

EuroBlight Alternaria rating

Field Experiments 2015 & 2016

16 May 2017, A. Evenhuis, H. Hausladen, Bent Nielsen



Aim

- Set up experiment for a decimal rating for *Alternaria* fungicides
- Up to now ratings are given + system
- Rating does not distinguish between fungicides specifically aimed at early blight control and fungicide for late blight control with a side effect on early blight



Current early blight fungicide table

EARLY BLIGHT FUNGICIDE TABLE

Updated 18 February 2016.

Efficacy of fungicides for the control of early blight caused by *Alternaria solani* and *Alternaria alternata*.

Product	Efficacy
azoxystrobin ⁴	+++(+)
fluazinam	(+)
metiram/mancozeb ¹	++
propineb	++
chlorothalonil	+(+)
famoxadone ⁴ +cymoxanil	++
fenamidone ⁴ +mancozeb or propamocarb ²	++
zoxamide+mancozeb	++(+)
pyraclostrobin ⁴ + boscalid ⁵	+++(+)
difenoconazole + mandipropamid	+++
difenoconazole ³	+++

Key to ratings : 0 = no effect ; + = some very good effect



And the famous footnotes

- ¹ This rating applies to products containing mancozeb when used at the highest dose rates (>1500g/ha). This rating may not be appropriate where the rate of mancozeb used is lower, particularly where the second active substance is not effective against *Alternaria*.
- ² In some trials there were indications that the rating was ++(+).
- ³ In some trials there were indications that the rating was +++(+).
- ⁴ *Alternaria solani* isolates that are less sensitive to QoI-fungicides have been isolated from potato plants in Europe. Therefore resistance management strategies should be implemented (see FRAC web site for details).
- ⁵ *Alternaria solani* isolates that are less sensitive to SDHI-fungicides have been isolated from potato plants in some Western European countries. Therefore resistance management strategies should be implemented (see FRAC web site for details).

Ratings will be lower where fungicide insensitive strains are present.

Disclaimer: this is given in the text of the paper from the Limassol and Brasov Workshop.



Agreements Brasov

- Protocol for fungicide efficacy to provide ratings for Alternaria fungicides
- Susceptible variety
- Randomised block design
- Untreated included as plot or spreader row
- Natural infection preferred.
 - Infection via infected wheat kernels allowed



Agreements Brasov

- Reference fungicide
 - mancozeb 7 day interval
 - mancozeb 14 day interval
- First application 6 – 8 weeks after crop emergence
- Disease severity assessed weekly
- For a rating 6 trials with good results are required
- In 2015 3 experiments were carried out.
- In 2016 3 experiments were carried out



Table 1. Fungicides sprayed in the experiments.

Fungicide	Active ingredient	Dose rate L or kg /ha	Spray interval days	Company
A-15-14-01	-	-	14	-
A-15-14-02	-	-	14	-
A-15-14-03	-	-	14	-
A-15-14-04	-	-	14	-
A-15-14-05	-	-	14	-
A-15-14-06	-	-	14	-
A-16-14-02	-	-	14	-
A-15-7-01	-	-	7	-
A-15-7-02	-	-	7 / 14	-
A-15-7-03	-	-	7 / 14	-
A-15-7-04	-	-	7	-
A-15-7-05	-	-	7	-
A-15-7-06	-	-	7	-
A-15-7-07	-	-	7	-
A-15-7-08	-	-	7	-
A-15-7-09	-	-	7	-
A-16-7-03	-	-	7	-
A-16-7-04	-	-	7	-
mancozeb 14	mancozeb	1.5 ¹	14	-
mancozeb 7	mancozeb	1.5 ¹	7	-
UTC	-	-	-	-

¹: dose rate of the active ingredient mancozeb; various products may have been used.

Locations 2015

Table 1. Experimental conditions at the different locations 2015.

Experimental conditions	Denmark	Germany	the Netherlands
Location	Flakkebjerg	Kirchheim	Valthermond
Soil		Pararendzina	Reclaimed peat
Planting	25 April	13 April	8 May
Variety	Kardal	Maxilla	Festien
Crop emergence	1 June	11 May	4 June
Inoculation	24 June	-	27 July
Haulm killing spreader rows		-	-
Specific sprayings June		-	-
Specific sprayings July	13 ¹ , 20, 28	10 ¹ , 17, 24	30 ¹
Specific sprayings August	4, 11	3, 10	6, 13, 20 & 26
Specific sprayings September	-	-	3, 10, 18
Haulm kill			15 October

¹: first specific *Alternaria* spray application. Depending on the treatment the spray interval was 7 or 14 days.

Locations 2016

Table 1. Experimental conditions at the different locations 2016.

Experimental conditions	Denmark	Germany	the Netherlands	the Netherlands
Location	Flakkebjerg	Kirchheim	Valthermond	Westmaas
Soil	Sandy clay loam	Pararendzina	Reclaimed peat	clay
Tillage	CONTIL	CONTIL	CONTIL	CONTIL
Previous crop	Wheat	Triticale	Summer wheat	Wheat
Variety	Kuras	Maxilla	Festien	Ramos
Planting	6 May	4 April	10 May	20 April
Crop emergence	1 June	15 May	7 June	Half May
Inoculation	1 July	-	19 July	-
Specific sprayings July	4 ¹ , 11, 18, 25		21 ¹ , 27	14, 27
Specific sprayings August	1, 8, 17		4, 11, 18, 25	10, 24
Specific sprayings September	-	-	1	-
Haulm kill	-		-	13 September

¹: first specific *Alternaria* spray application. Depending on the treatment the spray interval was 7 or 14 days.

Early Blight epidemic

Table 1. First observation of *Alternaria* infected foliage in the untreated control and in treated plots, during the experiments.

Year	Untreated				Treated			
	DK	DE	NL	NL SW	DK	DE	NL	NL SW
2015	14-7	15-6	19-8	-	14-7	15-6	26-8	-
2016	< 12-7	< 1-7	9-8	18-7	< 12-7	< 1-7	9-8	26-7



Rating

- End of 2016 complete data set for some fungicides
- Calculation of ratings
 - Calculation comparable to late blight calc.
 - 0-5 scale
 - Two categories 7 (side effect) and 14 day interval (specific EB product)
 - EB products in the *Alternaria* table **two** columns
 - Late blight products with side effect on EB in the PLB table (extra column)

Rating

- Reference is **UTC**
- UTC is scaled at 0.0
 - No fixed rating for mancozeb
- Maximum rating is 5
- The rating to beat will be 3.9

Outlook 2017

- Rating to be provided to the participants, shortly
- Accept or refuse publication of a rating by participants
- Remember a.i. should be registered in Europe

- Three experiments in 2017
 - DK, DE, NL
- Lay-out comparable to 2015 & 2016
 - UTC, Reference 2, 5-7/8 treatments

- Update on the EB Protocol



Thank you for
your attention

Remarks ?

