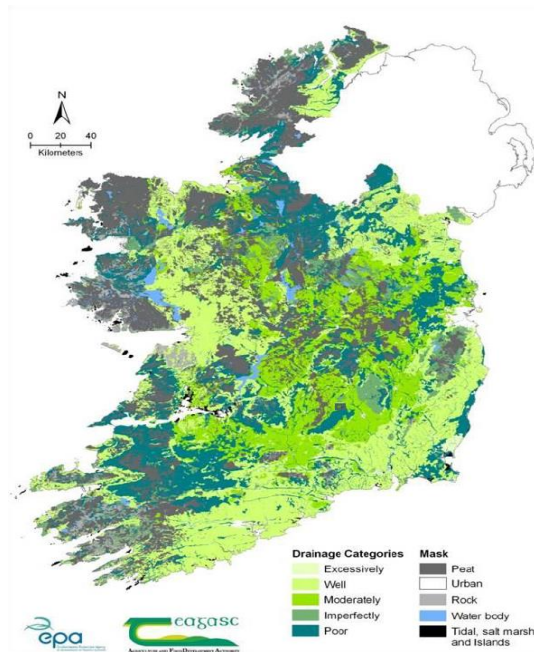
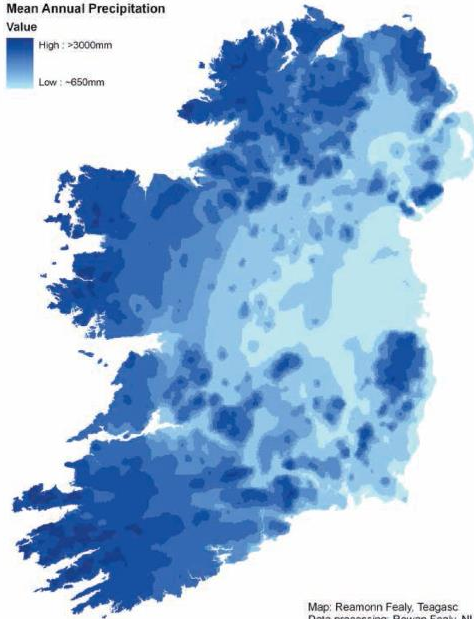


Heavy Soils Programme AGM

27th January 2021



Mean Annual Precipitation
Value
High : >3000mm
Low : ~650mm



Map: Reamonn Fealy, Teagasc
Data processing: Rowan Fealy, NUIM
Data: Met Eireann



2020 Weather

2020 Monthly Rainfall summary

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	total
Kishkeam	118.8	248.6	122.4	59.6	41.0	98.6	144.4	158.6	69.4	205.2	196.4	234.0	1697.0
Castleisland	114.2	238.5	93.2	41.4	23.1	96.0	125.0	204.0	90.0	185.2	204.0	216.4	1631.0
Ballinagree	120.0	226.0	96.4	57.2	62.0	127.8	103.8	186.4	60.6	161.6	178.6	243.4	1623.8
Athea	104.8	274.6	113.8	58.0	31.0	109.8	166.2	158.6	67.0	163.8	171.8	170.6	1590.0
Crossmolina	85.0	296.2	131.2	25.8	30.2	112.4	90.8	115.6	26.0	210.8	205.6	133.0	1462.6
Doonbeg	114.8	212.8	80.0	32.2	23.0	70.2	186.8	137.4	64.4	169.0	165.8	141.4	1397.8
Rossmore	64.0	219.8	119.4	54.4	10.8	98.2	133.4	124.2	54.2	113.8	104.6	169.8	1266.6
Lisselton	102.0	227.4	75.8	42.8	18.6	67.0	121.4	134.4	64.4	148.0	119.0	123.0	1243.8
Stradone	68.2	211.2	58.0	35.6	18.8	122.2	144.4	134.0	59.0	135.0	96.8	120.4	1203.6
Swan Cross	52.4	196.8	73.2	27.0	31.2	117.2	94.6	144.8	70.4	118.6	105.4	119.2	1150.8
Average	94.4	235.2	96.3	43.4	29.0	101.9	131.1	149.8	62.5	161.1	154.8	167.1	1426.7

2020 Totals summary

	Rainfall (mm)	Long Term Average (mm)	Difference from LTA (mm)
Kishkeam	1697.0	1621.5	75.5
Castleisland	1631.0	1297.6	333.4
Ballinagree	1623.8	1756.7	-132.9
Athea	1590.0	1320.2	269.8
Crossmolina	1462.6	1161.5	301.1
Doonbeg	1397.8	1185.1	212.7
Rossmore	1266.6	981.8	284.8
Lisselton	1243.8	1095.3	148.5
Stradone	1203.6	1093.3	110.3
Swan Cross	1150.8	1078.5	72.3
Mean	1426.7	1259.2	167.5

