SDSU Extension

An identification guide to common

Diseases of Dry Peas in South Dakota

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Scouting Diseases in Dry Peas

Crop rotation is very important in reducing the likelihood and severity of diseases in dry peas. An interval of three years is recommended between pea crops and other related crops such as lentils and chickpeas. Producers are encouraged to have their seed tested prior to planting to ensure that it is disease free and has good germination. Variety selection is also important. Producers can refer to South Dakota Field Pea Variety Trial Results to select varieties best adapted to their location. Variety trial results can be found on the iGrow website at http://igrow.org/agronomy/other-crops/field-pea-variety-trial-results/. Varieties that are resistant to diseases such as powdery mildew are recommended. Scouting peas in the field for diseases should begin soon after germination and continue weekly throughout the growing season.

Figure 1. Hand trowel used for digging around plants to determine root health.

Figure 2. Good germination is an important part of dry pea production.

Root Diseases

Fusarium root rot

- Reddish to brown roots
- Reduction or lack of small lateral roots
- Stunting and wilting of plant (similar to drought stress)
- Chlorosis or yellowing of leaves

Pythium root rot

- Seeds rot upon infection
- Brown discolored roots
- Outer layer of roots peels off easily to reveal vascular tissue
- Reduced plant vigor

Rhizoctonia root rot

- Poor stands and root development
- Brown or reddish-brown lesions near the bottom of the stem and on roots
- Stunted and yellow plants

Aphanomyces root rot

- Brown discolored roots
- Root and below-ground stem will peel off easily to reveal vascular tissue
- Premature dying and/or wilting of plants
- Viable spores can remain in the soil for extended periods requiring longer rotation intervals (6+ years)

Management:

- Extend the interval between host crops. Certain pathogens have specific hosts. For example, both peas and lentils host Aphanomyces, but chickpeas do not.
- Minimize stress.
- Seed treatments are effective against root rots early in the growing season.

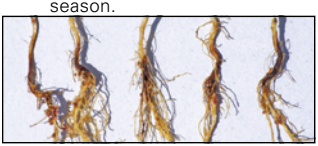

Figure 3. Fusarium root rot in peas.

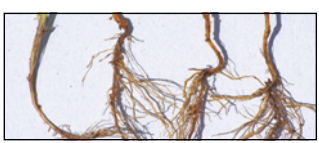

Figure 4. Aphanomyces root rot in peas. Roots are brown and infected and lower leaves begin to turn yellow.

Foliar Fungal Diseases

Ascochyta blight

- Oval or circular lesions on leaves with concentric rings
- Lesions can appear irregular on the leaf and extend to petioles, stems and pods.
- Purple lesions at base of plant can girdle the stem
- Shriveled or discolored seeds

Management:

- Use clean seed.
- Diverse crop rotations
- Seed treatments are effective against seed-borne Ascochyta.
- Foliar fungicides are also effective. Headline, Quadris and Bravo may be used for early season control. For additional fungicide applications rotate fungicides. Other options include Endura, Proline, and Priaxor. Follow labels carefully and rotate fungicide chemistry to prevent the pathogen from developing resistance.

Figure 5. Ascochyta blight on leaves

Figure 6. Ascochyta blight on pods

Foliar Fungal Diseases

Powdery mildew

- White powdery growth typically observed on leaves
- Fresh fungal growth can be easily rubbed off
- Black structures may be seen later in the growing season
- If pods are infected, seeds can become discolored
- Can cause uneven maturity and harvest problems

Management:

- Plant early to minimize exposure to warm dry weather
- Foliar fungicides are effective if applied when disease is in early stage.
- Grow resistant varieties.
- If conditions are conducive for development of powdery mildew, the crop should be scouted every 2 days beginning at initial pod development.

Figures 7 and 8. Powdery mildew on upper surface of older pea leaves

Bacterial Diseases

Bacterial blight

- Angular, water-soaked lesions limited by leaf veins
- Bacterial ooze can be observed on infected tissue under conditions of high humidity.
- Symptoms are observed above-ground.

Management:

- Use clean seed because the bacterium is seed-borne and transmitted.
- Transmission can occur through contaminated equipment or by splashing water, particularly after hail events.
- Fungicides are not effective. Copper based chemicals may be used but there is no data to indicate they are effective.

Figure 9. Bacterial Blight on leaves and tendrils of pea plants

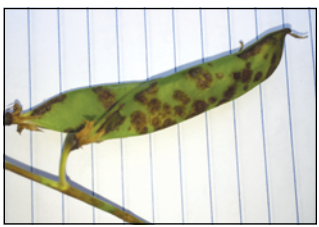

Figure 10. Bacterial Blight on pea pods

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