

Spot Form Net Blotch Management 2007 & 2008

Background

Spot form net blotch – SFNB (*Pyrenophora teres f maculata*) is a key disease of barley in the northern region. It is a stubble-borne disease that has been favoured by the increasing level of stubble retention practised throughout the area combined with a lack of varieties with adequate resistance. Although it is generally regarded as a disease of wet seasons, agronomists in northern areas have noticed concerning levels of disease development, even in recent drier years.

Plant breeding represents the most effective method of long term disease management together with an increase in rotation interval between barley crops. However, fungicides are an important tool that will enable disease management in varieties without effective SFNB resistance but possessing other desirable agronomic attributes.

Current industry guidelines for fungicide timing are to delay application until close to flag leaf emergence. However many experienced advisers have been concerned that these recommendations may need review given recent application timing experiences for stripe rust management and the generally early onset of SFNB infection.

Although this project was focused on SFNB management, an opportunity arose in 2008 to evaluate the same treatments on the closely related net form net blotch – NFNB (*Pyrenophora teres f teres*). Only one trial has been conducted on this disease but the information included because of the similarity to SFNB.

Project aims

In 2007:

1. Identify the impact from spot form of net blotch on yield and grain quality of commercial varieties under regional conditions
2. Evaluate whether there is any benefit in fungicide application prior to flag leaf emergence for this disease
3. Provide additional data to support commercial management practices

In 2008:

1. Further evaluate the impact of application timing on disease management and economic return
2. Compare the efficacy and economic benefits of single and multiple application
3. Investigate the potential of a new fungicide for SFNB management



Spot form net blotch symptoms at harvest, variety Skiff, North Star 2007

Results in a nutshell

Disease control:

- **Single timing:** in these trials the most effective SFNB (and NFNB) suppression was from application during early stem elongation (~GS30-32). Optimal timing may vary when high levels of late season rain are experienced
- **Multiple application timing:** more effective SFNB (and NFNB) suppression than single application. Most effective generally ~GS31-32 followed by later spray
- No consistent rate response to Tilt and no clear benefit from alternative chemistry

Yield impact:

- **Variable SFNB yield response:** Good benefits in both trials in 2007 (mean 221-352 kg/ha) but no yield benefit in two trials in 2008
- 2008 NFNB trial had mean 338 kg/ha benefit

Grain quality impact:

- Clear trend to reduced quality due to SFNB in all trials
- SFNB **increased** average screenings by ~10 to 15% at 3 of 4 sites
- SFNB **reduced** average retention by ~6 to 20% across all sites
- SFNB **reduced** test weight by ~2 to 4 kg/hL across all sites

Overall:

- **Correct identification of SFNB is a major issue with many similar 'non disease' blotches occurring in barley**
- **Fungicide application during early stem elongation provided the most consistent disease suppression**
- **Economic impact of SFNB was variable with average net benefits of ~\$60 to \$100/ha in 2007 but net losses of ~\$6 to \$20/ha in 2008**
- **SFNB resulted in reduced grain quality in all trials**