



# On farm grass growth prediction in Ireland – 4 year evaluation

*E. Ruelle, L. Bonnard, D. Hennessy, L. Delaby, M. O'Donovan*



An Roinn Talmhaíochta,  
Bia agus Mara  
Department of Agriculture,  
Food and the Marine

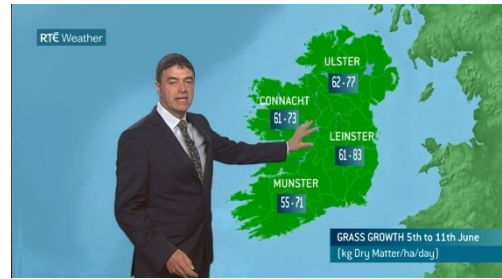
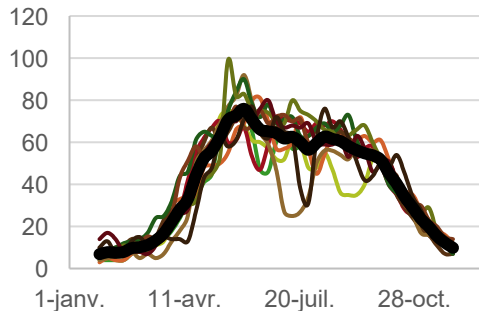


INRAE

# Context: Ireland the green country

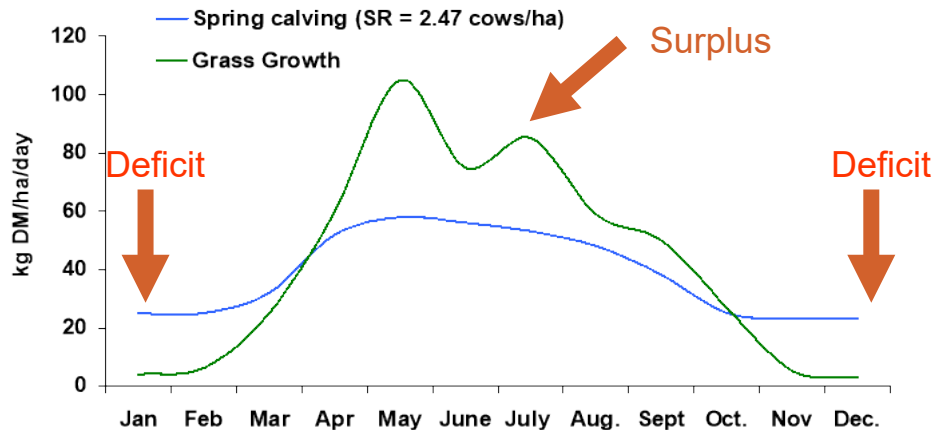
- 80% of the agriculture area is on pasture, hay and grass silage
- Extended grazing season: February to November
- Lots of program to increase grass utilisation

Grass growth (kg DM/ha)



