

# Work package 2.1.3

Ramularia leaf spot: genetics,  
epidemiology and integrated  
control



Scottish Government  
Riaghaltas na h-Alba  
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SEFARI



# Ramularia leaf spot

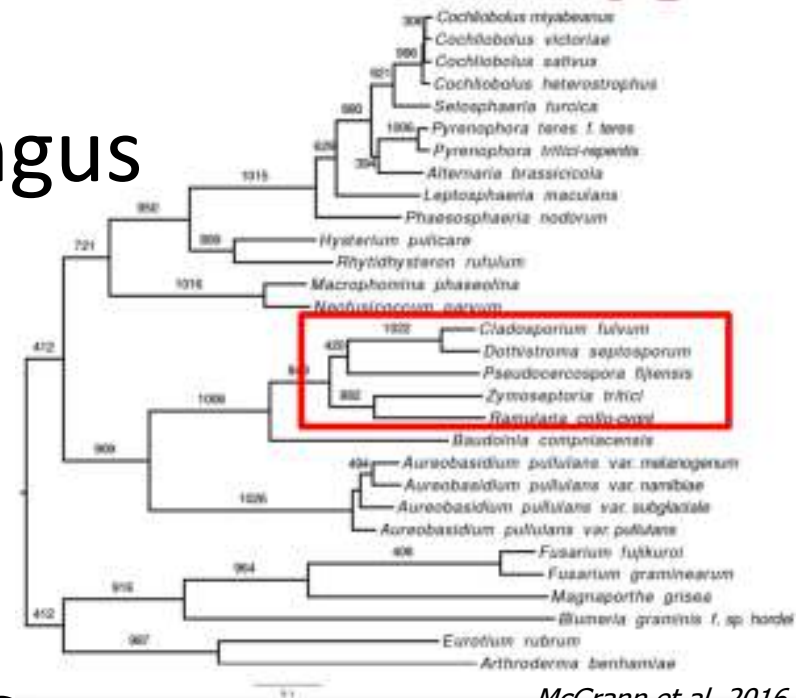
- RLS is one of the main diseases of barley in the UK and Northern Europe
- RLS causes both yield losses (~20% *i.e* £10m *p.a* in the UK) and grain quality reduction
- RLS is a late season disease



