

## Wheat Diseases and Disorders Common in Ohio

<b>Disease or Disorder</b>	<b>Symptoms</b>	<b>Environment</b>	<b>Survival</b>	<b>Management</b>
<b>Fusarium Head Scab</b>	Spikelets of head turn straw-colored; glume edges with pink spore masses, kernels shriveled white to pink in color	Warm, wet weather during flowering period	Fungus survives on residues (corn stalks), ascospores and conidia are wind-borne	<ol style="list-style-type: none"> <li>1. Seed treatment for infected seed</li> <li>2. Crop rotation</li> <li>3. Plow down corn residues</li> </ol>
<b>Bunt</b>	Small heads, with spreading glumes, kernels converted to bunt balls filled with black spores	Adequate soil moisture and moderate soil temperature favor seed germination and seedling infection	True seed-borne spores contaminate seed surface during harvest, infecting seedlings	Seed treatment
<b>Loose Smut</b>	Florets and kernels of heads replaced by black spore masses, bare black rachis	Light rain, heavy dew during flowering, moderate temperatures	True seed-borne fungus survives in embryo of seed, infection during flowering	Seed treatment
<b>Sooty Mold or Black Head</b>	Glumes and other head tissues covered by black sooty-appearing mold	Warm, wet weather during maturation of crop, delayed harvest	Ubiquitous saprophytic fungi survive on all types of organic residues, spores wind blown	None recommended
<b>Basal Glume Rot</b>	Dark blotches or streaks near base of glumes, streaks may extend more than halfway up glumes	Wet, mild weather during heading and grain fill	Bacterium survives on residues, in soil and on seed, windblown dust or residue fragments carry bacteria to heads	None available

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<b>Black Chaff</b>	Brown-black streaks or blotches on upper half of glumes, dark brown streaks on leaves	Moist, mild weather during flag-leaf emergence through grain fill	Bacterium survives on residues, in soil, and on seed, spread by splashing rain, wind and plant-to-plant contact	None available
<b>Powdery Mildew</b>	Powdery white mold growth on leaf surfaces	High humidity, 60-75°F, high nitrogen fertility and dense stands	Overwinters on residues, ascospores and conidia serve as inoculum	<ol style="list-style-type: none"> <li>1. Resistant varieties</li> <li>2. Crop rotation</li> <li>3. Delayed planting</li> <li>4. Fungicides</li> </ol>
<b>Leaf Rust</b>	Rusty red pustules scattered over leaf surface	Light rain, heavy dew, 60-77°F, 6-8 hr. leaf wetness for germination and infection	Uredospores blown up from southern wheat regions, may over winter in state during mild winters	<ol style="list-style-type: none"> <li>1. Resistant varieties</li> <li>2. Balanced fertility</li> <li>3. Fungicides</li> </ol>
<b><i>Septoria tritici</i> Leaf Blotch</b>	Leaf blotches with dark brown borders, gray centers speckled with black fungal bodies	Wet weather from mid April to mid May, 60-68°F, rain 3-4 days each week	Overwinters on residues, rain splashed to leaf surfaces	<ol style="list-style-type: none"> <li>1. Seed treatment</li> <li>2. Plant less-susceptible varieties</li> <li>3. Crop rotation</li> <li>4. Balanced fertility</li> <li>5. Fungicides</li> </ol>
<b><i>Stagonospora nodorum</i> Leaf and Glume Blotch</b>	Lens-shaped chocolate brown leaf lesions with yellow borders, brown to tan blotches on upper half of glumes on heads	Wet weather from mid May through June, 68-80°F, rain 3-4 days each week	Overwinters on residues and on seed, rain splashed onto leaves and glumes	<ol style="list-style-type: none"> <li>1. Seed treatment</li> <li>2. Plant less-susceptible varieties</li> <li>3. Crop rotation</li> <li>4. Balanced fertility</li> <li>5. Fungicides</li> </ol>