# Why grass?

- Good consumer perception
- Feed quality, Cost!
  - Managing grass isn't easy

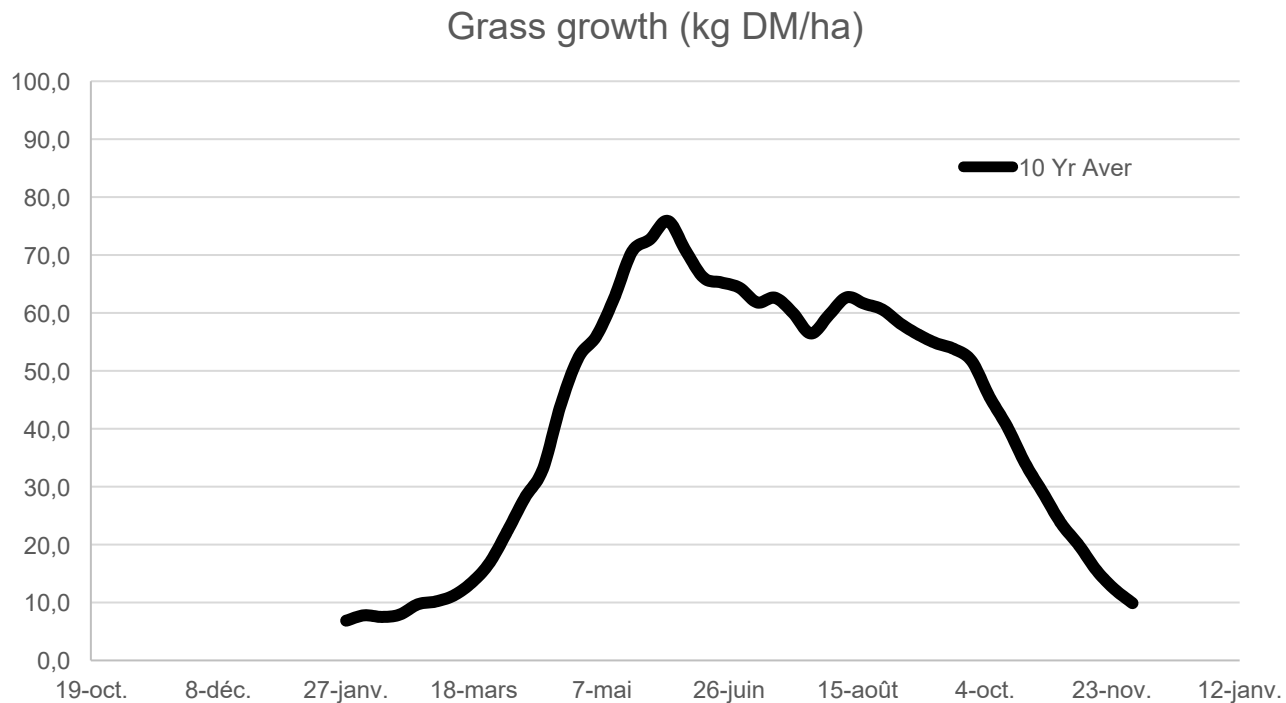


# Plan

- Why grass growth prediction?
- Prediction program presentation
- Evaluation
- Conclusion

