

Downpatrick Monitor Farm meeting report

Meeting 6: Maximising Yield and YEN

Speaker: Sarah Kendall (ADAS)

Date: 2 April 2019

Location: CAFRE Greenmount Campus, 45 Tirgracy Road, Antrim BT41 4PS

For more information, visit: cereals.ahdb.org.uk/downpatrick



Meeting summary – key messages

- Identify key benchmarks to monitor crop performance
- Make comparisons on your own farm and with others
- Look at the season and look at your agronomy
- Identify key targets for progress, design a strategy to improve them and then test it!

Update on Downpatrick Monitor Farm

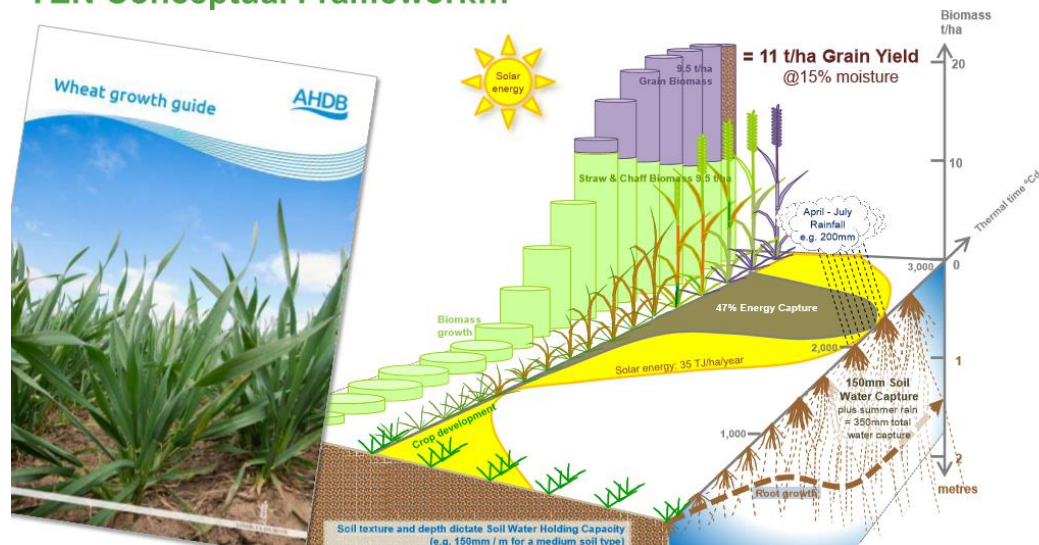
- Generally crops are looking good
- Potatoes have been planted, and then fleeced with soil temperature over 4°C higher under the fleece
- A few breakdowns (JCB / Tiller / Sprayer / tractors)
- Issue in one field of barley with some areas struggling and have a poor root structure
- YEN field looking good, both soil and the first tissue test results show that it is low in boron though
- Chemical applications on the YEN field were Pacifica and then T1 of Kestrel, Imtrex, Meteor, Alatrín and Opti B.



Introduction to YEN

- YEN is about:
 - Shared concepts – ideas and understanding
 - Measurement – competition and benchmarking
 - Testing – learning, confidence and progress
- YEN is based on the conceptual framework from the Wheat Growth Guide on the natural resource requirements of a wheat crop with a 11 t/ha grain yield

YEN Conceptual Framework...



- Wheat grain yields have been pretty static, so the YEN project looks to close the “innovation gap” between current yields and the bio-physical potential of the crop, either by increase capture or conversion of natural resources

Benefits of YEN

- Benchmarking yields against potential yield as well as other entrants (both yield in t/ha and % of the potential yield)
- Technical understanding of yields through a report on the entry detailing the crops use of natural resources and yield constraints
- Soil health analysis (+ SMN), tissue analysis and grain analysis
- Technical sessions with other YEN entrants (newsletters, website and networking sessions).

YEN Database Analysis

- Analysis based on around 570 yields from more than 250 farms (mostly winter wheat)
- Yields ranged from 5 – 16.5 t/ha with an average of 10.8 t/ha
- Statistical analysis showed the following **associations** with yield including:
 - Harvest year only caused around 25% of the variation
 - Large yield gaps and high yields are widespread
 - 75% of the variation is associated with the farm husbandry
 - Water-retentive soils yielded more
 - Variety (and nabim group) explained grain protein variation but not yield
 - Site, weather and husbandry had more influence than variety choice
 - Yields best after break crops and straw incorporation
 - N Fertiliser rate had a positive association
 - Fungicide use related to yield
 - Large yields tended to come from large crops with high ear populations and high biomass
- YEN 2013-2018 result conclusions:
 - Database analysis can only show associations – not cause and effect but does raise good questions
 - Yield enhancement is possible, and yield was more about the farm than the weather
 - We should all hope for dry bright winters, bright springs and cool summers
 - Farm factor affects yield significantly, soil type played a part but also attention to detail
 - Yield appears vital for both profit and sustainability
- High yielding farms:
 - Develop crop momentum
 - High yielding crops have many grains > 30,000/m², large tall shoots and often many ears 600-700 ears/m², canopy longevity (to the end of July or more) and deep roots
 - Require holistic agronomy – it isn't what you spend but how you spend it, little and often and attention to detail.

YEN would not exist without its sponsors

Cereal YEN sponsors



Oilseed YEN sponsors



Richard's 2018 YEN entry

- Yield was 10.2 t/ha
- Potential yield was 16 t/ha (water limited)
- Long term average potential yield was 22.1 t/ha
- Short crop with low biomass and low ear number leading to high Harvest Index
- Despite reduced rainfall, crop not harvested early. Prolonged canopy life? But low % light captured. Earlier canopy closure in future?
- TGW average, grains/ear average (not a lot of compensation for low ear no.)
- Crop late drilled with low seed rate –increase seed rate? Promote tillering, & tiller survival
- P soil index adequate, but grain P low. Something to check.



Find out more – Links to AHDB information sheets or research

[Wheat Growth Guide](#)

[AHDB Recommended Lists for cereals and oilseeds 2019/20](#)

[Crop yields and how to maximise potential webinar](#)

[Yield Enhancement Network](#)

Next meeting

Date: 18 June 19

Topic: Summer Farm Walk

Time: 11:30

Location: Meadow Farm, 27 Marshallstown Road, Downpatrick, BT30 8AH

AFBI and AHDB Open Day featuring Arable Connections ([Register here](#))

Date: 25 June 19

Topic: Variety tours and information sessions

Time: 09:30

Location: AFBI Crossnacreevy, Houston Road, 50 Houston Road, Crossnacreevy, Belfast BT6 9SH

[AHDB Events Website](#)

For more information or to find out more about Farmbench, AHDB's benchmarking tool,

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