Root out the rot – a guide to root rots of sugar beet

Aphanomyces

Figure 1. Active Aphanomyces root rot (top) (Courtesy of R. Harveson) and scabby roots from early damage (bottom). (courtesy O. Neher)

Above ground plant stunted, leaves dull green to yellow, top wilts/droops during the heat of the day, recovers overnight. Rotted areas on root generally yellow to tan and moist when fresh or newly formed, becoming brown, dry, and scabby. Can cause root to become short and malformed. Favored by wet soil and soil temperatures warm (especially 70 °F or higher).

Rhizoctonia root and crown rot

Above ground sudden collapse of leaves, often dark at base. Rotted areas on root or crown usually dark, fairly firm. Shallow when young with distinct separation between diseased and healthy tissue. Can cause cracking of the tissue. Under high humidity, light brown to brown fuzzy growth on surface. Do not store well.

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

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Fusarium wilt and root rot

Bacterial vascular necrosis

Figure 3 Foliar (top) and root symptoms of Fusarium wilt (left) or root rot (right). Top right image courtesy of H.F. Schwartz. All other courtesy of L.E. Hanson.

Above ground plants yellow, especially between veins, often on one side of leaf first. Leaves wilt/droop during heat of the day and usually recover overnight. Internal red to brown rings or streaks. If rot, tan to brown, dry, usually starting at root tip or the crown, often with pockets of fuzzy growth. Some can continue in storage. Favored by temperatures over 72 °F.

Above ground have a few leaves collapse with dark petiole (base), most look normal. When severe, leaves wilt and see foaming on crown. Rotted areas on root generally moist and dark. Turn pink at edges quickly (less than 2 minutes) when cut. Smell of alcohol. Can continue in storage. Favored by temperatures over 75, especially over 82 °F.

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Rhizopus root rot

Above ground plants leaves wilt during heat of day, recover overnight, leaves still green. Rot soft, wet, dark brown and spongy gray inside. May have moist pockets, which smell like vinegar. Favored by standing water in field.

Verticillium wilt

Fig. 2. Sugar beet infected with *Verticillium dahliae*: (**A**)

courtesy of J. Brantner.

Leaves dull yellow, often half leaf first. Vascular tissue light brown. Generally following Verticillium-susceptible crops like potato or mint.

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