



UW Madison Department of Agronomy
1575 Linden Drive
Madison, WI 53706

January 2008

Growing and Marketing Spring Wheat in WI

Shawn P. Conley, Soybean and Small Grain Extension Specialist
John M. Gaska, Senior Outreach Specialist

Introduction

Spring wheat, much like winter wheat, is grown for grain that can be milled into flour and for the straw. Hard red spring wheat flour is typically used for making bread and hard baked goods. It is primarily traded at the Minneapolis Grain Exchange. Soft red winter wheat flour is used for pastries, cakes, pie-crusts, biscuits, and muffins. It is traded at the Chicago Board of Trade. Soft red winter wheat is characterized as a lower protein wheat whereas most of the spring wheat grown is the hard endosperm, higher protein type. Most, but not all, wheat grown in WI is soft red winter. Agronomically, both crops are grown and harvested very similarly. Spring wheat is sown early in the spring of the harvest year, whereas winter wheat is sown in the fall of the year prior to grain harvest.

Agronomy

Variety selection is one very important key to success in any grain production program. Beginning in 2007, the UW-Madison, Department of Agronomy tested 14 spring wheat varieties for their yielding ability and disease resistance at three locations in WI. Results from these trials are available at <http://learningstore.uwex.edu/pdf/A3397.PDF>. Consult these variety trials as well as others in your area and neighboring states to pick a high yielding variety with good disease and lodging resistance.

Nitrogen is the plant nutrient that usually limits wheat yields if it not present in the right amounts at the right time. Current nitrogen fertilizer recommendations for spring wheat in Wisconsin can be found in Nutrient Application Guidelines for Field, Vegetable, and Fruit Crops in Wisconsin <http://learningstore.uwex.edu/pdf/A2809.pdf>. Generally, 60 lb/a of N is adequate for soils with 2 to 10% organic matter. Applying too much N fertilizer can have detrimental effects on yield. Excessive N fertilization encourages excess vegetative growth, which increases the possibility of lodging, making harvest more difficult and increases disease potential due to a dense canopy. Nitrogen credit for any applied manure needs to be considered as well as an N credit of 40 lb/a for wheat following soybean.



Spring wheat is generally planted as soon as possible in the spring when field conditions permit. Spring wheat should be seeded at 1.2 to 1.4 million seeds/acre. Use seeds/lb and not just pounds acre to determine seed needs.

Seeding depth of wheat is an important consideration. Seeding too deep results in delayed emergence. Deep seeded wheat does not benefit from soil surface warming during the day, and is further delayed by cool night temperatures. Optimal seeding depth for wheat is 1".

Foliar applied fungicides fit into intensive wheat management systems that use practices such as high N rates, high seeding rates, and high yielding varieties. The primary purpose of applying foliar fungicides is to protect the health of the flag leaf. The flag leaf is the largest leaf on a wheat plant and is the first leaf below the head. Foliar-applied fungicides may provide an economical yield increase if:

- Disease is present on the lower leaves
- Humid weather with moderate temperatures are forecast for longer periods
- High yield management practices are employed
- Wheat is planted following wheat
- Varieties planted are susceptible to common leaf diseases

The most common diseases to affect spring wheat are leaf and stem rust, head scab, powdery mildew, smut, and *Septoria* leaf blotch. The most devastating of these is *Fusarium* head scab. Severe levels of scab infection can cause yield losses of more than 50% and significant reductions in grain quality. Kernels from diseased spikes are often shriveled. Harvested grain containing more than 5% infected kernels may contain secondary toxins that are harmful to humans and animals. Spring wheat is especially susceptible to head scab.

Consult the UWEX publication [Pest Management in Wisconsin Field Crops – 2008](http://learningstore.uwex.edu/pdf/A3646.PDF) for more information on weed and disease control. <http://learningstore.uwex.edu/pdf/A3646.PDF>

A sound weed control program combines cultural, mechanical and chemical control. Post emergence applied herbicides need to be applied at the correct stage of weed and crop growth and the herbicide should match the weed spectrum present in the field. Growers should be especially careful of applications of 2,4-D and dicamba after jointing because these herbicides can reduce yield or cause blank heads. Certain herbicides can also be applied in liquid fertilizer, but this should only be done if recommended on the herbicide label.

Marketing Spring Wheat - Seller Beware!

When considering whether to grow spring wheat in WI, one of the most important things to determine is if the crop can be marketed. The opportunities for selling spring wheat in WI and neighboring states is very limited. Growers are urged to call prospective buyers well before buying seed and certainly before planting.

Spring wheat is typically sold on a 14% minimum protein basis. Some elevators will reject loads that do not meet this requirement and others will discount the price if the protein is below 14%. Samples of wheat intended to be sold can be mailed to the buying elevator for a protein test, but this is no guarantee that the truckload you send to that elevator will match the sample you submitted. Several grain handlers we contacted warned about long waits at unloading terminals because the protein content has to be determined before the elevator will accept the grain. Trucks may have to wait up to 6 hours before learning the fate of the load. Be prepared to pay the freight costs back to your farm and find another use for the wheat if the load is rejected. Spring wheat can not be legally blended with winter wheat and sold on the open market.

On-farm storage is generally a requirement for spring wheat production. Since there are few outlets for the crop in Wisconsin, you may have to store the wheat prior to delivery. Consider storage and transportation costs in any crop budget you do for spring wheat.

Prices and economics

As of the end of January 2008, prices for 14% spring wheat in Minneapolis, MN and Superior, WI were about \$13.75 to \$14.00/bu. 2008 new crop prices were about \$10.50/bu. Although these may sound like lucrative prices, transportation and storage costs must also be factored in. Additionally, a comparison to growing winter wheat should also be assessed. Currently new crop winter wheat is selling for about \$7.75/bu in southern WI. Using yields derived from the UW Wheat Evaluation Program at Arlington WI, the highest yielding winter wheat variety was 93 bu/acre and the highest yielding spring wheat variety was 65 bu/acre. Gross income from the winter wheat grain would be about \$720/acre and the spring wheat would gross about \$682/acre. There are numerous delivery points for soft red winter wheat in WI, so storage and transportation costs would be small compared to spring wheat.



Spring wheat grain buyer contacts

ConAgra
Superior, WI and Minneapolis, MN
Contact Andy @ 888-765-6455
<http://www.conagrafoodscompany.com/corporate/index.jsp>

Olsen's Mill Inc.
Minneapolis, MN
Contact Dennis @ 800-850-3450
<http://www.olsensmillinc.com/>