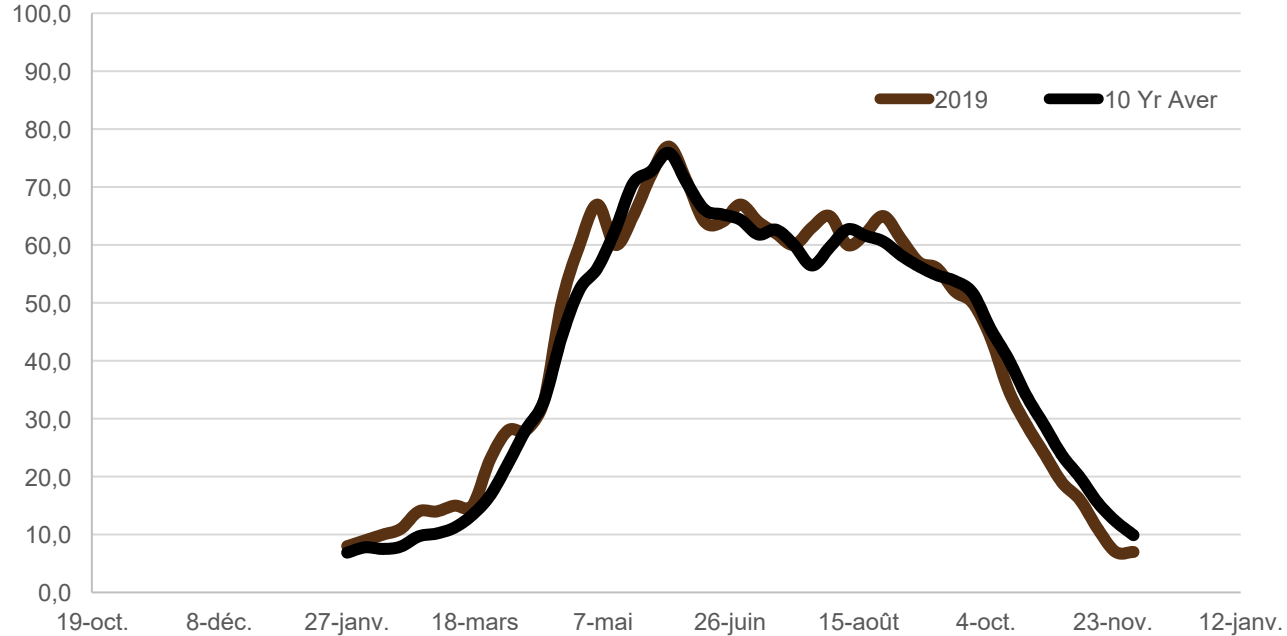


# Why grass growth predictions?



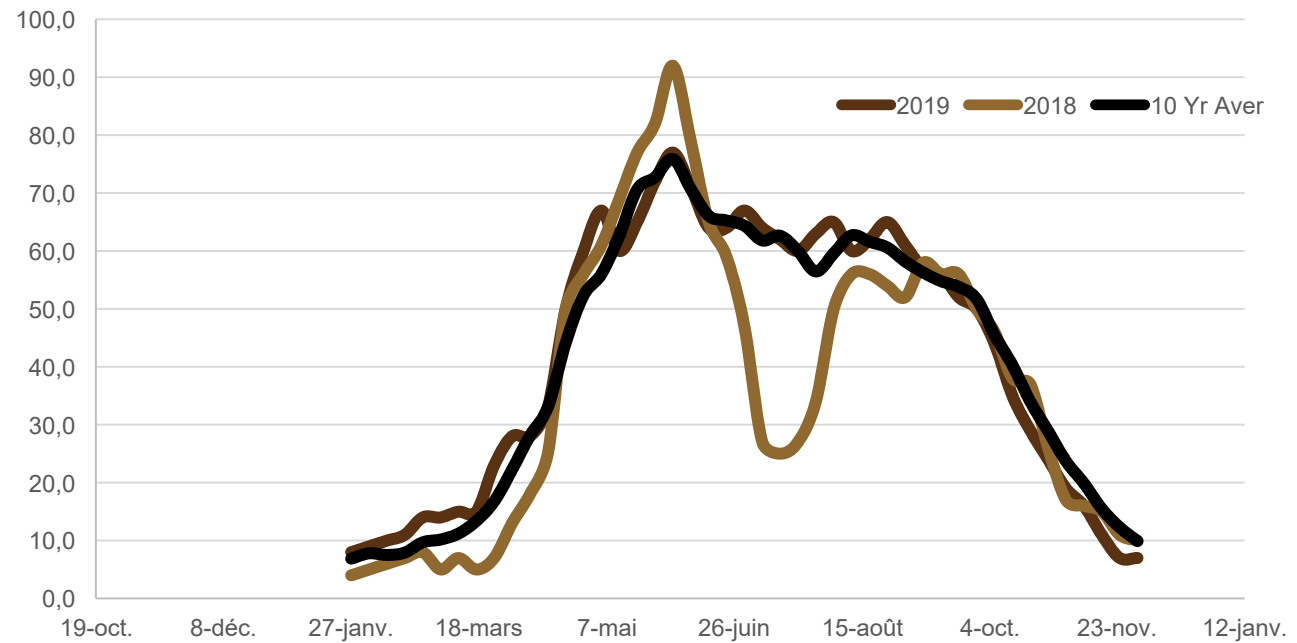
# Why grass growth predictions?

Grass growth (kg DM/ha)



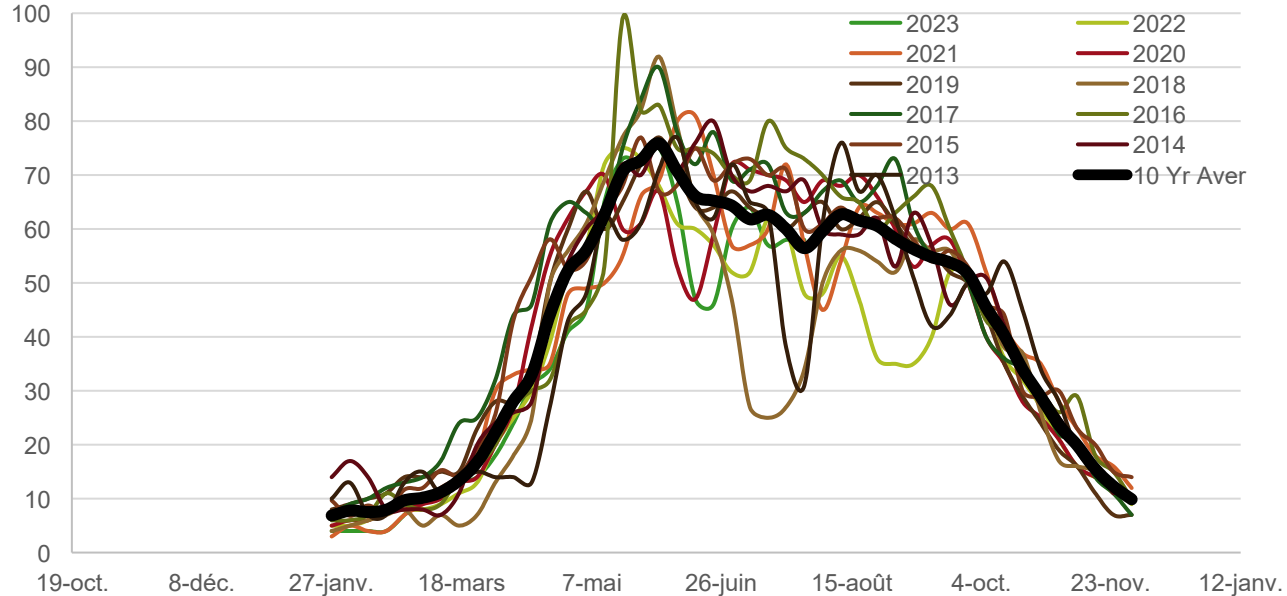
# Why grass growth predictions?