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<b>Tan Spot</b>	Lens-shaped, light-brown lesions, yellow borders	Moist, cool weather during late May and early June	Fungus survives on wheat residues, spread by wind	<ol style="list-style-type: none"> <li>1. Plow down infested residues</li> <li>2. Crop rotation</li> <li>3. Balanced fertility</li> <li>4. Fungicides</li> </ol>
<b>Cephalosporium Stripe</b>	Chlorotic and necrotic interveinal stripes extending length of leaf	Cold, wet fall and winter with freezing and thawing causing root damage	Soilborne fungus sporulates in soil water, spores enter roots by way of wounds in late fall	<ol style="list-style-type: none"> <li>1. Crop rotation</li> <li>2. Bury infested residues</li> <li>3. Control grassy weeds</li> <li>4. Lime soil to pH 6.0-6.5</li> </ol>
<b>Take All</b>	Black scurfy mold on lower stems and roots, early death to plants	Cool, moist soil through October-November and again in April-May	Soilborne fungus survives on residues, runner hyphae grow from residue to roots	<ol style="list-style-type: none"> <li>1. Crop rotation</li> <li>2. Control weed grasses</li> <li>3. Balanced fertility</li> <li>4. Use ammonium forms of N for top dress</li> <li>5. Avoid early planting</li> </ol>
<b>Sharp Eyespot</b>	Lens-shaped lesions on lower stems with dark brown borders	Cool, wet conditions in fall and spring	Soilborne fungus survives in soil and on residues, infects stems at soil surface	None
<b>Pythium Root Rot and Seedling Blight</b>	Seed rot, seedling blight or wilting, roots with brown lesions or entire roots brown, stunted plants	Cold, wet soils at planting, poor soil fertility	Fungus common in soil	<ol style="list-style-type: none"> <li>1. Seed treatment for seedling blight</li> <li>2. Well-prepared seed bed</li> <li>3. Balanced fertility</li> </ol>

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<b>Fusarium Root Rot and Seedling Blight</b>	Seedling blight (pre and post emergence), wilted, yellow plants, roots and lower stems with whitish to pinkish mold. Root rot plants have brown crowns and lower stems.	Dry, cool soils, drought stress during seed filling	Fungus common in soil	<ol style="list-style-type: none"> <li>1. Seed treatment for seedling blight</li> <li>2. Delayed planting</li> <li>3. Balanced fertility</li> <li>4. Avoid planting after corn</li> </ol>
<b>Barley Yellow Dwarf</b>	Stunted, yellowed plants, leaves with yellowed or reddened leaf tips	Cool, moist seasons	Aphid-vectored virus, aphids generally brought into the state from southern regions by air currents	<ol style="list-style-type: none"> <li>1. Delay planting until after Hessian fly-safe date</li> <li>2. Balanced fertility</li> </ol>
<b>Wheat Spindle Streak Mosaic</b>	Discontinuous yellow streaks oriented parallel with veins of leaves. Streaks with tapered ends forming chlorotic spindle shapes	Cool, wet fall followed by cool spring weather extending through May	Virus transmitted by a soilborne fungus	Resistant varieties
<b>Wheat Soilborne Mosaic</b>	Fine yellow streaks and mosaic patterns on youngest leaves, severe stunting	Cool, wet fall followed by cool spring weather extending through May	Virus transmitted by soilborne fungus	Resistant varieties
<b>Wheat Streak Mosaic</b>	Yellow streaks parallel veins in leaf, moderate stunting	Dry weather in fall prior to wheat planting	Virus transmitted by the wheat curl mite	None available

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<b>Physiologic Fleck</b>	Small, round yellow flecks scattered over leaf surface	Unknown	Genetic	None
<b>Color Banding</b>	Alternating horizontal yellow and green bands on seedling leaves	Water-soaked or frosted leaves dry rapidly due to surface soil heat or bright sunlight		None
<b>Hail</b>	Shredded leaves, white damaged blotches on heads, leaf sheath and stems, broken stems	Hail		None
<b>Frost Injury</b>	Bleached florets on portions of heads, bleached stems near nodes	Freezing temperatures in May during jointing and heading growth stages		None