



Foliar diseases in Dutch sugar beet production

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Sugar beet foliar diseases in NL



Powdery mildew (*Erysiphe betae*)

- damage 5-10%



Rust (*Uromyces betae*)

- damage 5-10%



Ramularia (*Ramularia beticola*)

- damage 10-15%



Cercospora (*Cercospora beticola*)

- damage 40%



Stemphylium (*Stemphylium* sp. nov)

- damage 40%

Management of foliar diseases (NL)

- **control of all 5 fungi**

- **cercospora**
- **stemphylium**
- **ramularia**
- **rust**
- **powdery mildew**

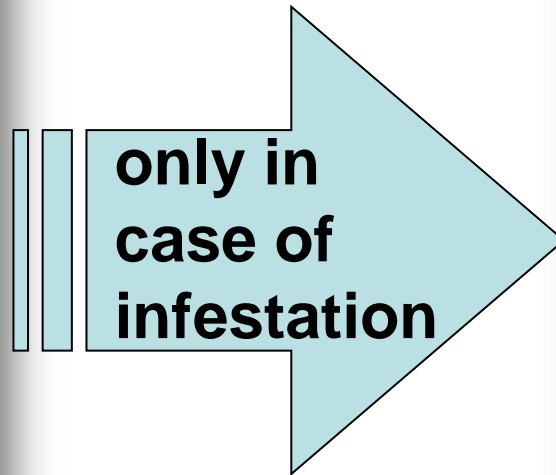


- **damage threshold:
first spots/infestation**

Management of foliar diseases (NL)



1. monitoring



2. application with appropriate fungicide

Warning service for foliar diseases (NL)

- based on samples sent to IRS-Diagnostic Service for proper identification
- warning to monitor fields goes out when symptoms of foliar diseases are found on at least 2 fields with normal sugar beet rotation
- detailed information per warning on www.irs.nl
- growers receive sms from sugar industry



Time of appearance* foliar diseases (NL)

2015	2014	2013	2012	2011	2010
3 July	20 June	11 July	12 July	15 July	28 July

* Time of appearance is time of first warning for one or more regions in NL

After first fungicide application

- 1) start with monitoring again 2 weeks after application (new leaves are unprotected)
- 2) at least once a week
- 3) only at appearance of new infestation a new fungicide application
- 4) start again at 1)

Monitoring based system

Fungicide efficacy against *Stemphylium* sp. nov. (2008-2012)

Active ingredient	Product	Status	Efficacy (- / + / ++ / +++)
epoxiconazole + fenpropimorph	Opus Team	R	-
kresoxim-methyl + epoxiconazole	Allegro	R	-
trifloxystrobin + cyproconazole	Sphere SC	R	+
difenoconazole + fenpropidin	Spyrale EC	R	+
difenoconazole	Score EC	R	(-) / +
azoxystrobin + difenoconazole	Amistar Top	U	+
boscalid + pyraclostrobin	Signum	U	+++
boscalid + epoxiconazole	Venture	U	+++
pyraclostrobin + epoxiconazole	Retengo Plus	U	++

Status: **R** = registered for sugar beet
U = unavailable (not registered)



Susceptibility 29 *Cercospora beticola* isolates from NL (2012)

Active ingredient	resistant (%)
difenoconazole & tetraconazole	51.7
tetraconazole	79.3
pyraclostrobin	10.3
trifloxystrobin	34.5

at EC₅₀ >0,6

Conclusions

- fungicide application at first symptoms is essential for good control of all foliar diseases
- still good control of *Cercospora beticola*, although part of isolates show loss of susceptibility



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