Grass growth (kg DM/ha)

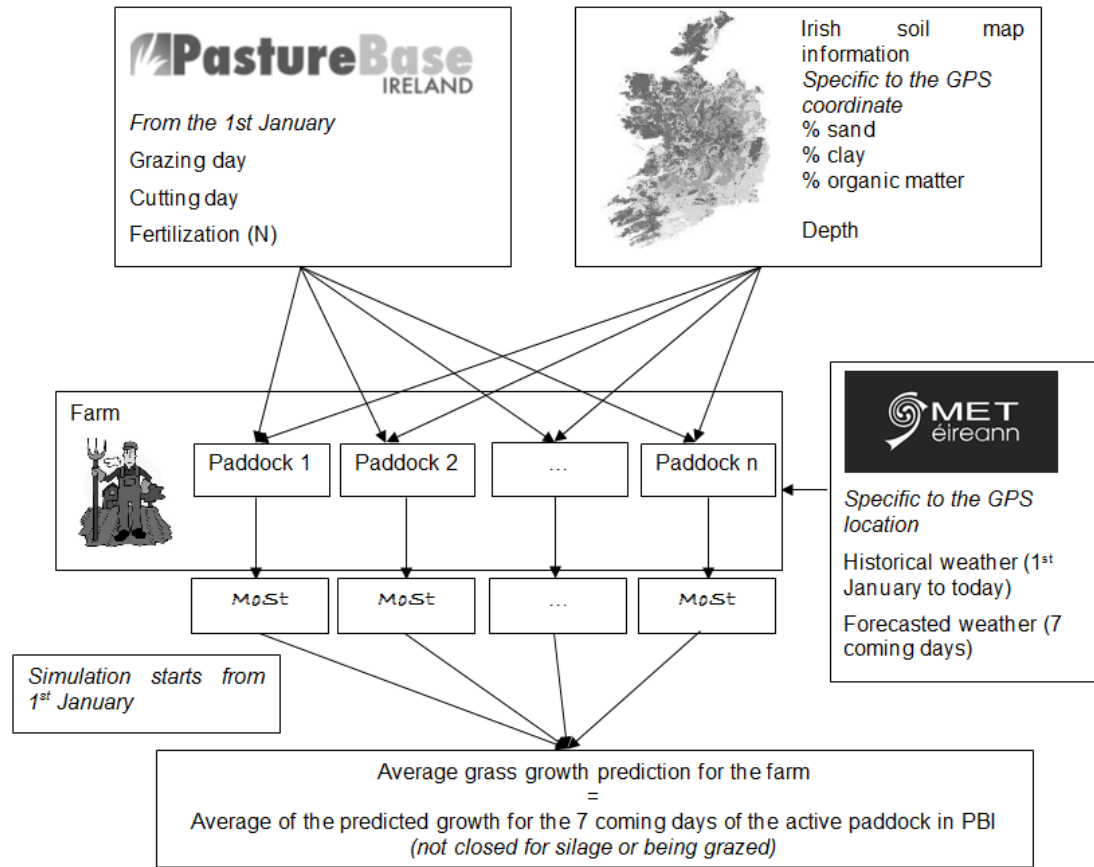


# Why grass growth predictions?

Grass growth (kg DM/ha)

