


TOP 10


Wheat Pests & Diseases in the Pacific Northwest ranked by highest potential economic cost to farmers


For more information visit the web pages for WSU Wheat and Small Grains, WSU Infectious Disease, WSU Pest Management Resources, University of Idaho, and USDA-ARS.


1 STRIPE RUST

 *Puccinia striiformis*


 Damages the plant's skin (epidermis) allowing water to escape and reduces photosynthesis


 Winter and spring, can occur at anytime but greatest damage occurs on the flag leaf in spring


 All systems


 Plant resistant varieties, spray foliar fungicides


2 HESSIAN FLY

 *Mayetiola destructor*


 Larval feeding can stunt plants, reduce yields and cause lodging


 Spring and summer


 Late-planted spring wheat, direct seeding, spring wheat adjacent to winter wheat


 Plant resistant/tolerant varieties, delay winter wheat seeding, avoid spring wheat after winter wheat, crop rotation and destruction of volunteer wheat, seed treatments; start sampling when tillering begins; target ovipositing adults with foliar insecticides when 20% of tillers in winter wheat, or 38% of tillers in spring wheat are infested


3 CEPHALOSPORIUM STRIPE

 *Cephalosporium gramineum*


 Infects roots and colonizes the water-conducting tissue (xylem), resulting in less water movement


 Winter; disease begins in fall, but greatest damage occurs during heading


 All systems, but usually more prevalent in conventional


 Plant tolerant varieties, practice good crop rotation (3 years between winter small grain crops), and avoid early seeding


4 EYESPOT

 *Oculimacula yallundae*, *O. acuformis*


 Lesions occur in leaf sheaths and true stem in the lower 1-2 internodes of the stem resulting in reduced water and nutrient movement and weakened stems that can fall over and lodge


 Disease begins in fall, but greatest damage occurs after stem elongation begins in spring


 Winter wheat; all systems, but usually more prevalent in conventional


 Plant resistant varieties, spray foliar fungicides before stem elongation begins


5 RHIZOCTONIA ROOT ROT

 *Rhizoctonia solani*, *R. oryzae*

 Causes a cortical rot of roots resulting in smaller and less efficient root system


 Winter and spring; symptoms can be observed throughout the season. Infections that occur earlier in the season result in greater damage


 Most prevalent in reduced tillage systems


 Manage green bridge (volunteer)


6 WESTERN FIELD WIREWORM

 *Limoniun infusatus*


 Wireworm feeding can kill plants, reduce numbers of tillers and yield


 Mid-April to the end of July, but can occur throughout the year; larvae can live 1-10 years in the soil


 Spring wheat followed by winter wheat


 Scout using modified solar bait traps or use a shovel; rotate out of winter wheat to a non-susceptible crop, a firm seed bed at planting can limit wireworm movement and damage; conventional tillage, seed treatments


7 FUSARIUM FOOT ROT

 *Fusarium culmorum*, *F. pseudograminearum*


 Crown and root decay results in reduced water and nutrient movement


 Winter; damage becomes apparent after heading as dead standing stems

 All, but most prevalent in summer fallow systems

 Cultural practices like delaying seeding and fertilizing for expected yield potential are the only control measures


8 GREENBUG

 *Schizaphis graminum*


 Causes necrosis from feeding


 Fall


 Winter wheat

 Delay fall seeding of wheat until aphid populations decline to minimize the risk of Barley Yellow Dwarf Virus (BYDV); choose to plant tolerant cultivars; control grassy weeds, including volunteer cereals, within and near wheat production fields; use seed treatments or foliar insecticides


9 ENGLISH GRAIN APHID

 *Sitobion avenae*


 Frequently colonizes the heads of wheat causing little injury except when present in large numbers (more than 80-100 per head)


 Fall

 Winter wheat

 Delay fall seeding of wheat until aphid populations decline to minimize the risk of BYDV; choose to plant tolerant cultivars; control grassy weeds, including volunteer cereals, within and near wheat production fields; use seed treatments or foliar insecticides


10 CEREAL GRASS APHID

 *Metopolophium festucae cerealium*

 Feeding induces a distinctive chlorotic reaction in wheat leaves causing them to turn yellow, also known to carry and transmit BYDV from plant to plant

 Fall

 Winter wheat


 Choose to plant tolerant cultivars; control grassy weeds, including volunteer cereals, within and near wheat production fields; use seed treatments or foliar insecticides

ICON KEY

 Scientific name

 How it impacts crops

 Time of growing season impacted

 Type of cropping system most susceptible

 What farmers can do about it, and when