

Organic Spring Oats Trial, Duncannon



Treatments

1. Untreated
2. Organic Poultry Manure Pellets (1235kg/ha =0.5t/ac)
3. Biostimulant
4. Supersoil (250gram/ha)
5. Dairy Processing Sludge (5t/ha)
6. Cattle Slurry (3,000 gals/ac) (33m³ per ha)
7. Seaweed Powder
8. Free-range layers poultry manure (4t/ha)



Spray
Treatments

Trial Layout

6 201	3 202	8 203	2 204	1 205	5 206	4 207	7 208	1 401	4 402	2 403	8 404	5 405	6 406	3 407	7 408
5 101	4 102	1 103	7 104	6 105	8 106	2 107	3 108	7 301	3 302	6 303	5 304	1 305	2 306	8 307	4 308

8 randomised treatments: 4 Reps

Trial Site Background

- Medium to Heavy Soil
- Previous Crops
 - 2022 Combi-crop
 - 2021 Maize
 - 2020 Grass
- Soil Fertility
 - pH = 6.1
 - P = 5.6 mg/L
 - K = 97 mg/L



Key Dates

- Friday April 21st
- Friday May 12th
- Sunday June 4th
- Friday July 7th
- Thursday Sept 7th

Trial Sown

Hand-spread treatments

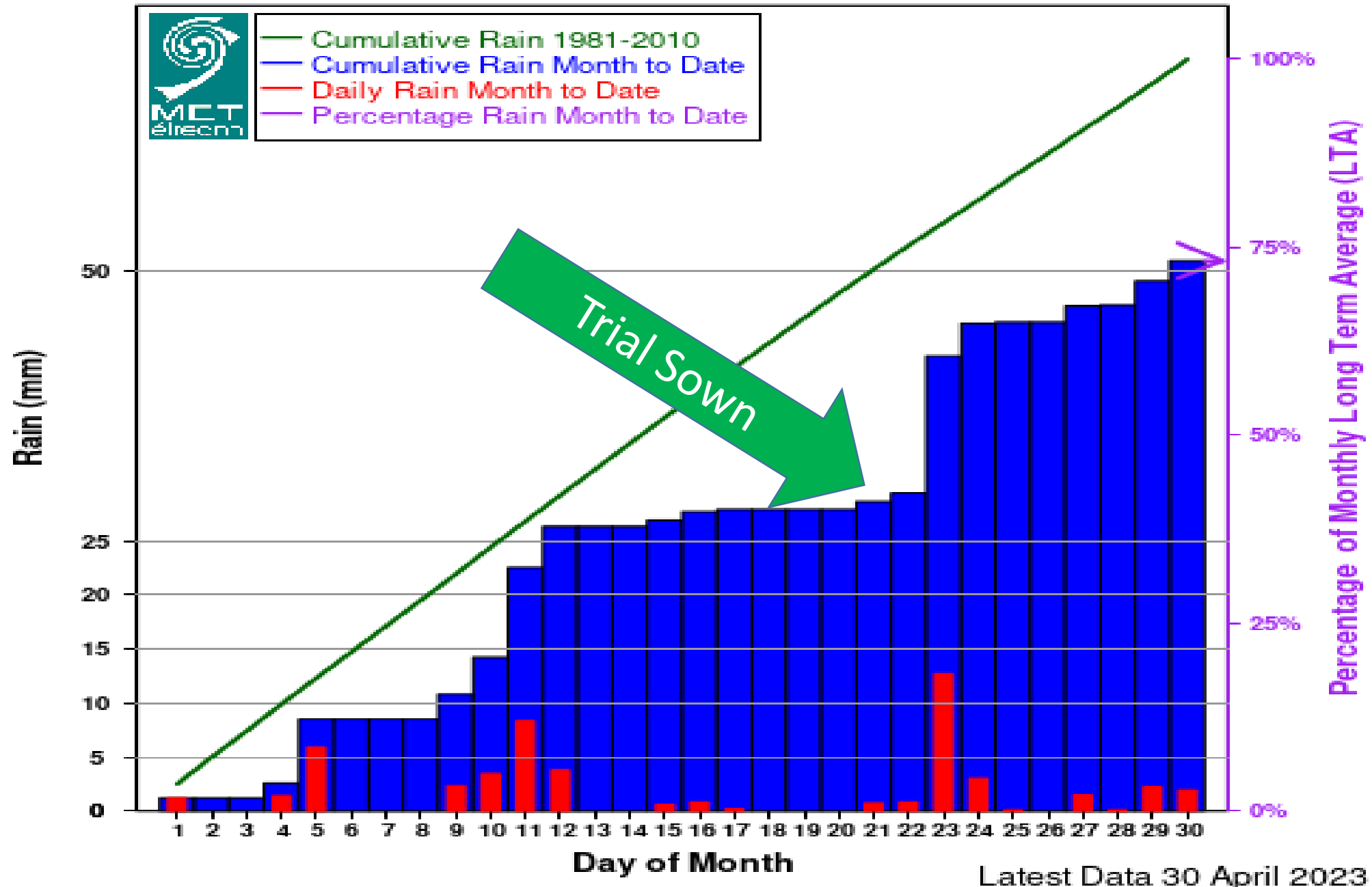
Spray treatments

Viewing event

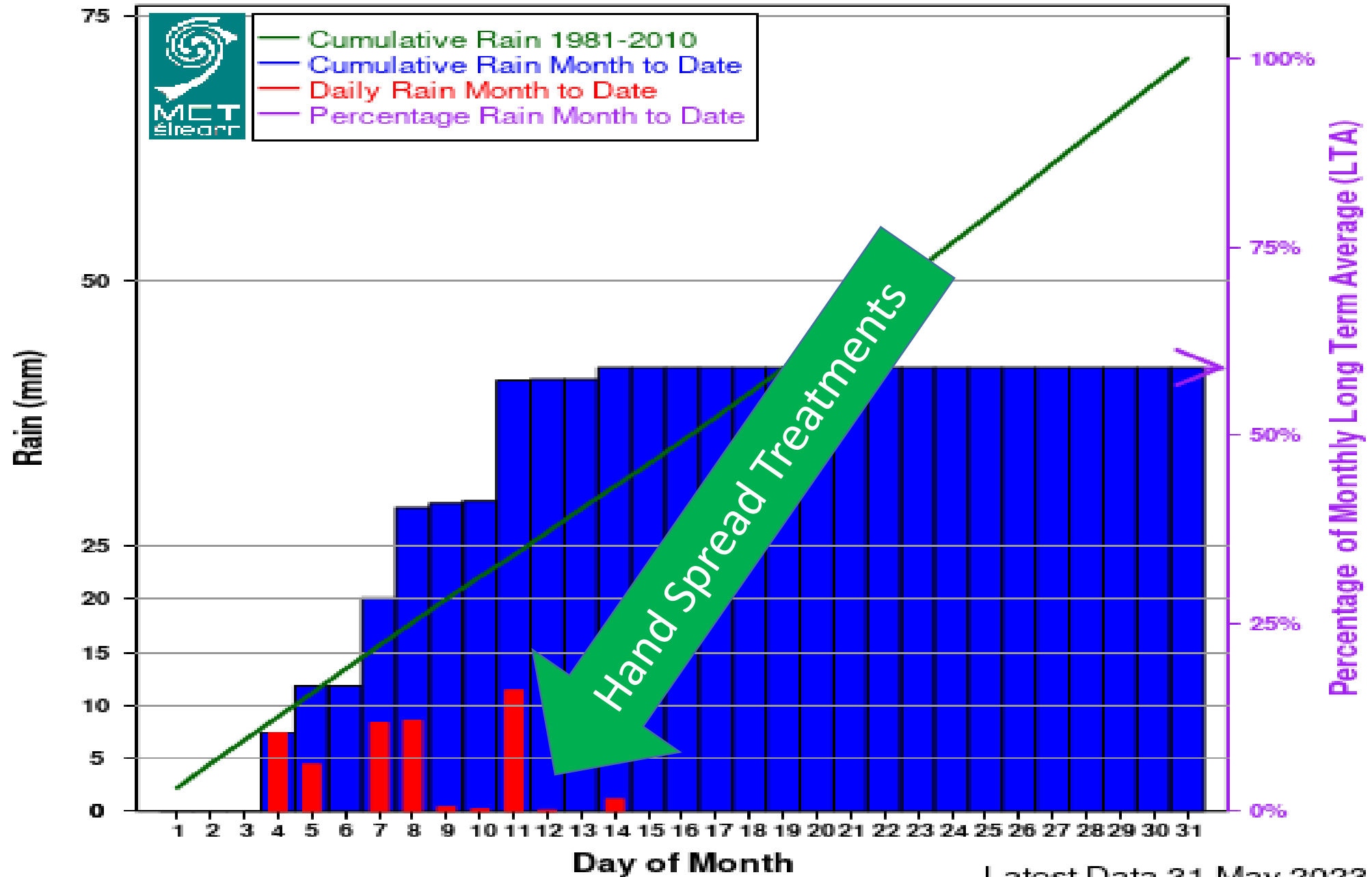
Trials harvested



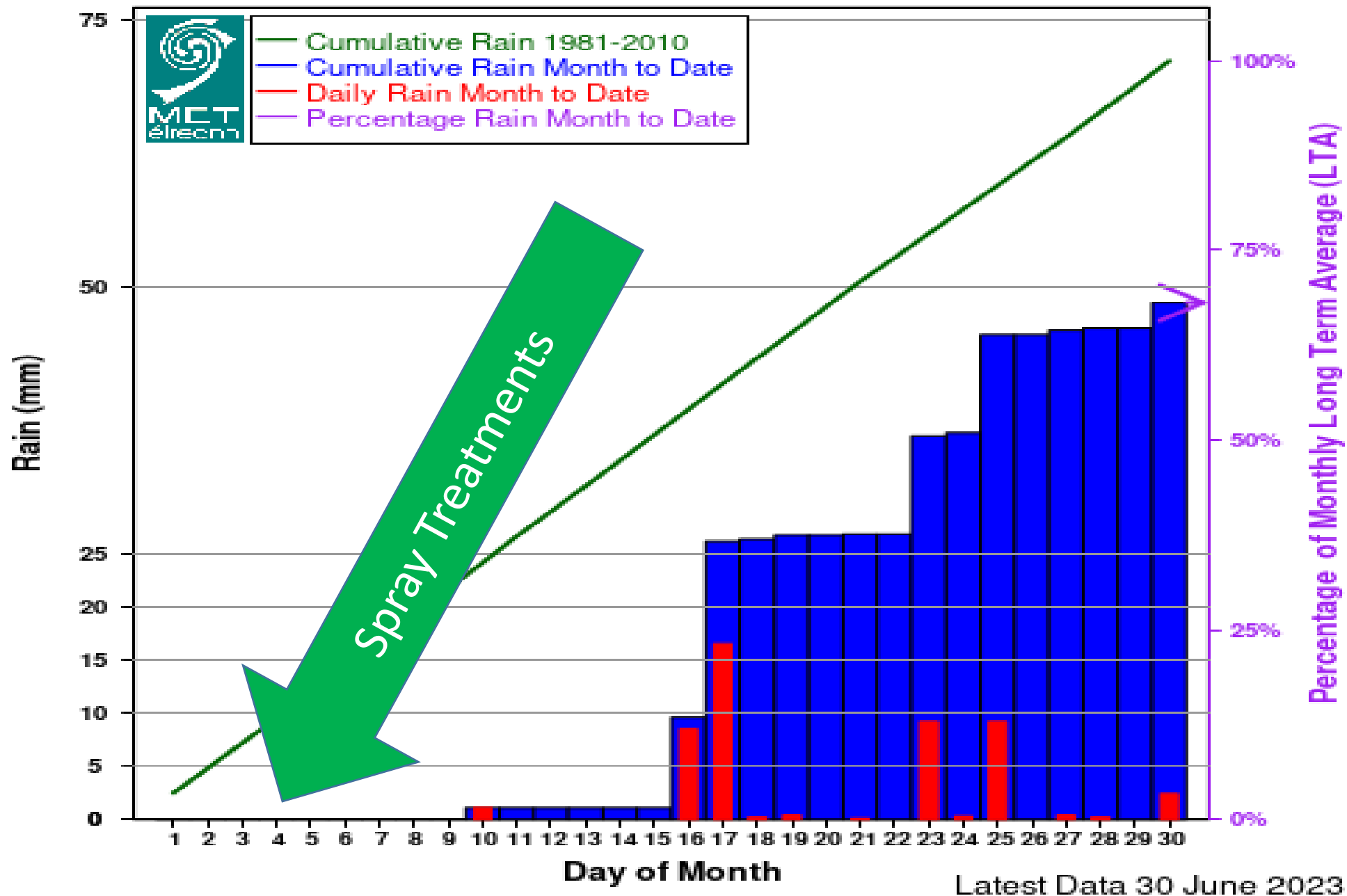
Johnstown C - Cumulative Rain April 2023