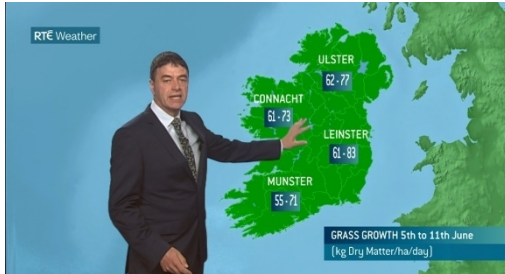


# Live prediction



# Evolution

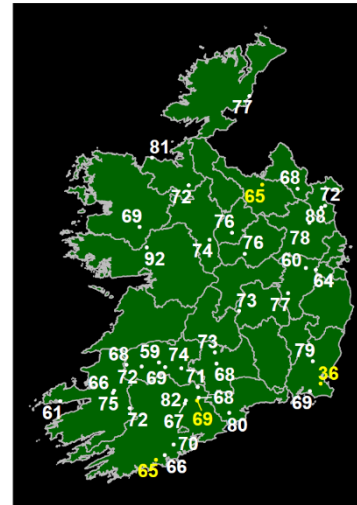
- 2018 start with 3 farms
- 2019 Real start with 45 farms
- Currently 84 Farms
  - Going to farmers WhatsApp
  - Grass 10 newsletter/Farmer journal
  - Met Eireann/government



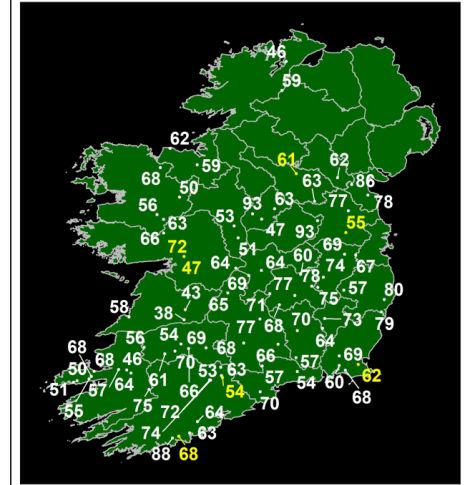
More and more people involved

NATIONAL TV!!!

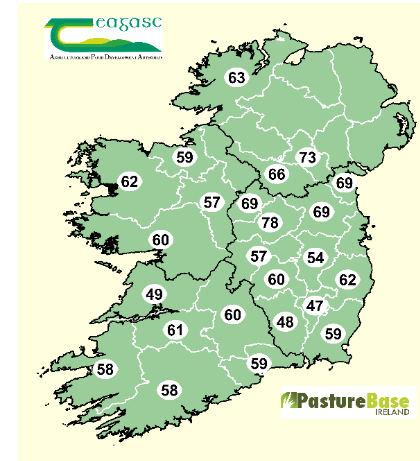
Prediction: 29/07/2019-04/08/2019



Grass growth prediction (kg DM/ha/day): 29/07/2023-04/08/2023

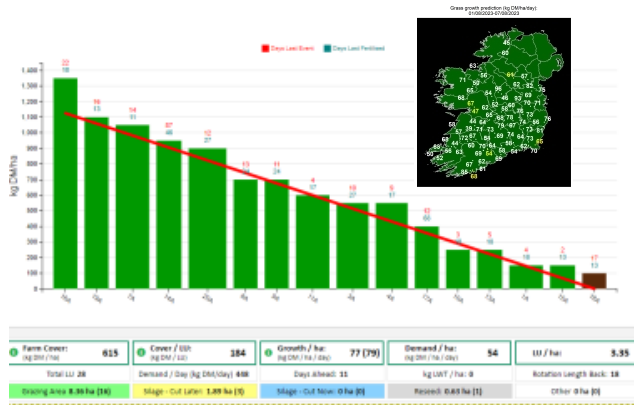


Grass growth predictions  
Next week (kg DM/ha/day)



# Farmer utilisation

Can be used for projected wedge



Decisions?



