Septoria diseases are caused by two fungi, *Septoria tritici* (leaf blotch) and *Septoria nodorum* (glume blotch). Both fungi can be seedborne and/or live from one season to the next on infected wheat stubble and other grass hosts. In the fall, ascospores of the sexual stage of *S. tritici* are blown down wind from fields with standing stubble. Ascospores of the sexual stage of *S. nodorum* are less common, but also move with wind from standing stubble.

Once established in a field, these fungi are moved upward on plants by rain-splash. As each new leaf emerges, it must be infected by splashed spores or physical contact with an infected leaf. Symptoms first appear 10-14 days after infection.

Symptoms: Leaf blotch appears first as light-green, then later as yellow spots between leaf veins. The spots spread slowly to form light-brown to tan irregular blotches. While there are many causes of leaf blotches, the diagnostic symptom of Septoria leaf blotch is tiny dark dots (pycnidia) on the brown blotches. These dots are the spore-producing chambers of the fungus.

Glume blotch causes nearly identical symptoms on leaves, but is most often found on grain heads. While it generally causes more severe damage to the head than *S. tritici*, both species can cause head damage.

**Control Through Management Practices:** Crop rotation, summer fallow, field burning, and plowing down of volunteer wheat and wheat stubble reduce inoculum levels. Rotation should include crops other than grass or cereals.

**Control Through Variety Selection:** Varieties differ in their resistance to Septoria. The table below gives *S. tritici* resistance ratings for varieties commonly grown in Oregon.

<table>
<thead>
<tr>
<th>Varieties</th>
<th>Disease Reaction</th>
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<tbody>
<tr>
<td>'Daws', 'Dusty', 'Malcolm', 'Nugaines', 'Stephens'</td>
<td>Susceptible</td>
</tr>
<tr>
<td>'Hill 81', 'Madsen', 'Yamhill'</td>
<td>Tolerant*</td>
</tr>
<tr>
<td>'Gene'</td>
<td>Resistant**</td>
</tr>
</tbody>
</table>

*Tolerant varieties are infected by the Septoria fungi but do not suffer yield loss from *Septoria* that can be reduced by fungicide application.  
**Gene is resistant to *S. tritici*, but is fully susceptible to *S. nodorum*. Its response to fungicide treatment is unclear.

Varieties that show tolerance or resistance to Septoria may still respond to fungicide treatment for other diseases, particularly rusts. If rust diseases are present, the use of Tilt (which also works on Septoria) or Bayleton (weaker on Septoria) should be considered, especially in fields with high (100 bu+) yield potential.

The newly released variety Gene has resistance to *S. tritici* but is very susceptible to *S. nodorum*. The impact of *S. nodorum* on the yield of Gene is not known at present.

**Fungicide Control:** Seed treatment with carboxin-thiram combinations gives partial control of the seedborne phase of Septoria.

In areas west of the Cascades, when heavy spring rains occur during flag leaf and head emergence and susceptible varieties are grown, fungicide applications are likely to be profitable.

**Benomyl + Mancozeb:** Apply 1.6 lb ai/A mancozeb plus 4 oz Benlate 50 WP (Washington and Oregon
only) at early flagleaf emergence (Feekes 8.0). Ideal timing is when approximately 1-2 inches of the flag leaf is showing on 10 percent of the plants.

Tilt: Make one 4 fl oz/A application of propiconazole (Tilt 3.6 EC), in not less than 15 gal water by ground or 5 gal water by air. Apply at flag leaf emergence (Feekes growth stage 8). Do not apply more than once per growing season.

When rain continues into head emergence, a second application is sometimes profitable. On these occasions, the benomyl + mancozeb combination or mancozeb alone may be used for the second application.

Application Restrictions and Residue Tolerances:
Benlate Do not allow livestock to forage treated fields.

Mancozeb 25 ppm - Straw; 20 ppm - Bran; 20 ppm - Milled feed; 5 ppm - Grain; 1 ppm - Flour. Do not make more than three applications per season. Do not apply within 26 days of harvest. Do not graze treated areas within 26 days of application.

Tilt Do not apply more than once per season or after flag leaf emergence (Feekes growth stage 8). Do not graze or feed livestock treated forage or harvest treated crop for hay or silage. Straw may be used for bedding.

Fungicide Resistant Pathogens

Fungi in many areas of the world have developed resistance to benomyl. The best way to slow the development of resistance is to alternate between fungicides with different active ingredients. In the case of Septoria diseases, use one of the recommended fungicides (or combinations) for the first spray, the other for the second, if it is necessary. Consider all fungicide use on cereals and use a diversity of active ingredients if possible.

Use pesticides safely!

* Wear protective clothing and safety devices as recommended on the label. Bathe or shower after each use.
* Read the pesticide label - even if you’ve used the pesticide before. Follow closely the instructions on the label (and any other directions you have).
* Be cautious when you apply pesticides. Know your legal responsibility as a pesticide applicator. You may be liable for injury or damage resulting from pesticide use.

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