# *Ramularia collo-cygni*



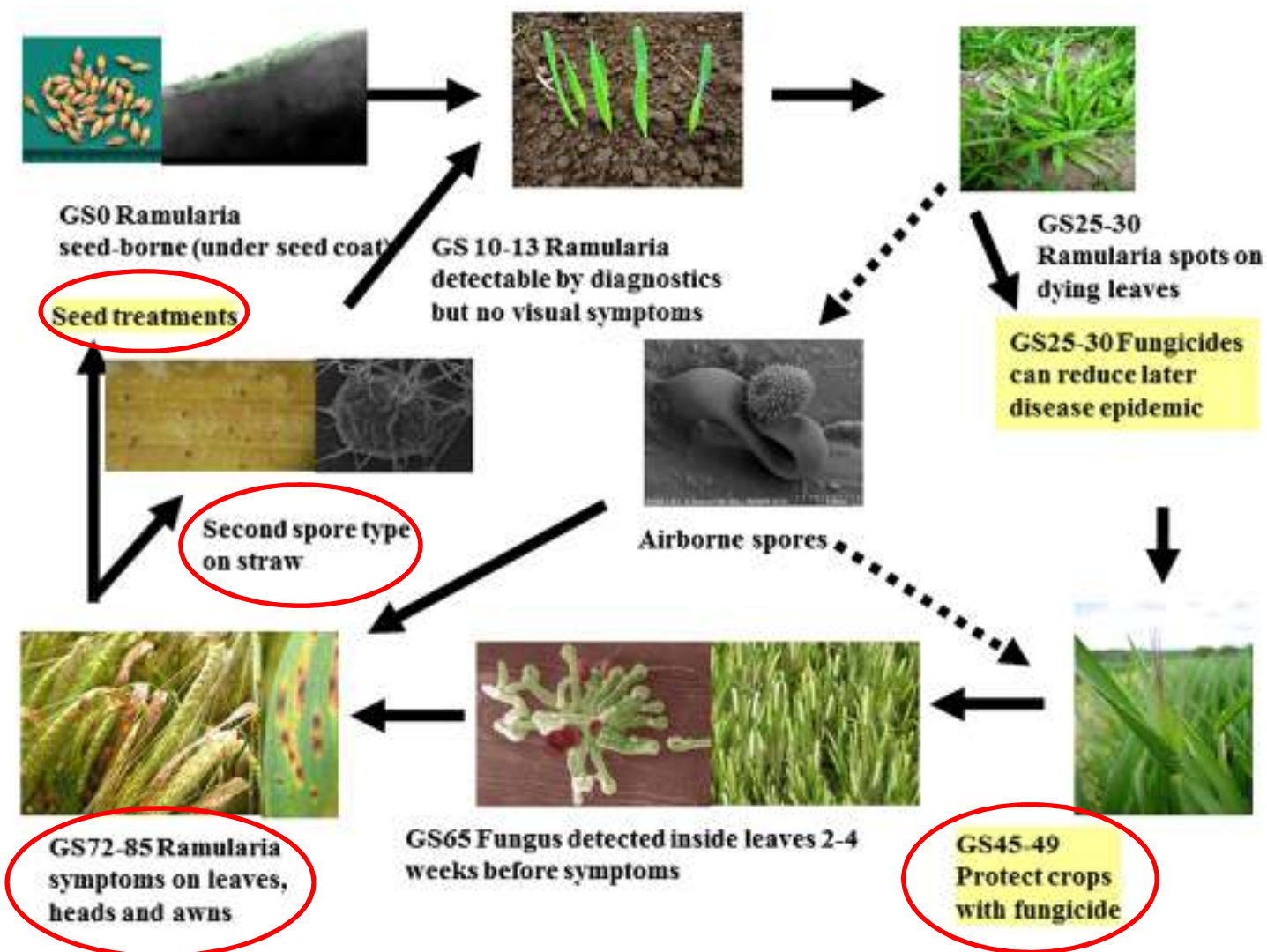
- RLS is caused by the fungus *Ramularia collo-cygni*



- The development of RLS symptoms is associated with the effect of the rubellin toxin



