SPRINGTIME MANAGEMENT OF WINTER WHEAT

Winter wheat breaks dormancy if there is a two-week period with an average temperature of at least 41°F. As soon as the plants resume growth, you need to get back out in the field so that you can make critical decisions about nitrogen, insecticide, and fungicide, and most importantly, preserving yield potential.

Nitrogen (N) Management
Splitting the nitrogen application reduces risk of loss to the environment, and reduces risk that the plants take up too much nitrogen at once and become rank. Rank plants are more likely to lodge.

<table>
<thead>
<tr>
<th># of Tillers/Plant</th>
<th>Nitrogen to Apply Feekes 3</th>
<th>Nitrogen to Apply Feekes 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 2</td>
<td>40 – 50 lb. (50-60 lb. no-till)</td>
<td>40 – 50 lb. (50 – 60 lb. no-till)</td>
</tr>
<tr>
<td>3 - 4</td>
<td>30 – 40 lb. (40 – 50 lb. no-till)</td>
<td>50 – 60 lb. (60 – 70 lb. no-till)</td>
</tr>
<tr>
<td>5 or more</td>
<td>None</td>
<td>80 – 90 lb. (110 – 120 lb. no-till)</td>
</tr>
</tbody>
</table>

Use tiller counts to determine necessity for early N application and rate.

- **Target:** 70-100 tillers/ft²
- **Fewer than 70 tillers/ft²**
  - Apply 50 to 60 percent of N at Feekes 3 (green-up)
  - Balance at Feekes 5 (stem elongation)
- **Greater than 70 tillers/ft²** = Target Feekes 4 to 5
- **See chart at left for rates.**

Tiller counts are essential for making management decisions.

N Rates
- 1.2 lb. N / Bu. harvested
  - 100 Bu. = 120 lb. N.
  - 80 Bu. = 96 lb. N.
  - 65 Bu. = 78 lb. N.

6-Year Multi-Location PFR data shows that 96 to 109 units/A. of N is ideal.

Single Pass
- Less than 70 tillers/ft²: apply in Feekes 3 (green-up).
  - Increased spring N loss potential!
- More than 70 tillers/ft²: wait until Feekes 5 (stem elongation).
- Use a nitrification inhibitor such as Agrotain Plus®, Instinct®, or Nutrisphere.

\[ \text{Goal is 60+ harvestable heads/ft}^2. \]

Palisade EC is a Plant Growth Regulator (PGR) that keeps the plant from getting too tall, which reduces the risk of lodging.

- PFR Proven when applied at Feekes 5: 6.3 Bu./A = $15.31/A. (12 oz. rate.)
Fungicides
Wet weather during flowering increases the odds of head scab infection. Fusarium head blight, also called FHB or head scab, is a fungal disease caused by *Fusarium graminearum*. This fungus produces a vomitoxin (DON) in the grain. Apply fungicide during early flowering, at Feekes 10.5.1, or when more than 50 percent of plants are flowering to mitigate head scab. In most areas, flowering is a 7 to 10 day window. In general terms, it is better to spray a few days too late than to spray too early before anthers are visible. Local scab predictions are available through local extension services.

A single application at Feekes 10.5.1 (flowering) provides the best protection against foliar disease and fusarium head scab.

**PFR Proven Data** - Single Application at Flowering (Feekes 10.5.1)

- +5.6 Bu./A. = $15.40/A. (6.5 oz. Prosaro® at Flowering, 5-year data)
- +6.7 Bu./A. = $20.73/A. (13.5 oz. Caramba® at Flowering, 7-year data)

Avoid strobilirin fungicides after flowering, because their use can increase DON in grain if applied after Feekes 8.

If you are interested in other PFR Proven products and practices to help you make the most of your wheat crop, check out the PFR Wheat Book, available at www.beckshybrids.com under the PFR tab.

Flowering
Flowering on each wheat head starts at the middle of the head, then moves up and down. Similarly, tillers will flower after the main head. Time your fungicide application to optimize the number of open flowers, while not waiting so long that you allow the disease to take hold.

Insects
It is important to use an insecticide seed treatment like Escalate® yield enhancement system and/or a fall applied insecticide to control aphids. Direct aphid feeding via piercing-sucking mouthparts removes plant sap and damages plant health. Some aphid species (bird cherry-oat aphid in particular) also vector a viral disease called Barley Yellow Dwarf. There is no control option for the virus, so keep aphid populations low to avoid yield loss.

Aphids can transmit Barley Yellow Dwarf Virus when:
- Temps > 48°F = aphid activity
- > 10 aphids/ft. row in the winter/spring = Spray!

Armyworm feeding on the leaves typically occurs at night. In the daytime, the larvae hide in residue at the soil surface or under clods of soil.

**True Armyworm**
- ≥ 4 armyworms / ft² = Spray!

**Estimated Yield Potential**

<table>
<thead>
<tr>
<th>% Stand</th>
<th>Plants/ft.²</th>
<th>% Yield Potential*²</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>30-35</td>
<td>100</td>
</tr>
<tr>
<td>80</td>
<td>24-28</td>
<td>100</td>
</tr>
<tr>
<td>60</td>
<td>18-21</td>
<td>90 - 95</td>
</tr>
<tr>
<td>50</td>
<td>15-18</td>
<td>75 - 80</td>
</tr>
<tr>
<td>40</td>
<td>12-14</td>
<td>60 - 70</td>
</tr>
<tr>
<td>20</td>
<td>6-7</td>
<td>40 - 50</td>
</tr>
</tbody>
</table>

* Multiply by 9 for plants/yard²
** This is an estimate and other factors can alter these estimates.

**Source:** Chad Lee © 2007 University of Kentucky