

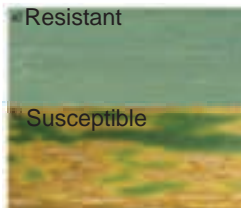


Septoria disease of wheat

- The single greatest threat to Irish and EU winter wheat



- STB requires 3-4 sprays through growing season
- European fungicide input - 70% (>€400 million)
- Fungicide efficacy decreasing
- EU Regulation - prohibition of DMI-based fungicides
- **Need wheat varieties with durable resistance, but**
- Breeding novel varieties takes time (7 – 10 years)
- Need high level of genetic diversity in breeding populations



Disease response



Notes: _____



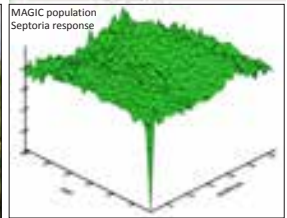
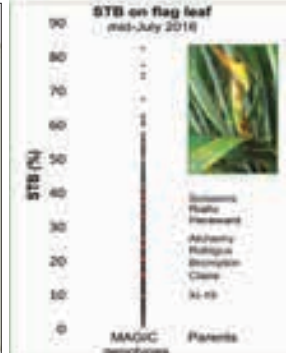
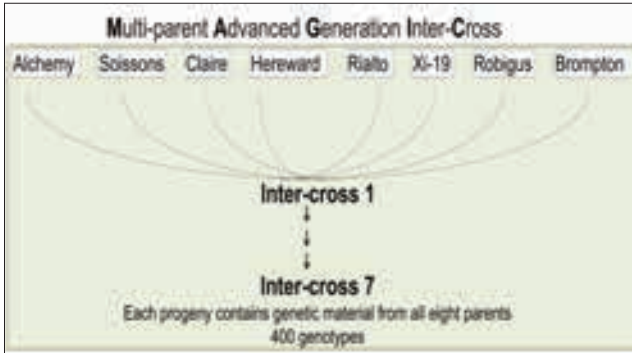
MAGIC winter wheat population

8 parents, with different desirable traits

- yield potential
- grain quality
- disease resistance etc.

Current experiments

- Examining the genetic basis of
- Septoria disease resistance
 - Nitrogen use efficiency



Genotypes & DNA information kindly provided by

Notes: _____



Speeding up for disease resistance

Traditional septoria assessment



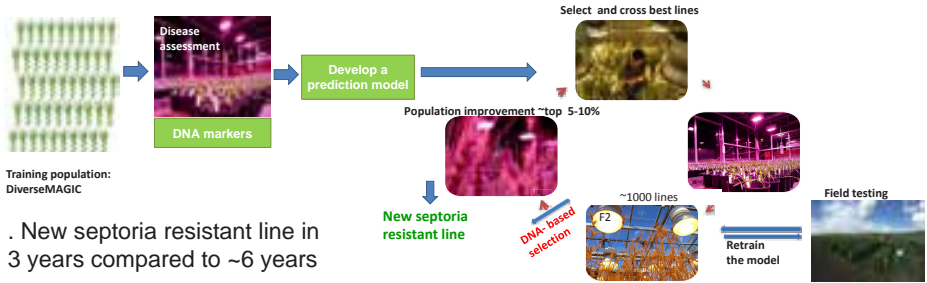
~ 1 year

The 'Speed breeding' and septoria assessment



~ 4 months

Combining speed breeding with DNA-based selection for septoria resistance



This work is funded by MARIE SKŁODOWSKA-CURIE ACTIONS Individual fellowships (IF)H2020-MSCA-IF-2017, ProjectGASAS (794040)

Notes: _____
