



## Small Grains

## Soil Heaving

*Mary E. Burrows, Montana State University Plant Science and Plant Pathology*

*Bill Grey, Alan Dyer, Jeff Stein and Ned Tisserat*

**Cause:** Soil heaving during winter can physically lift young wheat plants and expose the roots to freezing temperatures and to desiccation.

**Occurrence:** Heaving occurs during alternating periods of soil freezing and thawing. Young wheat seedlings are more prone to injury

### Key Symptoms:

- Plants lifted in soil and roots exposed.
- Patches of withered plants
- Soil heaving may predispose plants to *Cephalosporium* stripe infection.

**Problem:** The problem is more severe in fine textured, poorly drained soils and occurs when water freezes and thaws repeatedly.

### Management Approaches

- Plant early enough so that there is adequate root and top growth on the plant before freezing occurs

Categories: Small grains, Diseases, Soil heaving

Date: 04/26/07

*Supported in part by:*

[Western Region IPM Center](#), [EPA Region VIII](#), [National Plant Diagnostic Network](#), [Great Plains Diagnostic Network](#), [USDA CSREES](#), [Colorado State University](#), [Montana State University](#), [South Dakota State University](#), the [University of Nebraska - Lincoln](#), and the [University of Wyoming](#).