

## CORN SMUT

Two types of smut occur in the Pacific Northwest. Common smut and head smut are both fungal diseases. Both diseases may be spread long distances by wind-blown spores.

### COMMON SMUT



Common smut can occur on any above ground portion of the plant, causing gall-like swellings. The greenish to silvery galls can grow to 4-5 inches in diameter and contain a mass of greasy or powdery black spores. The covering becomes dry and brittle, breaks open, and permits the contents to spill out. These spores can fall to the ground or become windborne.

Young and/or actively growing parts of the plant are most susceptible. Plants heavily fertilized with nitrogen are usually damaged more severely. Injury from hail, earworms or insect borers encourages infection.

Common smut is more serious during hot weather. In a warm growing season, the amount of smut increases with increased soil moisture, especially in June. Below 60°F there is little spore germination. Optimum spore germination occurs at 70 - 100°F. 'Golden Jubilee' and 'Super Sweet Jubilee' are very susceptible.

Corn smut spores may survive 2-3 years. When cattle feed on affected stalks, spores are contained in the manure and can contaminate vegetable gardens when applied.

### Management

- Planning tolerant cultivars is the best control. Cultivars that show improved resistance over two years of testing in the Columbia Basin include: 'Elite', 'Chase', 'Conquest', 'Eliminator', 'Diva', and 'Marvel'.
- Avoid mechanical injury to plants during cultivation and spraying.
- Provide well-balanced soil fertility.
- Remove and discard or burn galls before they rupture.
- Plant before May 15<sup>th</sup>.

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## HEAD SMUT



Head smut typically attacks the tassels and ears. Ears may be aborted or mere rudiments with leaf buds instead of the normal ear. Dwarfing is a dominant symptom in some cultivars. Usually smut spores replace the entire ear, but occasionally some ears bear a few kernels. Tassels may be completely or partially infected. The gall is a compact mass of dark brown to black spores covered with a thin grayish white membrane. When it ruptures it release a powdery mass of spores that are quickly scattered by air currents and rain.

Infection reportedly occurs in the seedling state: however, greenhouse studies demonstrate infection can occur several weeks after the corn has been planted. Infection may occur at soil temperatures as low as 59°F but occurs more readily at 68-86°F. The fungus is not internally seedborne but can be carried on the seed surface.

### Management

- Rotate corn on a 3-4 year cycle.
- Plant resistant varieties: 'Goldie' and 'Blitz' are resistant for home gardens.
- Plant shallowly (1") to promote rapid germination.
- Keep the seedbed moist the first 4 weeks after planting.
- Maintain balanced soil fertility.
- Promptly remove and burn smutted tassels and ears before the spores are scattered.