



**Plot2
Farm**

W007 - Spring wheat fungicide timing

Objective: Compare the yield and quality impacts of different fungicide application timings on spring wheat.

Research support

Research conducted in Alberta by Asif et al. (2021) investigated the effects of fungicide timing on AAC Brandon and AAC Viewfield CWRS wheat. Fungicide application timings including herbicide timing (BBCH 22-23), plant growth regulator timing (BBCH 30-32), flag leaf timing (BBCH 39-45), and heading timing (BBCH 61-63) compared with an untreated check over 8 site years. Results indicated that fungicide applications at flag leaf and heading timing provided the greatest yield increase and economic returns when applied under responsive environments (higher relative humidity (65.4 - 74.0%) and an average 273 mm of growing season precipitation).

This on-farm research protocol will help determine the value of fungicide timing on your farm under typical management.

Field Layout and Selection

Field layout will depend on the number of treatments selected. Review the Research Guide for the best practices on treatment design, choosing your trial and how it should be laid out.

Treatments

To follow good experimental protocol, treatments should be both replicated and randomized. For example, if you are testing 2 treatments, the order of those treatments change in each replication. For example, in replication 1, treatment 1 precedes treatment 2, but in the second replication, treatment 2 precedes treatment 1. This reduces the effects of field variability on results. Take detailed notes to remember the order of treatment applications.

This protocol must include an untreated check as well as 1 or 2 treatments from the Required Treatments list. An optional treatment can also be applied from the Optional Treatments list.

Example 1:

1. Untreated check
2. Required treatment 1
3. Required treatment 2
4. Optional treatment 1

Example 2:

1. Untreated check
2. Required treatment 1
3. Required treatment 2

Within the Application Form, please indicate the selected treatments within the 'App Section B'

Required Treatments:

Untreated check treatment: No fungicide application

Pick 1 or 2 treatments from the list below: Required treatment 1:

Flag leaf timing (BBCH 39-45): Apply label rate of selected fungicide at flag leaf timing.

Required treatment 2:

Heading timing (BBCH 61-63): Apply label rate of selected fungicide with 'Heading/Anthesis' on the label at heading timing.

Optional Treatments:

Pick 0 to 1 treatments from the treatments list below

Optional treatment 1:

Half rate herbicide timing (BBCH 22-23) application: Apply selected fungicide as a tank mix with herbicide application.

Optional treatment 2:

Plant growth regulator timing (BBCH 30-32): Apply label rate of selected fungicide as a tank mix or alone at BBCH 30-32.

Depending on the number of treatments selected, the trial design may include 3 to 4 treatments including the untreated check. See example below of trial that includes 3 treatments.

Replication 1	Treatment 1
	Treatment 2
	Treatment 3
Replication 2	Treatment 2
	Treatment 3
	Treatment 1
Replication 3	Treatment 3
	Treatment 1
	Treatment 2
Replication 4	Treatment 2
	Treatment 3
	Treatment 1

Additional Notes:

1. All fungicide application treatments except for the head timing treatment must utilize the same fungicide product.
2. If tank mixing the selected fungicide with any tank mix partner, the participant is responsible to ensure tank mix compatibility. Alberta Wheat and Alberta Barley Commissions are not responsible for any costs incurred due to tank mix incompatibility or reduced yields from untreated checks or lower yielding fungicide treatments.
3. Always read and follow label directions.

References

Asif, M., Strydorst, S., Strelkov, S., Terry, A., Harding, M., Feng, J., and Yang, Y-C., 2021. Evaluation of disease, yield and economics associated with fungicide timing in Canadian Western Red Spring Wheat. Can. J. Plant Sci. 101(5): 680-697. <https://doi.org/10.1139/cjps-2020-0318>