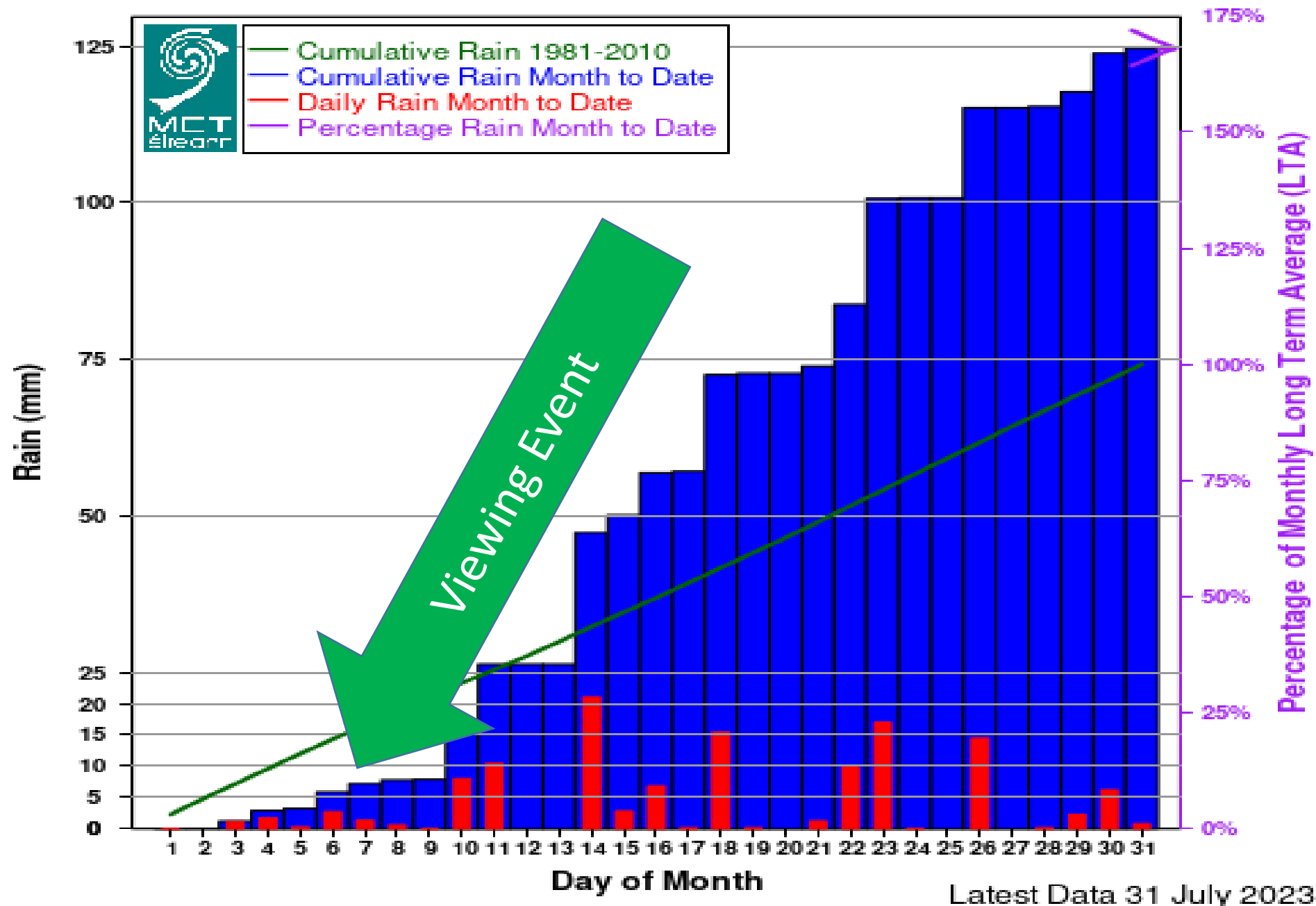
Johnstown C - Cumulative Rain May 2023



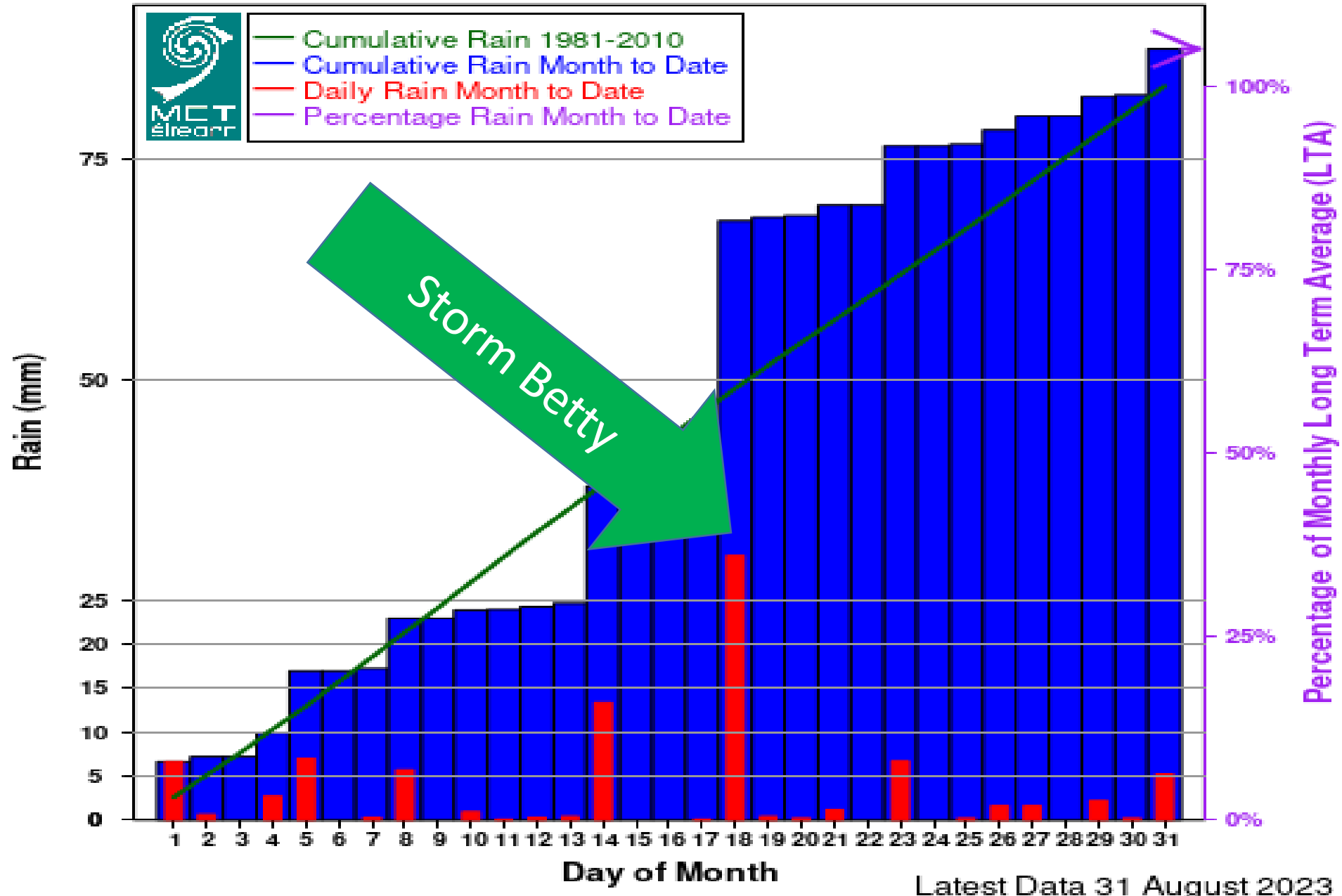
