**Should I Spray?**

Soybean rust is a disease that can significantly impact soybean yields. To control this disease, it is important to understand the different stages of rust development and the appropriate times to apply fungicides.

### Soybean Growth Stages

<table>
<thead>
<tr>
<th>Growth Stage</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>V1</td>
<td>Beginning of seedling growth</td>
</tr>
<tr>
<td>V2</td>
<td>Full seedling growth; flowering begins</td>
</tr>
<tr>
<td>V3</td>
<td>Beginning of pod set and flowering</td>
</tr>
<tr>
<td>V4</td>
<td>Early flowering to pod set</td>
</tr>
<tr>
<td>V5</td>
<td>Late flowering to pod set</td>
</tr>
<tr>
<td>V6</td>
<td>Preharvest bloom可通过pod set to final seed development</td>
</tr>
<tr>
<td>V7</td>
<td>Preharvest bloom through final seed fill</td>
</tr>
<tr>
<td>V8</td>
<td>Postharvest bloom through final seed fill</td>
</tr>
</tbody>
</table>

### Scenarios

#### Scenario 1: No treatment (basic)

**Management Focus:** A spray program that minimizes risk, yet places emphasis on scouting. Fungicides for one application before the season and pre-past the second application in season at a later stage.

**Situation:** Rainfall in April has resulted in the local soybean crop.

**Further action:** Scout at regular intervals through full seed fill (R6).

#### Scenario 2: Early-infection treatment

**Management Focus:** Early detection of disease and stress factors, such as high temperatures, are critical. Fungicides for one application before the season and pre-past the second application in season at a later stage.

**Situation:** Soybean rust has been detected in the local soybean crop.

**Further action:** Spray preventative or monitor disease development after fungicide application to determine if a second application is necessary. Spray no later than when disease is present at least levels in the lower canopy and cutting (R6) is still below the fifth growth stage.

#### Scenario 3: Early-infection treatment

**Management Focus:** Scout early in the season and disease forecast monitoring. Fungicides for one application before the season and pre-past the second application in season at a later stage.

**Situation:** Soybean rust has been detected in the local soybean crop.

**Further action:** Continue to scout seedling stages of disease development and apply quickly as needed. Fungicides in the mid-canopy (beginning to full flowering) are highly beneficial for rust control.

#### Scenario 4: Preventive treatment

**Further action:** To be sprayed after R5. Be sure to read labels. Labels for most soybean rust fungicides can only include general guidelines on host, time, and rate. Follow those guidelines as closely as possible. Treatment criteria should be used to make the decision to apply fungicides early in the season. Spraying fungicides when rust infection is already established may only reduce yield losses.

**Further action:** Continue to scout flint and flax rust and soybean rust and apply fungicides for control at the optimal time.

### Scouting Conditions

- **Rainfall:** Scout after heavy rainfall and environmental conditions favor rust infection.
- **Disease Forecast:** Scout at regular intervals through full seed fill (R6). Scouting just prior to pod set (R6) may be too late.
- **Flowering:** Scout for rust development at different growth stages through flowering (R1) to full seed fill (R6).
- **Temperature:** Scout for rust development at different temperature levels through flowering (R1) to full seed fill (R6).
- **Disease Forecast:** Scout at regular intervals through full seed fill (R6). Scouting just prior to pod set (R6) may be too late.
- **Flowering:** Scout for rust development at different growth stages through flowering (R1) to full seed fill (R6).
- **Temperature:** Scout for rust development at different temperature levels through flowering (R1) to full seed fill (R6).

**Further action:** Continue to scout disease development post-application and apply quickly as needed monitoring. Fungicides in the mid-canopy (beginning to full flowering) are highly beneficial for rust control.

