Kentucky Small Grain Variety Test Results Include Straw Yield Evaluation

DR. BILL BRUENING

LEXINGTON, KY.

Kentucky Small Grain Variety Performance Test Results are available at http://www.uky.edu/Ag/wheatvarietytest/. During the 2012-13 growing season, one-hundred wheat entries from seed companies/breeders were evaluated across Kentucky at 7 test locations. In addition to evaluating wheat varieties for differences in grain yield potential, the UK wheat variety trials also evaluate characteristics, such as test weight, heading date, plant height, winter hardiness, lodging and disease reaction. Additional specialized single location tests were conducted to measure wheat and oat varietal differences in forage biomass yields and post-grain harvest straw yields. Barley & oat variety grain production performance was also tested.

The University of Kentucky straw variety test was the first large scale test of its type. By teaming up with UK forage variety testing, a protocol was developed to rapidly collect and measure straw yields from plots using a forage research combine, which followed a grain combine at harvest. This multi-disciplinary research approach combines expertise from two different research areas and has been a model for other universities. UK straw data has been an important component of the Sun Grant Initiative, a national research project evaluating wheat straw yields and its potential for cellulosic bioethanol production.

Straw is highly valued in many diverse industries and is an important secondary commodity for many small grain growers. Marketing both grain and straw provides growers additional income from a single crop. Harvesting straw reduces field residue and facilitates good double-crop soybean stand growth and development. The time and labor requirements of harvesting straw may however, delay double-crop soybean planting.

When making wheat variety selections, growers who are harvesting both grain and straw should select varieties with both high grain and straw yield potential. Growers producing grain exclusively may consider selecting varieties with high grain and low straw yield potential to minimize post harvest field residue & aid soybean stand establishment. Secondary characteristics such as maturity and disease resistance are also important in variety selection. Plant height is often correlated with straw yield, but this is not always the case. A tall spindly variety may, for example may have lower straw yield than a shorter, thick stemmed variety with heavy tillering potential.

When managing wheat for grain and straw production, a fungicide application is it is recommended along with following standard management practices for grain production. A fungicide application near bloom stage will improve the brightness and quality of straw produced. It is also important to note that wheat harvested for straw removes organic matter and nutrients, such as potassium from the soil (approx. 50 lb K2O per acre). Growers need to factor soil nutrient loss into their economic decision to harvest straw.

Straw yields vary widely among wheat varieties. In the 2013 UK wheat straw test, dry matter yields ranged from 0.9 to 2.0 tons per acre. Straw yields and production profitability can be dramatically affected by simple variety selection decisions. Multi-year data on varietal differences in straw yield potential are presented and recommended for variety selection decisions. Δ

DR. BILL BRUENING: Research Specialist, University of Kentucky