

Soft Winter Wheat

notes and observations for Michigan

MICHIGAN STATE UNIVERSITY Extension

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Wheat crop is looking good

Based on my limited trips across the country side, wheat is looking good. I was particularly encouraging to see the water was able to get away through the soil profile. Green-up is early of course, so we will need to see if spring time management inputs need to be pushed forward. Typically, we see jointing around the 1st of May, but if warm weather persists development could be a week earlier (my notes from the record setting spring of 2012 show that jointing or g.s.6 came roughly 2 weeks early).

Many stands are particularly dense this spring because of earlier planting dates, heavy seeding rates or generous growing conditions last fall. Giving some extra thought to N rates and timing may be worthwhile.

Please complete a wheat variety survey

In cooperation with the U.S. Scab Initiative, we would like to get an update on which varieties MI growers are currently using. You can participate in the survey [electronically](#) or simply email me (nagelkir@msu.edu) a list of the varieties you seeded last fall and their approximate acreage. Or if you prefer, contact me and I will email you a simple form.

Thanks!!

Other articles on N fertilization

Below, I write about nitrogen fertilization. Its also helpful to learn what others are suggesting to growers. Click on the link to view articles'

Lentz and Lindsey of [Ohio State University](#)

wrote this piece for their CORN newsletter this month.

Labosky of [Wisconsin University](#)

share research results that suggest early N out-performs later applications (previously WU was advocating counting tillers to determine N timing).

Peter Johnson, [Ontario Ministry of Ag](#)

wrote this piece two years ago before wheat prices slipped below \$5.00.

Nitrogen fertilization of the 2016 wheat crop

N application timing

Trials looking at the best timing for N applications have given inconsistent results. At this point, the weather is unlikely to accommodate an application at green-up. This should not be an issue for strong stands on well drained, silt loam soils. In fact, some would argue that delaying the N application until full-tillering may help avoid excessive tillering and plant lodging in fields having particularly thick stands. Where an early dose might be more important is where the wheat stand is especially weak or thin, and where wheat is grown on coarse soil that has been depleted of N. In these cases, growers should look to apply at least a portion of their N as soon as conditions allow.

Single and split N applications

Split applications sometimes out-perform single applications. Here too, results have been inconsistent. In general, many growers electing to use a single application have found that applying N a couple weeks following green-up (and one or two weeks before jointing) has been successful for good stands on well-drained soils. Others, where stands or soil textures are in question, may do as well applying all their N at green-up, particularly if the stands are not overly dense and rainfall is not excessive in the weeks following application. Those pushing yields with high rates of N may do better splitting the rate by applying the majority of their N at either green-up (for stands that may be overly dense) or waiting until mid-April. In this scheme, the remainder of the N should be applied between full-tillering and second joint.

Reducing the risk of plant lodging

Many wheat fields attain extensive growth last fall. This may lead to an increased risk of lodging. Plant lodging is most likely where:

- the crop is planted early with an overly high seeding rate (encourages excessive tiller numbers);
- a high rate of N is applied at early green-up (encourages more tillering with weaker stems);
- a lodging susceptible variety is being grown; and
- normal temperatures during early jointing (encourages rapid stem growth which in turn reduces stem strength).

Where lodging is a risk, growers could consider: revisiting their N rate to assure their amount is not excessive; postpone all or most of the N application until the time of full-tillering; and/or using Palisade plant growth regulator at full-tillering or jointing.

Fertilizer N rate

MSU recommends that N rates for wheat consider the following formula: $N \text{ lbs/ac} = (1.33 \times \text{yield potential}) - 13$ (Bulletin E2904, Nutrient Recommendations for Field Crops in Michigan). In this formula, the total N recommendation includes any N applied in the fall at seeding. So, for example, in a field having a yield potential of 80 bu/ac, one would apply 93 lbs/ac of N $((1.33 \times 80 \text{ bu}) - 13)$. If 20 pounds was applied at seeding, the remaining 73 pounds would be applied in the spring.

For growers using 10 lbs/ac of N or less in the fall, this recommendation roughly translates to springtime use rates of 1.0 to 1.1 lbs./ac of actual N for every bushel of potential yield. For fields that deliver relatively low grain yields, the 1.0 lbs/ac may be sufficient, whereas fields with high historical yields may benefit from the 1.1 ratio. Before settling on a specific N rate, growers might fine-tune their actual rate based on other considerations:

- 1). Fertilizer N rates can be reduced where other sources contribute to the N supply. Examples might include where manure was applied or where soil contains a high level of organic matter.
- 2). Reduction in wheat prices should place a constraint on N rates. As an example -and to over simplify- if wheat is worth \$4.20 /bu and the cost of N/lb. is \$0.42, then a grower would need to achieve at least one bushel of grain for every additional 10 pounds of N.
- 3). A wheat crop that is not protected from leaf diseases is more apt to have a lower wheat yield and, therefore, a lower requirement for N.
- 4) Where early spring stands are relatively strong and dense, delaying N fertilization until a couple of weeks following green-up or even until the full-tillering stage may lead to greater N efficiency

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