Root out the rot – a guide to seedling diseases of sugar beet

Pythium

Figure 1: Sugarbeet seedlings infected by *Pythium altimum*. Healthy seedling is on the left.

Affects seedling pre-and post-emergence, but especially pre-. Some species more prevalent in cool (40-70 °F) and others in warm (85°F and higher). Favored by high moisture.

Foliage wilts with dark lesions from the soil line and up, often shrunken.

Aphanomyces (black root)

Figure 2. Black root of beet caused by *Aphanomyces cochlioides* (courtesy R. Harveson)

Affects older seedlings, primarily after emergence. Optimum temperatures 68-86 °F. Favored by moist/wet soil.

Symptoms generally start around soil line, first gray, then very dark to black and thread-like. Cotyledons and leaves generally look healthy until severe.

Rhizoctonia

Figure 3. Rhizoctonia damping-off of sugar beet seedling

Affects seedlings pre-and post-emergence, but most post-. Optimum above 59 °F but can infect down to at least 50 °F. Requires moisture to infect. Symptoms generally at soil line and up.

Foliage wilts and a dark, dry lesion can be seen around the soil line and up, often spreading to the base of the petioles. May be thinner than healthy tissue, but not threadlike

Harveson, Robert M., Linda E. Hanson, and Gary L. Hein, eds. Compendium of beet diseases and pests. St. Paul, MN: American Phytopathological Society, 2009.

Fusarium

Figure 4. Beet seedlings with symptoms of Fusarium damping-off

Affects seedlings at any age, pre- and post-emergence. Varied temperatures are favorable depending on the species. Requires moisture to infect, but symptoms favored by dry conditions and temperatures over 70 °F.

Foliage wilts and yellows, root below soil line generally brown, dry, not shrunken.

Phoma

Figure 5. Phoma damping-off of sugar beet caused by *Phoma betae*. (courtesy of R. Harveson)

Affects seedling pre-and post-emergence, but especially pre-. Favored by cool (39-68 °F) temperatures and moist soil.

Foliage wilts with dark lesions from the soil line and up.

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