### Further Information

- **Soybean Growth Stages:** Develop a dense canopy before flowering. Spraying just prior to full flowering (R6) may be too late.
- **Flowering:** Monitoring of disease development at different temperature levels through flowering (R1) to full seed fill (R6).
- **Temperature:** Monitoring of disease development at different temperature levels through flowering (R1) to full seed fill (R6).
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### Additional Resources

- **X.B. Yang, Iowa State University**
- **Soybean Growth Stages**
- **Soybean Rust Forecasting**
- **Soybean Rust Monitoring**
- **Soybean Rust Management**

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*Image credits: * [Duque Fungicide Group Ltd](https://www.dupe.com) for Managing soybean rust and environmental conditions.

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Available Fungicides (May 2006)

<table>
<thead>
<tr>
<th>Fungicide</th>
<th>Company</th>
<th>止损率</th>
<th>PHI</th>
<th>Mode of Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proline®</td>
<td>(Syngenta)</td>
<td>7-14 days</td>
<td>11+3</td>
<td>Quinone outside inhibitor (QoI)</td>
</tr>
<tr>
<td>Punch® C</td>
<td>(Makhteshim-Agan)</td>
<td>7-14 days</td>
<td>11+3</td>
<td>Quinone outside inhibitor (QoI)</td>
</tr>
<tr>
<td>Alto®</td>
<td>(Cheminova)</td>
<td>7-14 days</td>
<td>11+3</td>
<td>Quinone outside inhibitor (QoI)</td>
</tr>
<tr>
<td>Tilt®</td>
<td>(DuPont)</td>
<td>7-14 days</td>
<td>1</td>
<td>Systemic phenylamide</td>
</tr>
<tr>
<td>Laredo</td>
<td>(BASF)</td>
<td>7-14 days</td>
<td>1</td>
<td>Systemic phenylamide</td>
</tr>
<tr>
<td>Stratego®</td>
<td>(Valent)</td>
<td>7-14 days</td>
<td>1</td>
<td>Systemic phenylamide</td>
</tr>
<tr>
<td>Headline SBR</td>
<td>(Syngenta)</td>
<td>7-14 days</td>
<td>1</td>
<td>Systemic phenylamide</td>
</tr>
</tbody>
</table>

Commonly Asked Questions

1. Why do I need to scout for Asian Soybean Rust (ASR)?

ASR is an emerging disease threat to soybean producers in the central and western United States. Producers need to be aware of the disease so they can apply timely fungicides and thereby reduce yield losses.

2. How long do I need to scout for ASR?

ASR can develop quickly, especially on susceptible varieties. Producers should monitor their fields several times over the growing season and apply fungicides as needed to prevent yield losses.

3. What type of scouting should I perform for ASR?

Producers should perform several types of scouting to detect early signs of ASR. These include area/field scouting, standard scouting, and precision scouting. Area/field scouting involves walking through an entire field to determine if there are any areas covered by the standard scouting pattern. Standard scouting involves walking through a field in a standard pattern to detect early signs of ASR. Precision scouting involves using a drone to detect early signs of ASR.

4. What are pre-harvest intervals (PHI) for fungicides?

PHIs for fungicides are the minimum number of days between applications to ensure effective disease management. For ASR, PHIs are typically 11 days for QoI and triazole fungicides. For other fungicides, PHIs may vary. Producers should consult the labels of their fungicides for specific PHI information.

5. Can my fungicides give me a yield boost in the absence of disease?

Some fungicides may give a yield boost in the absence of disease, but this is not a general rule. Results can vary depending on the disease pressure and the specific fungicide used. Producers should consult the labels of their fungicides for specific information on yield benefits.

6. Are fungicides effective for control of Asian Soybean Rust (ASR)?

ASR is a new disease threat to soybean producers, and the efficacy of fungicides in controlling the disease is still being evaluated. Producers should consult the labels of their fungicides for specific information on effectiveness.

7. Can I alternate fungicides to prevent fungicide resistance?

Yes, producers can alternate fungicides to prevent fungicide resistance. However, it is important to use fungicides with different modes of action to prevent resistance. Producers should consult the labels of their fungicides for specific information on appropriate fungicide combinations.