

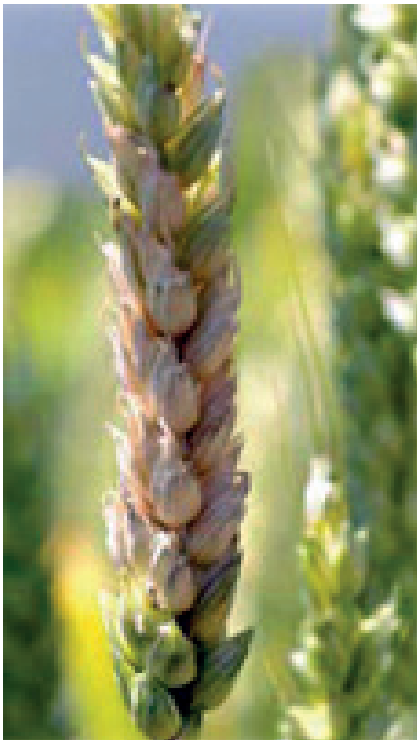
TURNING INFORMATION INTO PROFITS



# **CROP:** Spring and winter wheat

AGRONOMIC ISSUE:

## **Fusarium Head Blight**



- Is a fungal disease that effects cereals crops such as wheat and barley but also impacts corn and oats
- The main species that causes the greatest concern is *Fusarium graminearum*. This species produces significant economic damage from both grade and yield losses, but with most significant loss through downgrading. It also produces toxins that are harmful to humans and animals
- Numerous studies in Western Canada have documented significant grade and some yield losses on CWRS

**MEASURE**



**MONITOR**

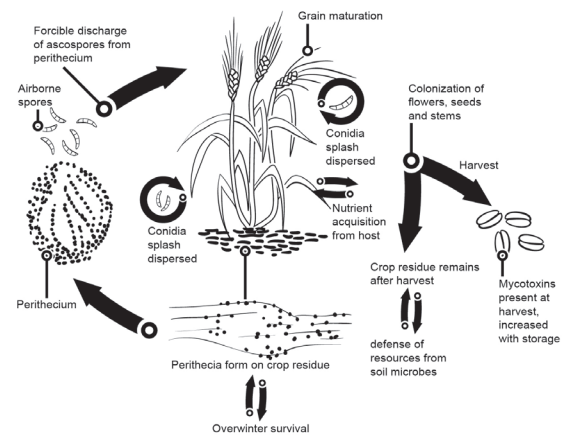
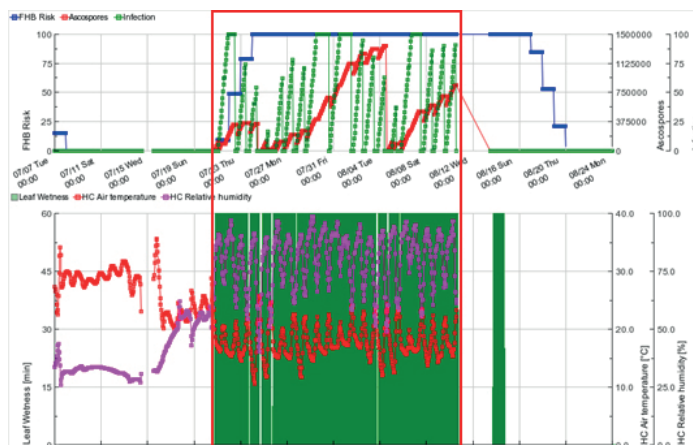


**MANAGE**

## IoT SOLUTION:

# Infield iMETOS 300 weather or ECO D3 disease management station and fusarium disease model by Pessl Instruments.

- With field specific weather solutions, know the modeled conditions for spore infection, mycotoxins and FHB Risk.
- Time fungicide applications based on growth stage and disease risk/pressure.
- Preserve grades and yield based on well-timed fungicide applications.



- Fusarium Head Blight Risk model points out risky time periods for an infection. Whenever 100% infection (green line) is reached the risk (blue line) is very high and conditions for the fungus have been favourable for infection.
- Fungicide application (curative, preventive) should take place during the risky time period shown by the blue line.

## Cost Benefits:

# Fusarium head blight is an extremely destructive disease on grade and yield, but more so on grade.

- Damage from fusarium head blight is quantified by the number of Fusarium Damaged Kernels (FDK) in a sample measured on the percentage of weight.
- Tolerance levels for #1 is <0.25%, #2 <1.0%, #3 <2.0% and feed <5 % of FDK in the sample by weight.
- There has been documented a small decrease in yield, but the main economic impact has been lower grade.

### Example

With disease severity levels varying between 0.5%, 1.2% and 2.2% , downgrading of Canadian Western Red Spring (CWRS) from #1 to #2 or #1 to #3 or #1 to feed on a 55 bushel acre crop has resulted in **\$12, \$35 and \$100 of lost farm income per acre.**

## Voice of the Grower

Fusarium head blight robs my farm of grade and yield, so much so, I have lost \$45 acre on a 50 bushel crop for my 1,000 acres. I've had to change my management practices and use IoT solutions from Pessl to get a better handle on the environmental conditions for FHB disease risk so as to time fungicide applications. The IoT solutions cost my farm \$3,000 a year, which translate into more than 10:1 return on investment.