5-3-1999

Planting date affects crop diseases

Gary P. Munkvold  
*Iowa State University*, munkvold@iastate.edu

X. B. Yang  
*Iowa State University*, xbyang@iastate.edu

Follow this and additional works at: [http://lib.dr.iastate.edu/cropnews](http://lib.dr.iastate.edu/cropnews)

Part of the [Agricultural Science Commons](https://lib.dr.iastate.edu/agsci/), [Agriculture Commons](https://lib.dr.iastate.edu/agriculture/), and the [Plant Pathology Commons](https://lib.dr.iastate.edu/pathology/)

Recommended Citation

[http://lib.dr.iastate.edu/cropnews/2211](http://lib.dr.iastate.edu/cropnews/2211)

The Iowa State University Digital Repository provides access to Integrated Crop Management News for historical purposes only. Users are hereby notified that the content may be inaccurate, out of date, incomplete and/or may not meet the needs and requirements of the user. Users should make their own assessment of the information and whether it is suitable for their intended purpose. For current information on integrated crop management from Iowa State University Extension and Outreach, please visit [https://crops.extension.iastate.edu/](https://crops.extension.iastate.edu/).
Planting date affects crop diseases

Abstract
Planting date can affect many crop diseases; early planting increases the risk of seedling disease and some other soilborne pathogens, but for some diseases there is a risk of greater yield loss with late planting. Increased risks associated with late planting occur because plants are at an earlier growth stage at the onset of disease. Plants infected earlier in their development suffer greater yield reductions. It can pay to be aware of how specific diseases are affected by planting date.

Keywords
Plant Pathology

Disciplines
Agricultural Science | Agriculture | Plant Pathology

This article is available at Iowa State University Digital Repository: http://lib.dr.iastate.edu/cropnews/2211
Planting date affects many crop diseases; early planting increases the risk of seedling disease and some other soilborne pathogens, but for some diseases there is a risk of greater yield loss with late planting. Increased risks associated with late planting occur because plants are at an earlier growth stage at the onset of disease. Plants infected earlier in their development suffer greater yield reductions. It can pay to be aware of how specific diseases are affected by planting date.

In soybeans, root diseases such as Phytophthora, Rhizoctonia, and sudden death syndrome can strike any time during the season, but the risk of infection is greater if soybeans are planted early into cooler, wetter soils. Timely cultivation can help dry the soil, reducing the risk of root rots and promoting root development. Care must be taken not to damage the roots during cultivation.

Some early-season diseases cause more damage in late-planted crops. In oats, the two major diseases, barley yellow dwarf virus and crown rust, become active in late May and early June. Late-planted oats are still very small at this time, and they suffer more damage. In corn, Stewart's disease and anthracnose leaf blight can occur early. During most years, these diseases are not a serious threat, but they can cause more damage on late-planted corn.

Diseases that occur later in the season are affected more indirectly by planting date. Some studies have shown that late-planted soybeans sometimes escape infection by the first generation of soybean cyst nematode. Nematodes that hatch more than a few days prior to planting do not survive. However, the extent of preplant hatching may or may not be significant, depending on the temperature and other factors. Later soybean maturity reduces Phomopsis seed decay. Use of delayed plantings or later maturity varieties has been very consistent in the reduction of this disease. Planting date effects on Sclerotinia stem rot are unpredictable. In some years, infection may be avoided by late planting because canopy closure occurs later in the season, when it may be too hot for rapid fungal growth. However, if disease-favorable weather conditions occur late in the flowering season, soybeans planted late in drill or narrow row would have more disease than the early-planted crops. The effects of planting date on this disease are indirect.

In late-planted corn, silking and maturity may occur later than usual and enhance the damage by late-season leaf blights and ear rots. Gray leaf spot and eyespot inoculum levels are high from last year. These diseases cause greater yield reduction when infection occurs on younger plants. Ear rots become more severe as the corn stays in the field during late summer and fall. Later maturing fields could experience more cool, wet fall conditions, which are more favorable to Diplodia and Gibberella ear rots. If the grain is harvested before it dries...
down sufficiently, the result could be increased storage molds. It is difficult to generalize about the effects of planting date on stalk rots. Stalk rot development is often related to the growth stage of the plant, so it may be delayed in late-planted corn. However, if drydown is delayed because of late planting, the plants could suffer increased stalk rot damage as they stand in the field late into the fall. Usually the length of time between physiological maturity and harvest is important in determining the extent of stalk rot damage. Early maturing fields can suffer considerable lodging damage if harvest is not timely. For stalk rots and the other late-season diseases, keep in mind that weather conditions later in the season often have more influence than early-season conditions.

**Summary of the effects of early planting on corn and soybean diseases.**

<table>
<thead>
<tr>
<th>Disease</th>
<th>Effect of early planting</th>
<th>Reason</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seedling diseases</td>
<td>More disease</td>
<td>Cooler, wetter soil favors infection</td>
</tr>
<tr>
<td>Corn leaf diseases</td>
<td>Less yield loss</td>
<td>More grain fill occurs before disease sets in</td>
</tr>
<tr>
<td>Corn stalk rots</td>
<td>Not consistent</td>
<td>Depends on weather and timing of harvest</td>
</tr>
<tr>
<td>Corn ear rots</td>
<td>Less disease</td>
<td>Earlier drydown</td>
</tr>
<tr>
<td>Soybean root rots, sudden death syndrome</td>
<td>More disease</td>
<td>Cooler, wetter soil favors infection</td>
</tr>
<tr>
<td>Soybean cyst nematode</td>
<td>More disease</td>
<td>Plants will be infected by early-hatching nematodes</td>
</tr>
<tr>
<td>Soybean white mold</td>
<td>Not consistent</td>
<td>Depends on weather during flowering</td>
</tr>
<tr>
<td>Soybean brown stem rot</td>
<td>Not consistent</td>
<td>Depends on weather</td>
</tr>
<tr>
<td>Soybean mosaic virus</td>
<td>Less yield loss</td>
<td>Disease spread by aphids occurs later in the season</td>
</tr>
<tr>
<td>Soybean pod &amp; stem blight</td>
<td>More disease</td>
<td>Warm conditions during late pod fill stages</td>
</tr>
</tbody>
</table>

This article originally appeared on pages 50-51 of the IC-482 (8) -- May 3, 1999 issue.

**Source URL:**
[http://www.ipm.iastate.edu/ipm/icm/ipm/icm/1999/5-3-1999/dateeffects.html](http://www.ipm.iastate.edu/ipm/icm/ipm/icm/1999/5-3-1999/dateeffects.html)