introduction

Oat is the major spring-sown small grain crop in Iowa. Spring-sown small grains can be used for grain and straw production, as a companion crop to establish hay and pastures, or as a source of early-season forage as hay or haylage. Because small grains generally mature before the end of July in Iowa, a forage legume, cover crop, or green manure crop can follow oats, or animal manure can be spread on the field in which oats were grown.

Oat grain production is best under cool conditions, which rarely occur during Iowa summers. However, careful management and proper choice of variety can make oats a profitable crop due to their low input requirements and favorable effects on succeeding crops in a rotation. Planting oats before April 15 is recommended for optimal yields in Iowa. This helps avoid exposure to warmer weather during grain fill.

Test weight is the most commonly used indicator of grain quality. High test-weight varieties should be chosen by growers who intend to market oat grain.

Oat is regularly affected by crown rust and barley yellow dwarf virus diseases in Iowa. Some varieties have adequate resistance or tolerance to these diseases, and disease resistance should be considered when choosing an oat variety. Because the pathogen populations can change from year-to-year, varietal resistance often breaks down within a few years, and growers should consider switching to a newer variety when this occurs.

Materials and Methods

Ten oat varieties were tested in 2010 at the Northeast Iowa Research and Demonstration Farm. The trial was planted on April 2 with a McCormick IH Drill at a rate of four bushels/acre with 7-in. row spacing. Each plot of a variety occupied 1,400 square feet. The trial was sufficiently weed-free to not require the use of herbicides or hand weeding. The trial was grown on land that had been in soybeans in the previous year. Fertilizer was broadcast before spring land preparation. Plots were replicated three times. The trial was harvested on July 26 with a JD4400 combine with weigh bin, concave set at 1, cylinder speed at 1,150 RPM. Straw yields were determined from 7.5 ft wide by 20 ft long windrows from the center of each plot.

Results and Discussion

The results of the oat test for 2010 are presented in Table 1. Yields reported are on a 32 lb/bushel basis. Test weight is the most important indicator of grain milling quality. Minimum test weights are 36 lb/bushel for U.S. No. 1 oats and 33 lb/per bushel for U.S. No. 2 oats. Yield results from a single year are not reliable predictors of next year's yield. Environment and disease conditions fluctuate greatly from year to year, so it is important to consider yields averaged over a number of years.

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