Johnstown C - Cumulative Rain June 2023



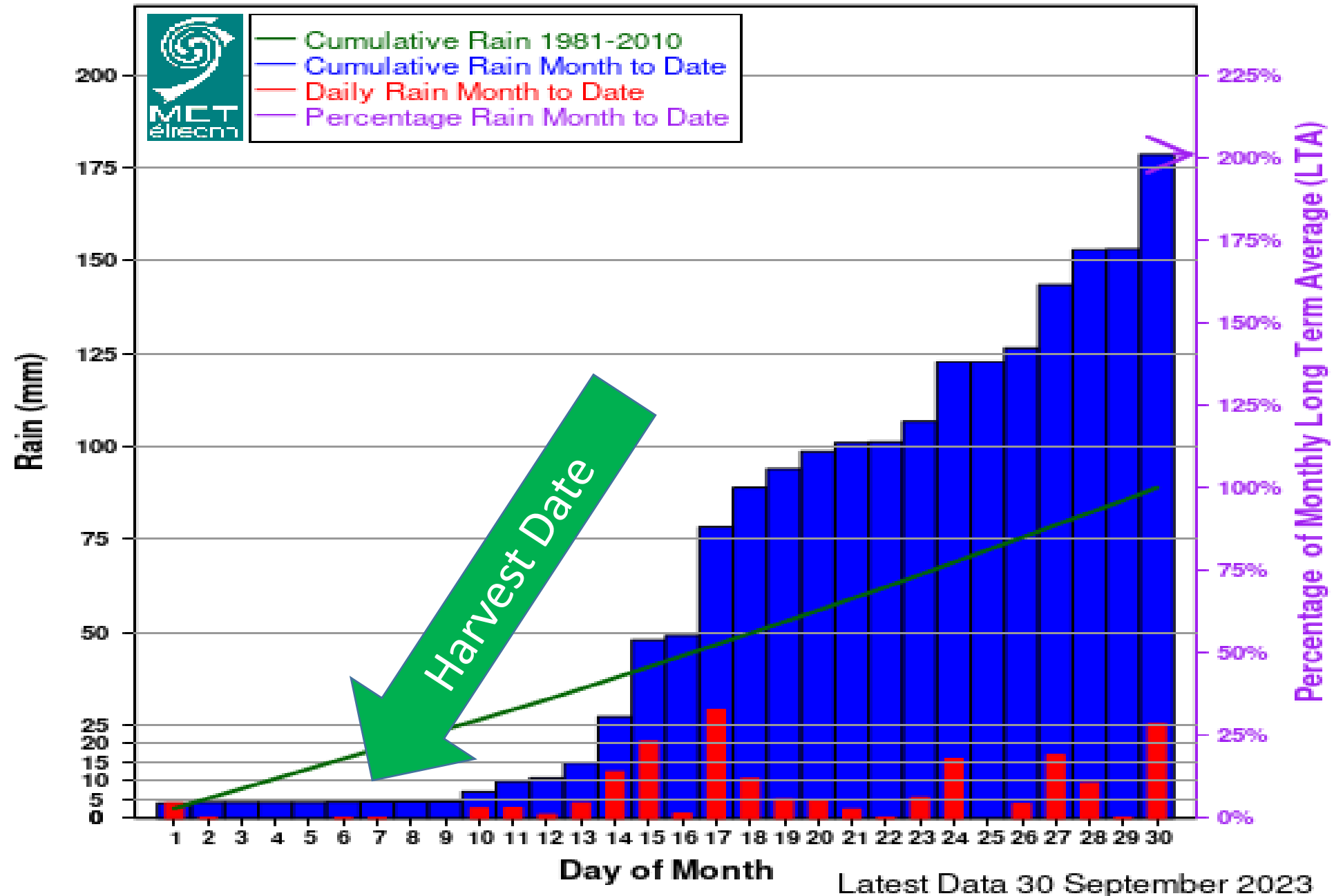
Johnstown C - Cumulative Rain July 2023