# Evaluation all farms

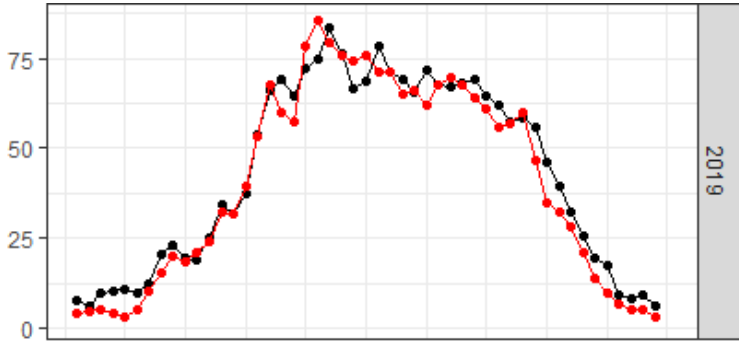
RMSE all farm

actual

*RMSE farm level*

predicted

kg DM/ha



5.1

13.4

# Evaluation all farms

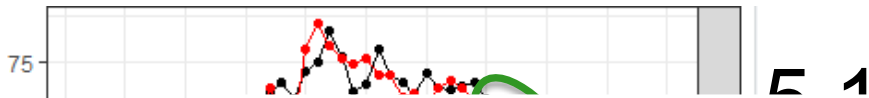
RMSE all farm

actual

RMSE farm level

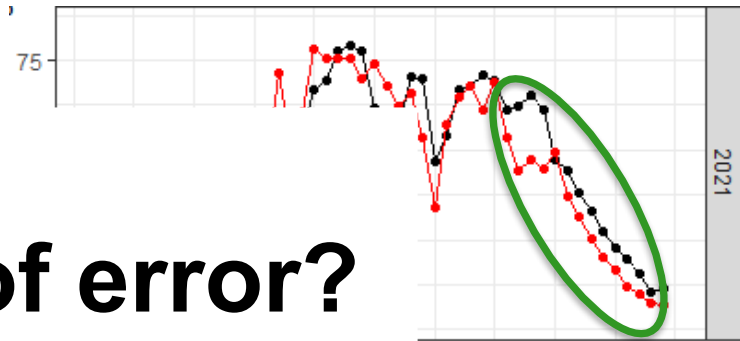
predicted

## Main source of error?



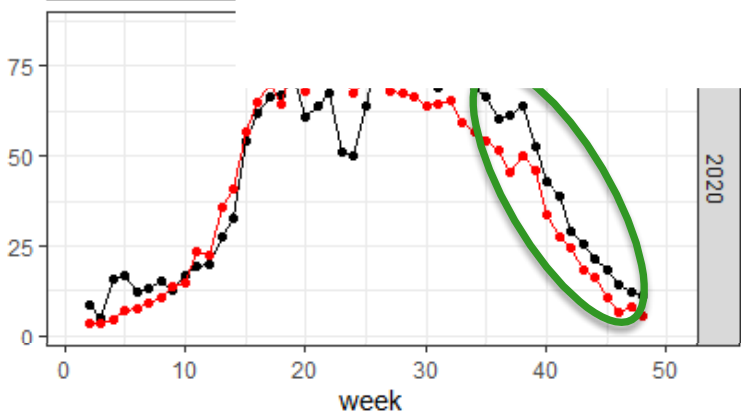
8.9

17.1



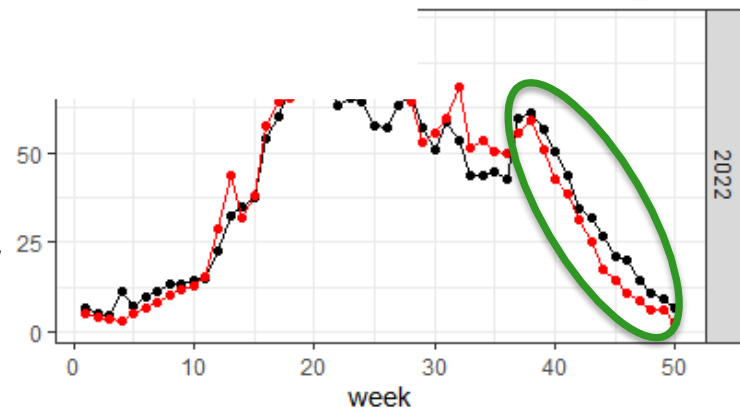
8.0

15.6



8.9

17.1



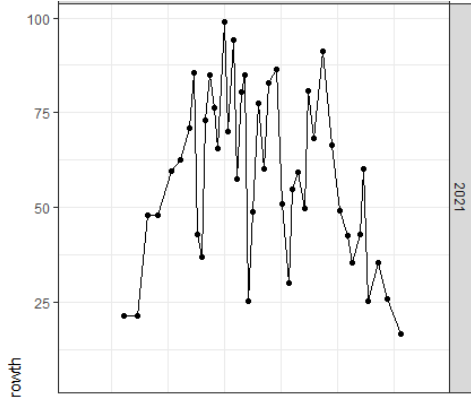
6.4

14.2

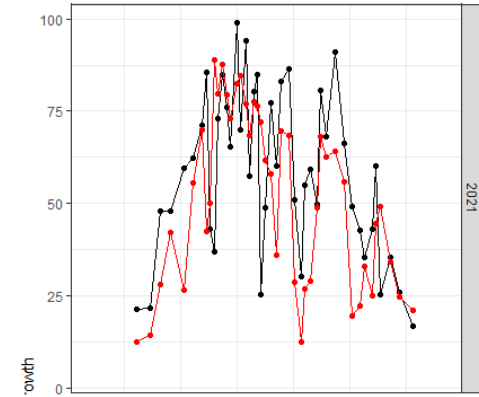
agasc



