A field scouting guide for canola producers

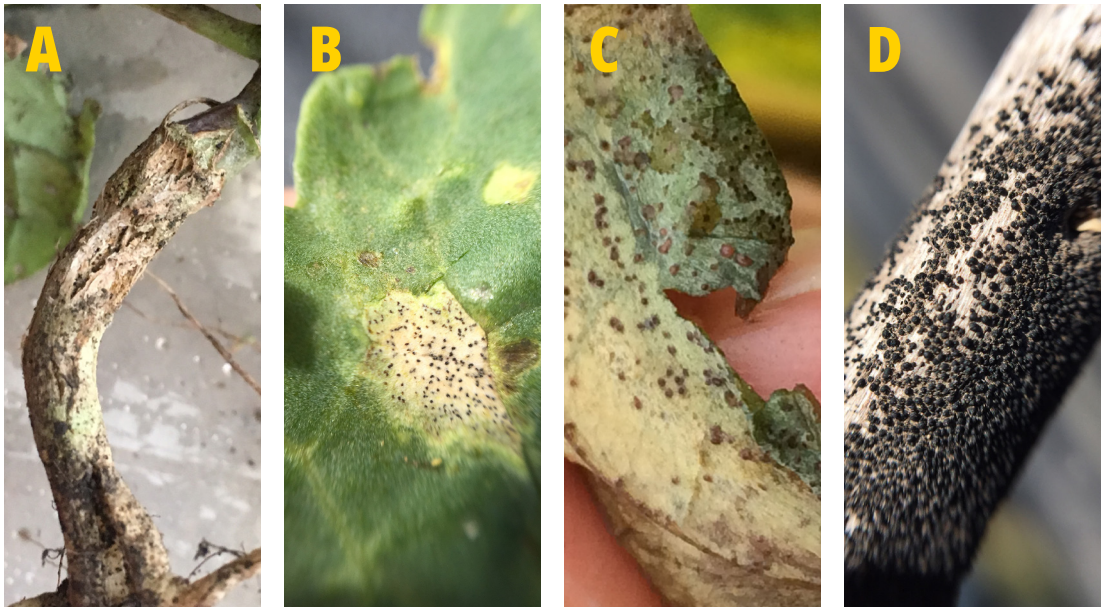
Is it verticillium stripe or blackleg ?

Blackleg and **verticillium stripe** can both cause stunting, leaf chlorosis, lodging, dieback and premature ripening symptoms. Use this guide to differentiate between these two diseases when scouting your canola crops.

STEP 1: Check external symptoms

Blackleg is a stubble-borne disease caused by a fungus that favours wet/warm conditions. Though infection happens in spring, these symptoms are easier to identify later in the growing season:

- Cankering at the base of the stem where it becomes woody. Basal stem lesions may be blackened at the base, with stem tissue constricted or pinched at the soil surface **(A)**.
- Lesions on cotyledons, leaves and stems, usually at the base or points of leaf attachment **(B)**.
- Under moist weather conditions, a viscous pink liquid carrying the pycnidiospores ooze from pycnidia **(C)**.
- Dotting of numerous small, black round pycnidia **(D)**.



Verticillium stripe is a soil-borne disease caused by a fungus that favours infection in stressed canola plants under dry/hot conditions. It is easiest to identify just prior to swath timing or immediately after harvest (prior to decomposition) by:

- Partial stem senescence on one side (half) of the stem **(A)**.
- Peeling back of the outer stem (epidermis) and faint black vertical striping on stems which darkens with maturity **(B)**.
- Shredding and breakdown of the vascular system or inner stem (without sclerotinia-causing sclerotia) **(C)**.
- Late in the season, tiny black ("peppery" looking) microsclerotia (smaller than blackleg pycnidia) occur on stems **(D)**.

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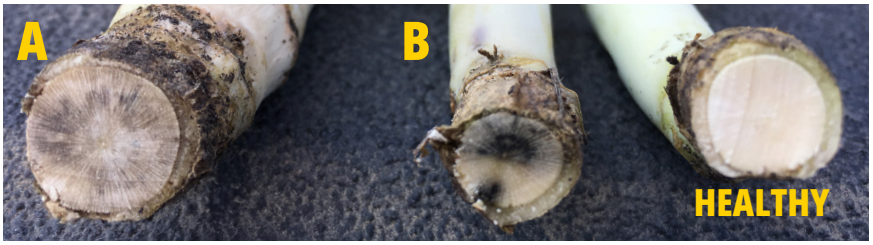
STEP 2: Check the cross section

Cut the stem at ground level near the root and view the cross section.

Verticillium stripe infects the plant from the root up the vascular system, so it can be identified by a greyish hue (not black) across entire cut, with a starburst pattern in earlier stages **(A).**

Blackleg infects plants from the leaves down, so it can be identified by black and/or brown necrotic discolouration, often in pie-shaped sections. It is fully black in extreme cases **(B).**

Credit: Yixiao (Becky) Wang



Plants with both blackleg and verticillium stripe will exhibit symptoms of both diseases **(C)**.

Credit: Yixiao (Becky) Wang

STEP 3: Check the stem

Snip another stem at ground level near the root, cut a few inches of the stem longitudinally and observe.

Verticillium stripe exhibits hollowing and darkening of the inner stem (as the vascular tissue breaks down) with symptoms extending several inches up the stem **(right)**.

Blackleg exhibits blackening of the cortex and epidermis that is restricted to the lower stem, without hollowing of the stem **(right).**

Plants with both blackleg and verticillium stripe will exhibit a hollow and darker inner stem along with blackening of the cortex and epidermis **(photos right)**.

Credit (all four photos): Yixiao (Becky) Wang

STEP 4: Collect plant samples

Submit samples for both blackleg race identification and verticillium stripe testing.

Visit the Canola Encyclopedia for more information on these diseases and talk with your agronomist about a management plan.

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