



Zadoks 00
Dry seed

Zadoks 01
Start of imbibition



radicle
The first root

Zadoks 05
Radicle emerged from seed



coleoptile
The round sheath that protects the first leaf

Zadoks 07
Coleoptile emerged from seed



Zadoks
00-09

Winter Wheat

DEVELOPMENT AND GROWTH STAGING

Germination

- ✓ Germination begins when the dry seed imbibes water and begins to expand
- ✓ Planting depth and soil temperature influence the duration of the germination stages
- ✓ The coleoptile stops growth when it encounters light above the soil surface
- ✓ The first true leaf emerges through the coleoptile's tip
- ✓ The seminal roots begin developing; seminal roots are fibrous and are produced by the seed



first true leaf

Zadoks 09
Leaf just at coleoptile tip

coleoptile

seed

seminal roots