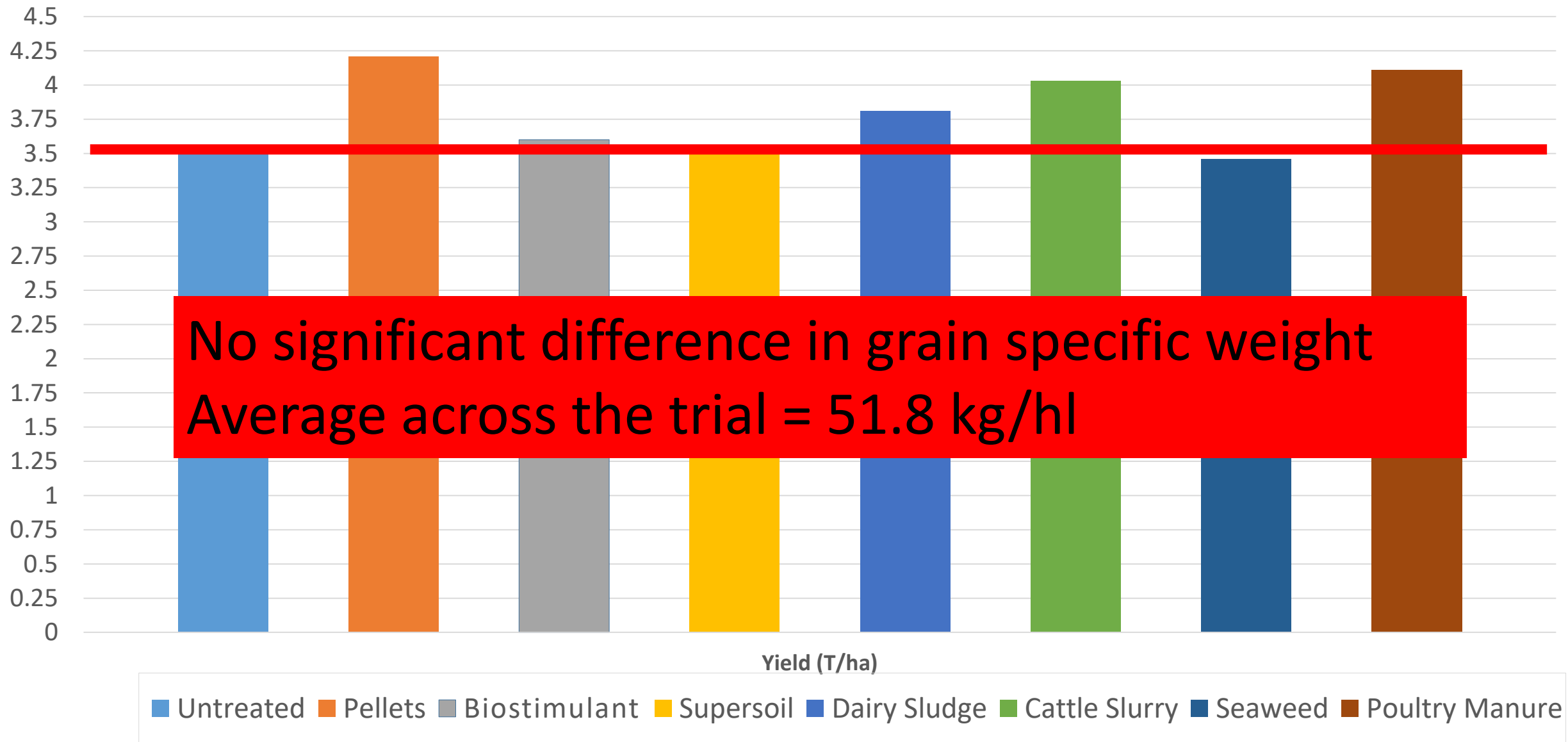
Johnstown C - Cumulative Rain August 2023



Johnstown C - Cumulative Rain September 2023



Organic Spring Oats Trial Duncannon



Warning

- One year's trial data on one site
- We need more data

Payback over cost?

