

## Pulse Diagnostic Chart

Though not comprehensive, the following chart may help when you're in the field scouting for issues.

Field/Plant Symptom	Possible Causes
Poor or no emergence or large gaps in the seed row.	<ul style="list-style-type: none"> <li>• poor germination or low vigor (seed is found and may or may not be rotted)</li> <li>• seed decay or seed rot (seed may not be found)</li> <li>• no seed found - seed decay or poor seeding patterns (seeding too fast)</li> <li>• plumule (shoot) has been cut below soil surface - cut worm damage</li> <li>• plumule (shoot) below ground is brown near seed - common root rot</li> <li>• plumule (shoot) cut or damaged at soil surface - wind damage</li> </ul>
Uniform emergence but patches are twisted, stunted or dying.	<ul style="list-style-type: none"> <li>• orange center in lower stem and plumule - fusarium wilt</li> <li>• possible residual herbicide damage</li> <li>• excess water causing root rot</li> <li>• high soil salinity levels</li> </ul>
Uniform emergence but patches are dying although secondary buds forming.	<ul style="list-style-type: none"> <li>• frost damage</li> <li>• soil residual herbicide damage</li> </ul>
Poor root system but no browning.	<ul style="list-style-type: none"> <li>• phosphate deficiency</li> <li>• extremely wet soil conditions</li> </ul>
Nodulation not present at 5 to 6 node stage.	<ul style="list-style-type: none"> <li>• inoculant problem or inoculation problem</li> <li>• very acid soils</li> <li>• high soil nitrogen</li> </ul>
Nodulation present but green pulpy nodules.	<ul style="list-style-type: none"> <li>• high soil nitrogen</li> <li>• extremely dry soil conditions</li> </ul>
Plants are turning yellow	<ul style="list-style-type: none"> <li>• excess water causing root rot</li> <li>• no nitrogen fixation</li> <li>• herbicide residue in the soil</li> <li>• herbicide application damage (low water volume)</li> <li>• herbicide drift if in pattern near edge of field</li> <li>• extreme drought and nitrogen fixation stops</li> </ul>
Extremely tall growth, long internodes.	<ul style="list-style-type: none"> <li>• excess soil or fertilizer nitrogen combined with good moisture</li> </ul>
Compressed plant growth, extremely short internodes.	<ul style="list-style-type: none"> <li>• drought</li> <li>• herbicide injury from soil carryover</li> <li>• herbicide injury due to low water volumes</li> <li>• herbicide injury due to late application (6+ nodes)</li> </ul>
Main plant (5 to 7 node stage) is stalled in growth – new tillers forming.	<ul style="list-style-type: none"> <li>• high soil salinity</li> <li>• classic case of herbicide damage due to low water volumes, cocktail mixes or sprayer tank residues</li> <li>• herbicide injury from soil carry over</li> </ul>

Field/Plant Symptom	Possible Causes
Twisting of main stem or tendrils.	<ul style="list-style-type: none"> <li>• herbicide drift</li> <li>• herbicide injury from tank contamination</li> </ul>
Flowers are falling off or pods not forming on upper flower nodes.	<ul style="list-style-type: none"> <li>• flower blast due to heat/low moisture stress</li> <li>• general drought damage</li> <li>• downy mildew symptom</li> </ul>
Leaves are yellow but veins are green.	<ul style="list-style-type: none"> <li>• possible fertility imbalance of magnesium or manganese deficiency (not common)</li> </ul>
Lower stems near soil surface are purple/black.	<ul style="list-style-type: none"> <li>• early symptoms of ascochyta complex</li> </ul>
Stem portion white with remaining plant green.	<ul style="list-style-type: none"> <li>• classic sclerotinia stem rot</li> </ul>
Premature lodging or excessive lodging for the variety.	<ul style="list-style-type: none"> <li>• high soil residual nitrogen</li> <li>• mycosphaerella/ascochyta disease complex</li> <li>• excessive moisture</li> </ul>
Various pods have white blotches.	<ul style="list-style-type: none"> <li>• grasshopper damage</li> <li>• downy mildew infection</li> <li>• hail damage</li> </ul>
Various pods have discolored or rotting ends.	<ul style="list-style-type: none"> <li>• botrytis or grey mold damage</li> </ul>
Pods are prematurely splitting open – seed also splitting.	<ul style="list-style-type: none"> <li>• environmental, high moisture levels after a prolonged drought</li> </ul>
A leaf or leaves on only parts of plant are yellowing.	<ul style="list-style-type: none"> <li>• possible virus infection</li> </ul>
Brown lesions with dark margins on leaves, pods and stems.	<ul style="list-style-type: none"> <li>• classic symptom of ascochyta infection</li> </ul>
White powdery coating on pods and plants.	<ul style="list-style-type: none"> <li>• classic symptom of powdery mildew infection</li> </ul>