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EC03-1887 Alfalfa Disease Profiles

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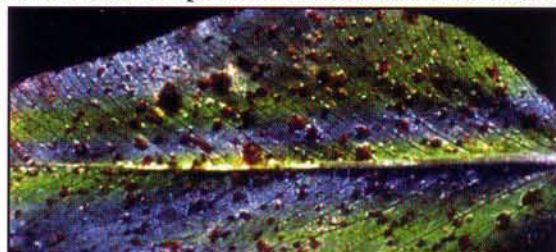
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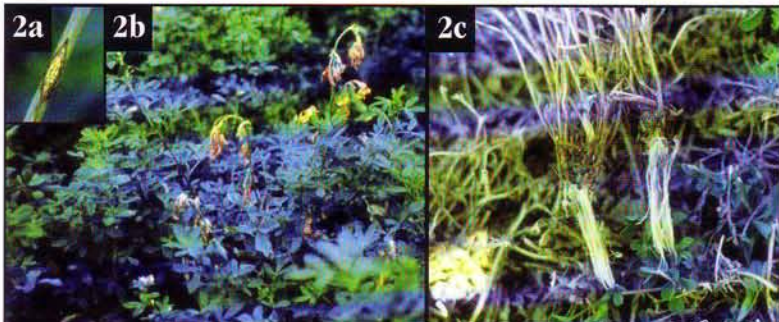
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Alfalfa Disease Profiles

NU Extension Plant Pathology Team
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1. Rust



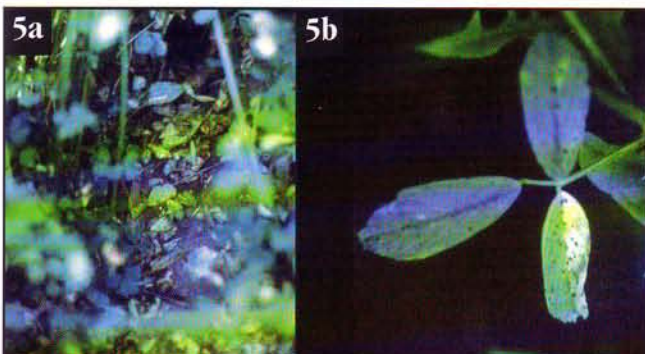
2. Anthracnose



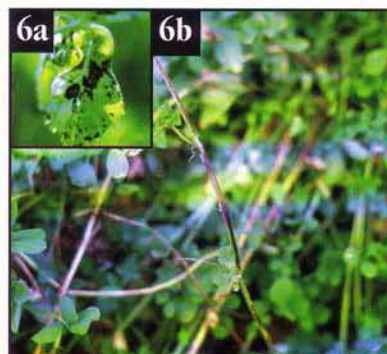
3. Stemphylium Leaf Spot



4. Downy Mildew



5. Common Leaf Spot



6. Spring Black Stem



7. Summer Black Stem



8. Stem Nematode



9. Seedling Blights



10. Phytophthora Root Rot



11. Alfalfa Mosaic



12. Crown Rot



13. Verticillium Wilt



14. Violet Root Rot

Disease	Symptoms
1. Rust <i>Uromyces striatus</i>	Dark reddish-brown rust pustules form on leaves (Fig. 1), petioles and stems; leaves on heavily rusted plants shrivel and fall prematurely; stems attacked when harvest is delayed.
2. Anthrachnose <i>Collectotrichum trifolii</i>	Light to dark brown diamond-shaped lesions on stems containing small black bodies (Fig. 2a); young dead shoots may develop a "shepherd's crook" (Fig. 2b); dead, straw colored stems scattered throughout field; dry rot of crown with bluish-black discoloration associated with winter stand loss (Fig. 2c).
3. Stemphylium Leaf Spot <i>Stemphylium botryosum</i>	Dark, oval to irregular-shaped spots on leaves; older spots large and concentrically ringed with yellow halo; lesions may occur at leaf tips and appear similar to leaf hopper damage (Fig. 3).
4. Downy Mildew <i>Peronospora trifoliorum</i>	Light green to yellow blotches on upper leaf surface; leaves twisted and margin curled down; grayish-white fungal growth on lower leaf surface (Fig. 4).
5. Common Leaf Spot <i>Pseudopeziza medicaginis</i>	Leaves turn yellow and drop as disease progresses (Fig. 5a); small, circular, black or brown spots on leaves (Fig. 5b).
6. Spring Black Stem <i>Phoma medicaginis</i>	Black, irregular spots on leaves and stems (Fig. 6a); stem lesions enlarge until lower stem appears black (Fig. 6b); young shoots may die; petiole infection causes defoliation; stunted plant growth; occurs primarily before first cutting.
7. Summer Black Stem <i>Cercospora medicaginis</i>	Large, circular ash-gray spots on leaves; spots surrounded by yellow halo (Fig. 7); brown to black lesions appear on stem.
8. Stem Nematode <i>Ditylenchus dipsaci</i>	Stunted plants with white shoots scattered through a field (Fig. 8a); plants have bushy appearance (Fig. 8b); crowns swollen, spongy and easily detached; swollen buds contain the nematode which can be seen with low magnification; mostly a problem in first cutting.
9. Seedling Blights can be caused by <i>Fusarium</i> spp., <i>Pythium</i> spp., <i>Phytophthora megasperma</i> f.sp. <i>medicaginis</i> , and <i>Rhizoctonia solani</i>	Seed decay and damping off of seedlings before and after emergence; soft watery rot of roots and stems; seedlings yellow and die rapidly (Fig. 9).
10. Phytophthora Root Rot <i>Phytophthora megasperma</i> f.sp. <i>medicaginis</i>	Yellow, red or purple leaf discoloration with wilting; rotting of taproots; infected areas on roots turn brown to black; taproot is often pinched off, resulting in lateral taproots or branching taproots (Fig. 10).
11. Alfalfa Mosaic <i>Alfalfa mosaic virus</i> (AMV)	Light green to yellow leaf mottling (Fig. 11); stunted shoots; leaf and petiole distortion.
12. Crown Rot can be caused by <i>Fusarium</i> spp., <i>Pythium</i> spp., <i>Phoma medicaginis</i> , and <i>Rhizoctonia solani</i>	Plants stunted with bleached, yellow leaves that wilt under moisture stress. Red to black discoloration of crowns (Fig. 12); rotted tissue interspersed with healthy tissue; crown may be hollowed; gradual thinning of stand.
13. Verticillium Wilt <i>Verticillium albo-atrum</i>	Wilting of upper leaves on warm days; leaves and stems become pale yellow to pink (Fig. 13a); leaflet tip has V-shaped discoloration as an early indication; taproots have a dark ring in cross section (Fig. 13b).
14. Violet Root Rot <i>Rhizoctonia crocorum</i>	Small, circular to irregular patches of brown or dead plants which can expand to larger patches (Fig. 14a); all the alfalfa plants in the interior of the patch may die; roots of infected plants are covered with fungal growth that is bright violet to cinnamon in color (Fig. 14b) that can extend more than 8 inches below the soil line on the root system; small black sclerotia may be present on diseased roots.

Photo Credits: Stem nematode, courtesy of Fred A. Gray, University of Wyoming; all other photos courtesy of faculty in the NU Institute of Agriculture and Natural Resources.

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