Poultry Manure Pellets

(0.67t/ha extra yield @ €385/t = €258/ha extra output)

But how much did they cost?

€210 per tonne delivered

Spreading cost = €25/ha

Spreading rate = 1.235 t/ha = €259/ha

Total Cost = €284/ha

Net Gain / Loss over investment = -€26/ha



Payback over cost?

Free Range Poultry Manure

(0.57t/ha extra yield @ €385/t = €219/ha extra output)

But how much did it cost?

€25 per tonne delivered

Spreading cost = €6/tonne

Spreading rate = 4t/ha

Total Cost = €124/ha

Net Gain / Loss over investment = +€95/ha



Payback over cost?

Cattle Slurry

(0.49t/ha extra yield @ €385/t = €189/ha extra output)

But how much did it cost?

Spreading cost = €125/ha

Total Cost (slurry is free) = €125/ha

Net Gain / Loss over investment = +€64/ha



Payback over cost?

Dairy Sludge

(0.27t/ha extra yield @ €385/t = €104/ha extra output)

But how much did it cost?

Spreading cost = €0/ha

Total Cost (sludge is free) = €0/ha

Net Gain / Loss over investment = +€104/ha



Payback over cost?

Supersoil

(0 extra yield @ €385/t = €0/ha extra output)

But how much did they cost?

€300 per 1kg pack

Spraying operation cost = €25/ha

Spraying rate = 250 grams/ha = €75/ha

Total Cost = €100/ha

Net Gain / Loss over investment = -€100/ha



But what about P+K Off-takes?

- Poultry Manure Pellets (0.67t/ha extra yield)

Net Loss over investment = -€26/ha

- Supersoil (zero extra yield)

Net Loss over investment = -€100/ha

However which product maintained P+K levels?

P+K Off-takes?

- Poultry Manure Pellets (0.67t/ha extra yield)

Net Loss over investment = -€26/ha

Each 1t/ha oats removed 3.4kg P and 4.7kg/ha

Yield of 4.21 /ha removed 14kg P/ha and 20kg K/ha

1.235 t/ha of pellets supplied 18.5kg P/ha and 31kg K/ha

So a build up of 4.5kg P and 11kg K/ha

At current P and K prices = €18 P + €17 K = +€35 per ha



NOTE: If baling straw, 4.21tha removed 16kg P/ha and 61kg K/ha

At current P and K prices = +€10 P - €45 K = -€35 per ha

P+K Off-takes?

- Supersoil (zero extra yield)

Net Loss over investment = -€100/ha

Each 1t/ha oats removed 3.4kg P and 4.7kg/ha

Yield of 3.56 /ha removed 12kg P/ha and 17kg K/ha

250 grams/ha of Supersoil supplied 0kg P/ha and 0kg K/ha

So a net loss of 12kg P and 17kg K/ha

At current P and K prices = €48 P + €25 K = -€73 per ha



NOTE: If baling straw, 3.56 t/ha removed 13.5kg P/ha and 51kg K/ha

At current P and K prices = €54 P + €76 K = -€130 per ha

Net Payback (Gain or Loss)

Treatment	Extra Yield	Cost	P Gain/Loss	K Gain/Loss	Net Gain/Loss
Untreated	0	0	- €48/ha	- €25/ha	- €73/ha
PM Pellets	€258	€284	+ €18/ha	+ €17/ha	+ €9/ha
Cattle Slurry	€189	€125	+ €11/ha	+ €144/ha	+ €219/ha
Dairy Sludge	€104	0	+ €46/ha	- €15/ha	+ €135/ha
Free-Range PM	€219	€124	- €20/ha	+ €20/ha	+ €95/ha
Biostimulant	0	€55	- €48/ha	- €25/ha	- €128/ha
Seaweed	0	€30	- €48/ha	- €25/ha	- €103/ha
Supersoil	0	€100	- €48/ha	- €25/ha	- €173/ha

Assumption: Straw was chopped and incorporated