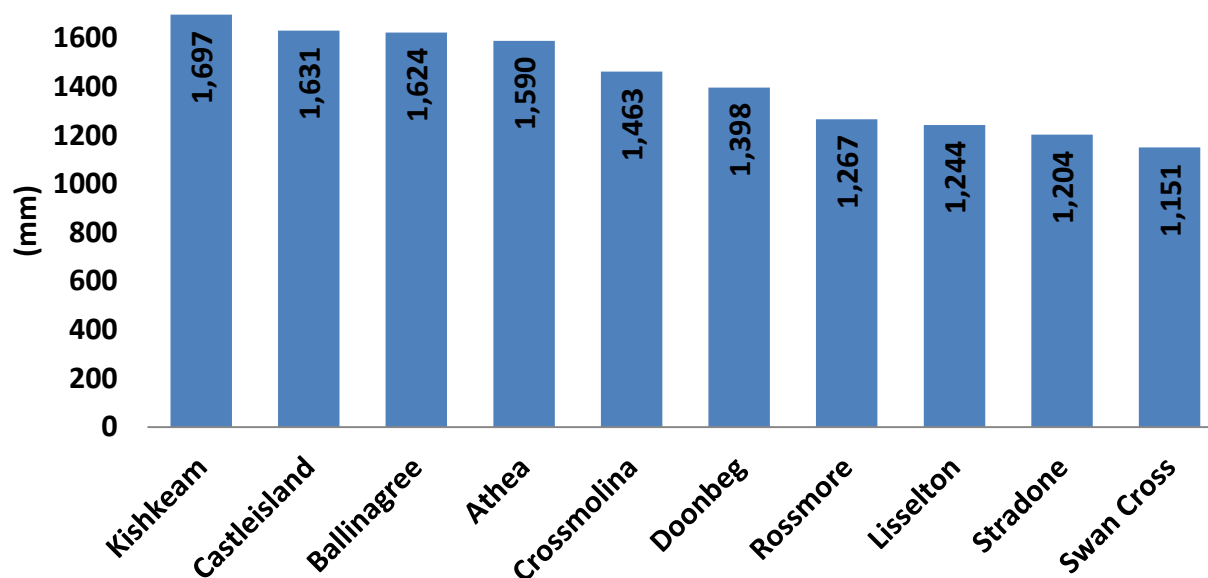
Site details

Site Details	Northing	Westing	Elevation (m) ASL
Kishkeam	52°12'	09°08'	233
Ballinagree	51°59'	08°56'	231
Athea	52°27'	09°19'	139
Castleisland	52°13'	09°28'	36
Stradone	53°57'	07°11'	180
Crossmolina	54°06'	09°17'	15
Doonbeg	52°44'	09°30'	9
Lisselton	52°28'	09°33'	8
Rossmore	52°36'	08°01'	105
Swan Cross	54°09'	07°02'	115