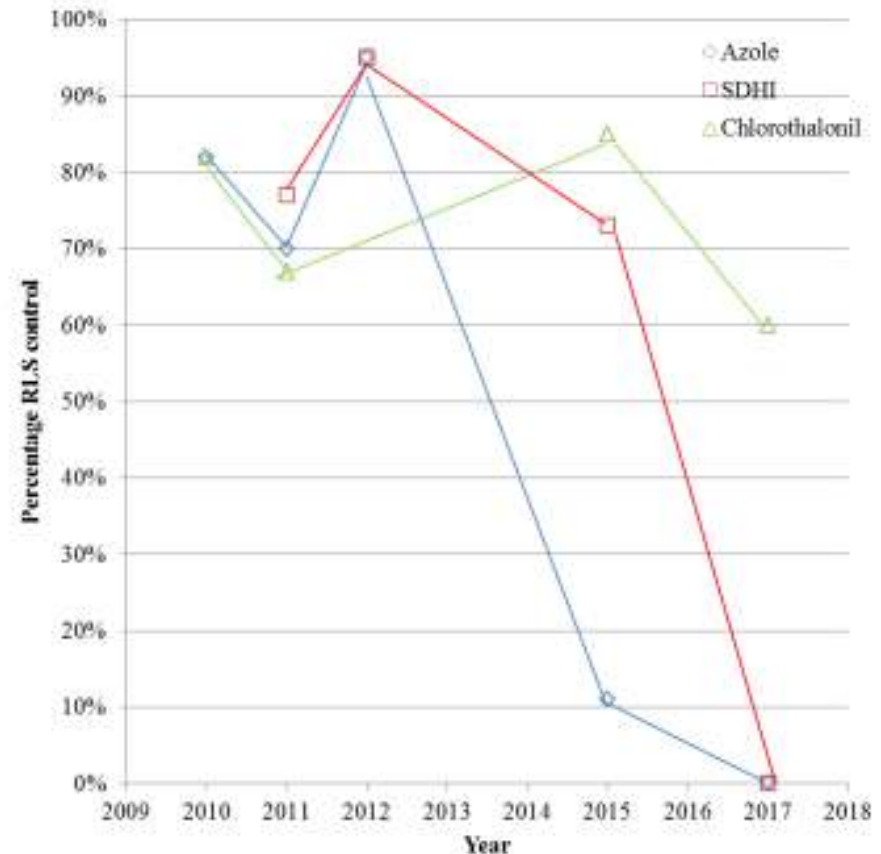
# *R. collo-cygni* life cycle



# Fungicide efficacy drop

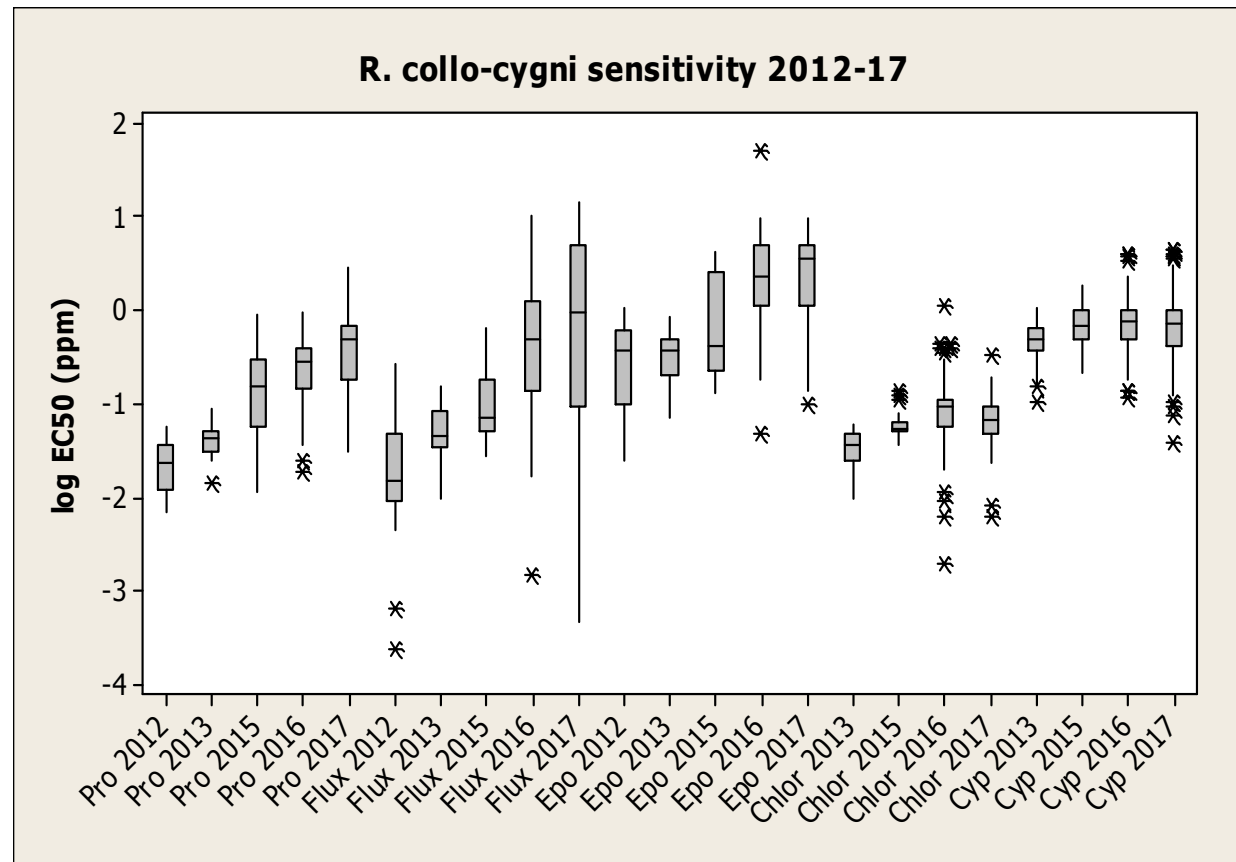


- Controlling RLS now relies on only one fungicide
  - i. Resistance to QoI (2002)
  - ii. azole efficacy drop (2015)
  - iii. SDHI inefficient (2017)