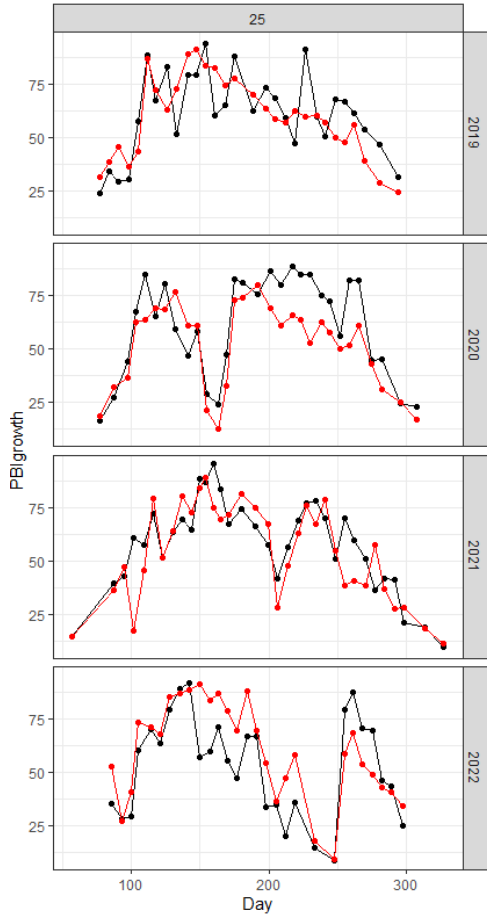
# Individual farms



**Messy data**  
**Farmer estimation!**



# “Drought”

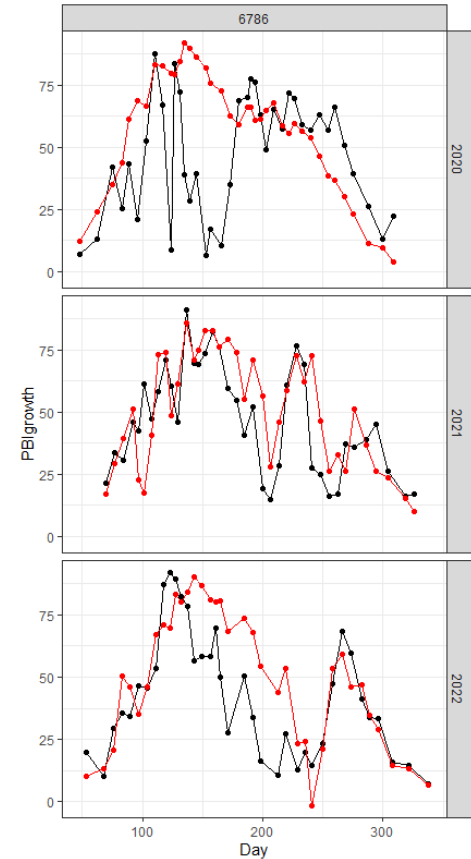


Good on some farm

Bad on others

-> Soil type?

-> Weather?



# Conclusion

- Grass growth prediction at farm level are possible
  - Challenges: weather/soil type/fertiliser...
- There is a high interest in the farmer community
- Will be more and more important in the future (climate change)
- Still lot of work to do!!!
  - Accuracy      Clover      Soil N availability





**Thank you for  
your attention**

