

MSU Wheat Update
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Wheat Varieties – Wheat planting intentions are very high this fall, so book your seed soon. The 2007 MSU Wheat and Oat Variety Trials and a “short list” of wheat varieties which have had superior yields over the past several years are now available. Plant characteristics, maturity, straw strength, disease resistance and other helpful information are noted for each variety. Variety evaluation should be based primarily upon yield history (particularly on different soil types or management regimes), plant characteristics (including maturity, straw strength and height) and disease resistance for predominant pathogens in the region. Some have asked about the impact of the Easter freeze event on wheat variety yields and its impact on variety selection for coming seasons. Since the Easter freeze event was an extremely abnormal climatic event, I do not believe its effect should be a primary criterion for variety selection in future seasons. The Easter freeze did severely reduce grain yields of many varieties at our northernmost location at Olive Branch, but that yield reduction was very closely correlated to variety maturity. In other words, earlier-maturing varieties suffered substantial freeze damage and yield reduction, whereas later-maturing varieties avoided major damage. Furthermore, the presence of beards likely did not increase potential freeze damage - many of our early wheat varieties just happen to have beards. The early varieties which are not bearded suffered severe yield loss as well.

Figure 1. This beardless wheat variety was essentially completely sterilized by the 2007 Easter freeze.



The grain yield loss documented at freeze-stricken locations in early varieties does not necessarily mean we need to exclusively plant late-maturing varieties in north Mississippi, as many medium maturing varieties have an outstanding performance record in this region. However, we can do a better job of planting varieties differing in maturity, at a date which will optimize their performance. Early-maturing varieties should be planted during latter stages of suggested planting dates to avoid excessive vegetative development capable of exposing these varieties to substantial freeze damage in the spring.

Figure 2. Yield results from freeze-stricken 2007 plots or regions may not be a reliable indicator of variety yield potential in future seasons, because maturity superseded genetic performance of varieties.



Preparation for Wheat Planting – Inadequate preparation plagues wheat yield potential perhaps more than any other crop grown in Mississippi (Figure 3). Drainage, field selection/preparation and fertility are extremely important factors governing wheat yields which should be addressed in the fall. Wheat is grown during the rainy season, potentially exposing it to saturated conditions at any time. Optimal water drainage is critical to Mississippi wheat production because extended waterlogging may reduce stands, stunt growth and development, encourage pathogen infection, and reduce nutrient availability. Thus, field selection and soil physical improvements capable of improving drainage, such as multiple surveyed water furrows, raised beds and clean ditches, can enhance wheat yield tremendously. Soil tillage hardpans may also substantially limit yield potential by inhibiting internal drainage. Thus, disruption of soil hardpans with moderate to deep tillage equipment is encouraged, if needed. Although Roundup Ready cropping systems have reduced problems regarding herbicide carryover associated with crop rotation, growers should heed cropping intervals for herbicides used in the previous crop. Growers should keep fields weed-free for several weeks prior to planting to eliminate a “green bridge” for pests. Likewise, growers need to begin preparing fields now, so they have a smooth, firm, moist seedbed at planting time. Wheat yield potential is extremely dependent upon nutrient availability because it is a very shallow rooted crop grown during the wet season. This makes it nearly impossible for wheat to mine nutrients from the soil profile. Thus, wheat growers need to take soil tests now, so they will know how much phosphorus, potassium, zinc, magnesium and lime are needed to meet crop demand and correct soil pH before planting, or yields will suffer tremendously. Diammonium phosphate (DAP 18-46-0) is an excellent fall fertilizer source, particularly for late-planted wheat, because it supplies both nitrogen and phosphorus, which will promote vigorous growth and advance maturity - essentially serving as a “starter fertilizer.”

Figure 3. Preparation and fall management often determine wheat yield next year.



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