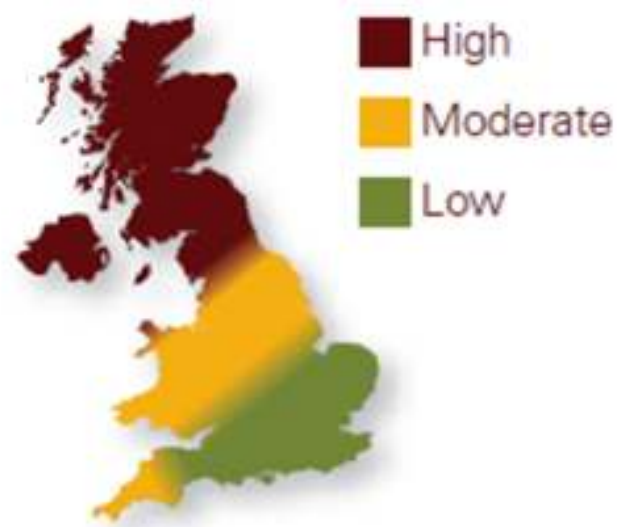
# Rcc sensitivity decline

- Lab-based assays confirm a decline in sensitivity to different fungicides

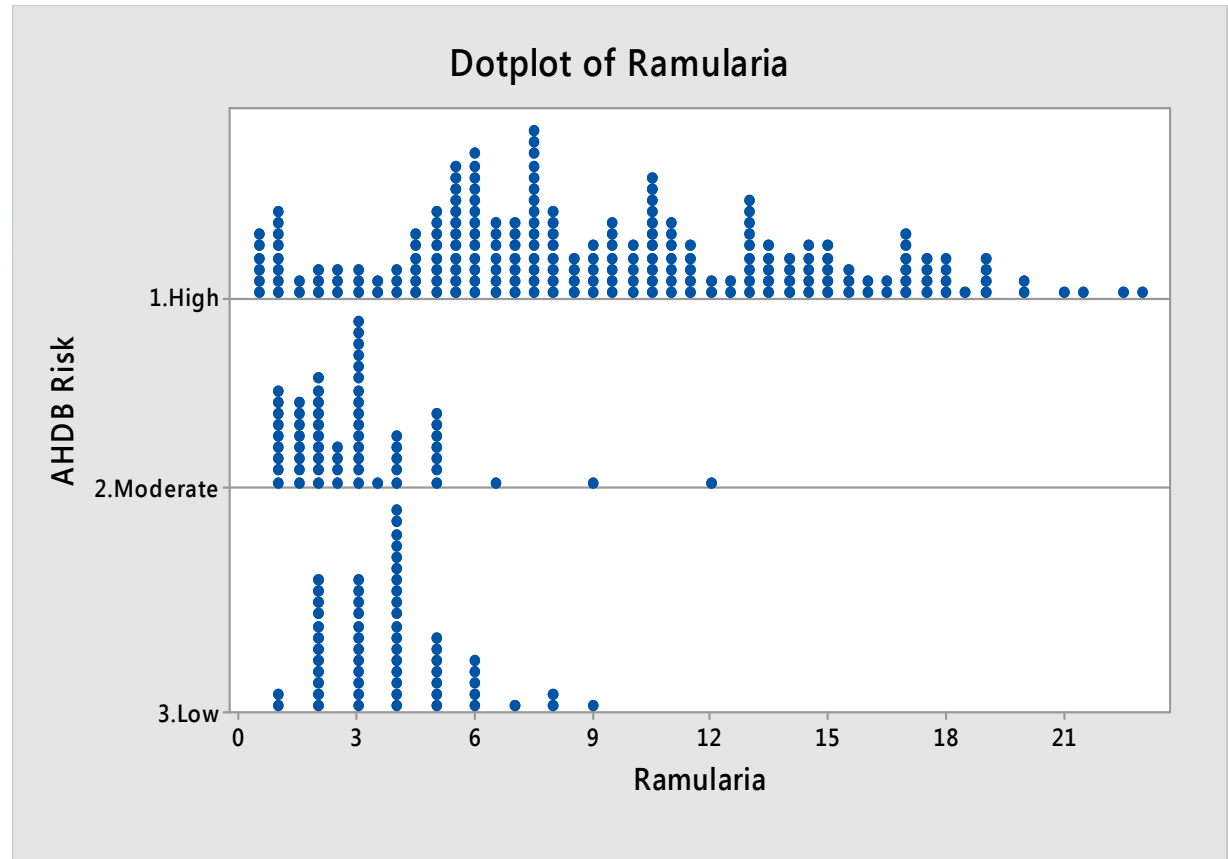


# Rcc risk forecast

- Risk forecast currently based on AHDB risk regions

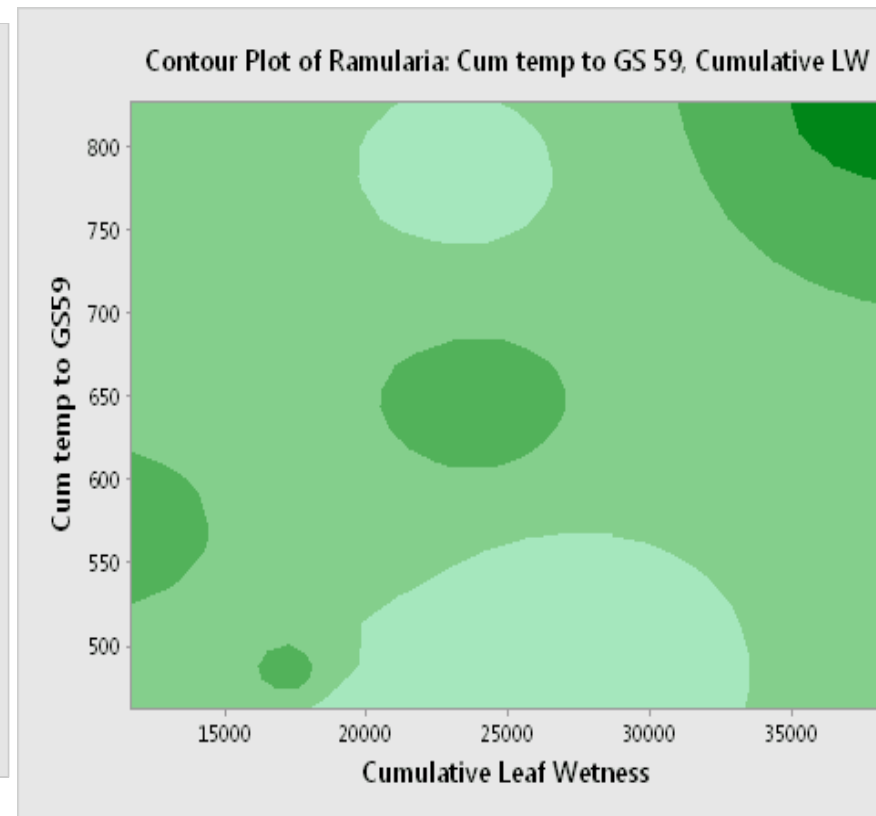
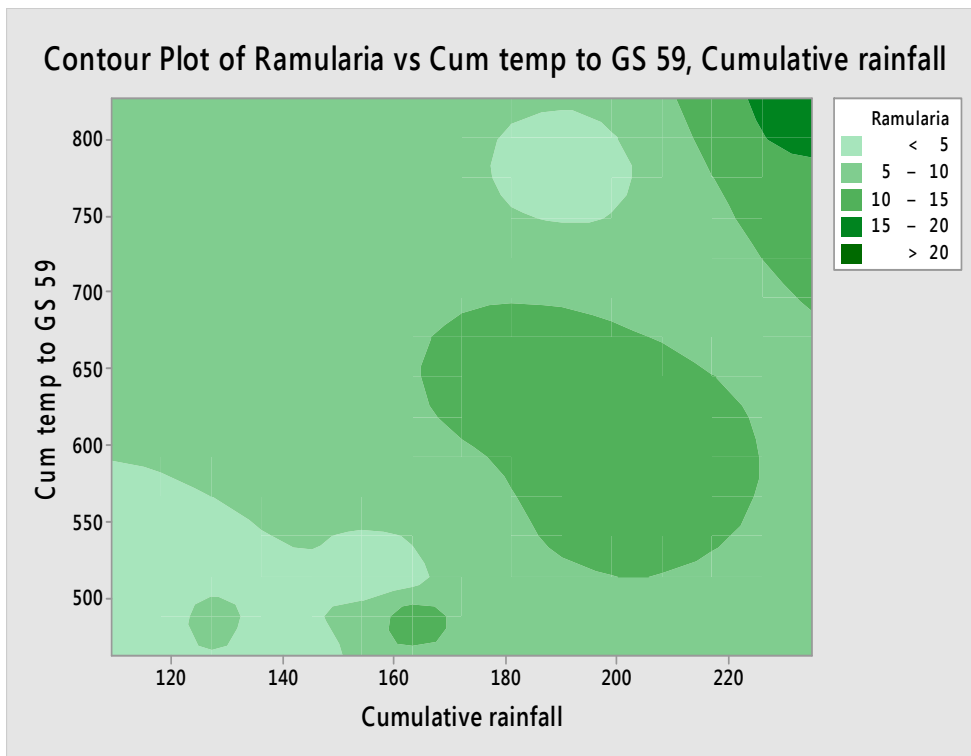


AHDB RLS risk regions



# Rcc risk forecast

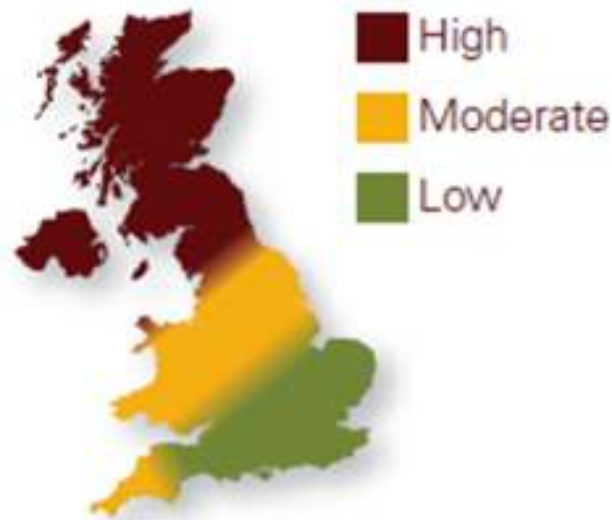
- The environment plays a major role in RLS development





# Rcc risk forecast

- New risk regions are needed to take into account the effect of the climate



AHDB RLS risk regions

## UK climate districts map

This map shows the standard areas (districts) used by the Met Office when generating climatologies.



# Acknowledgment