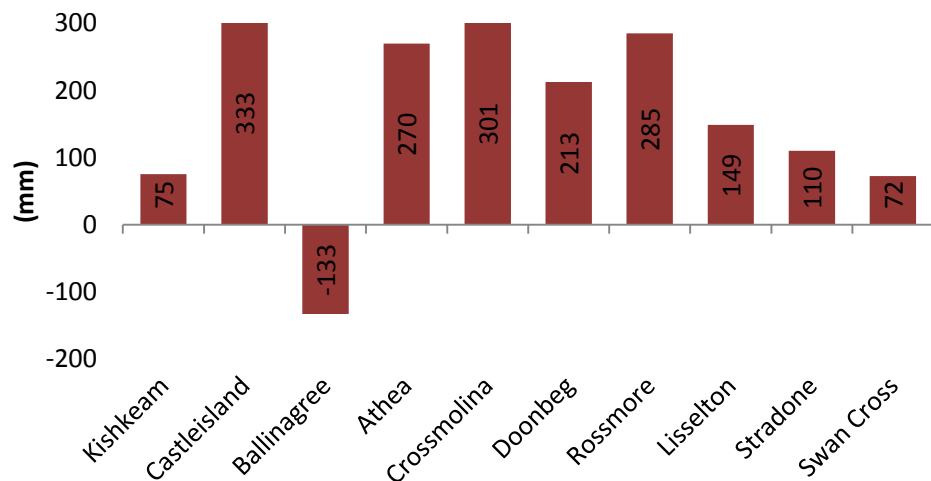
Note: ASL = above sea level

<https://www.teagasc.ie/heavy-soils/weather-data/>

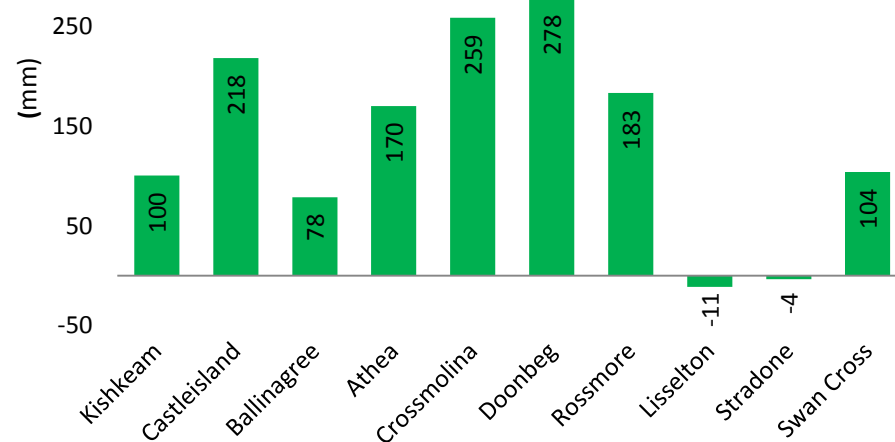
2020 Weather Summaries



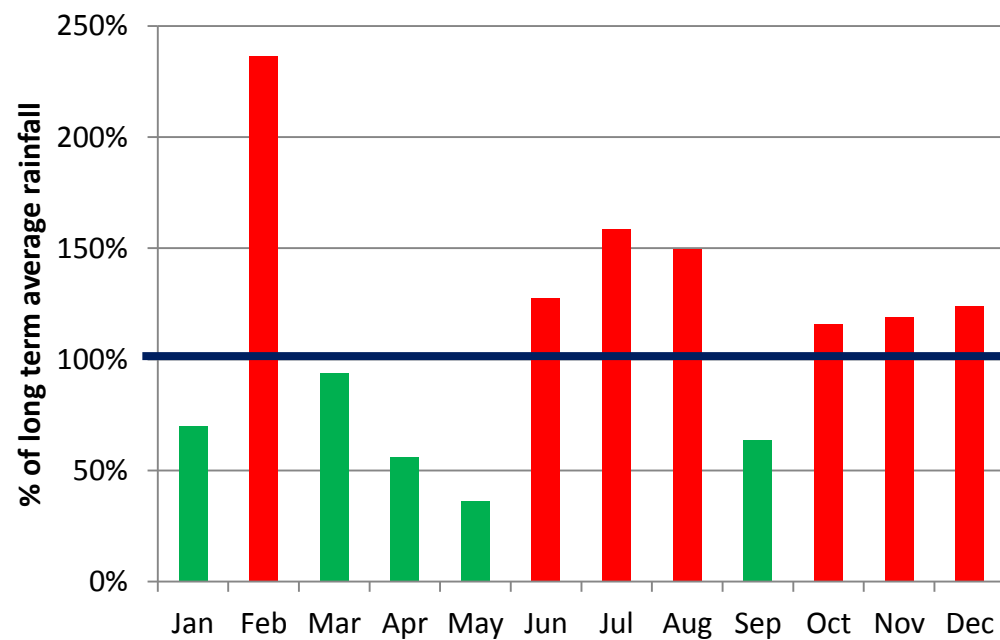
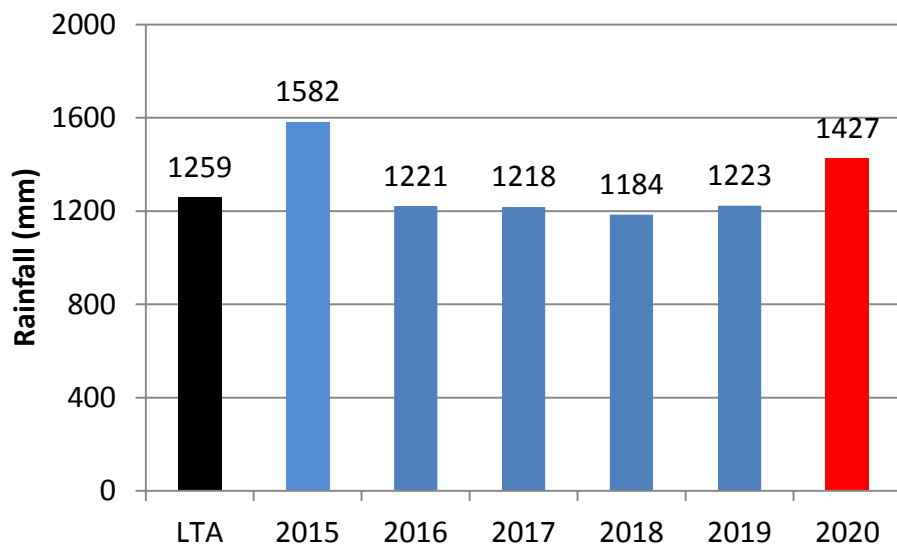
Difference from annual average



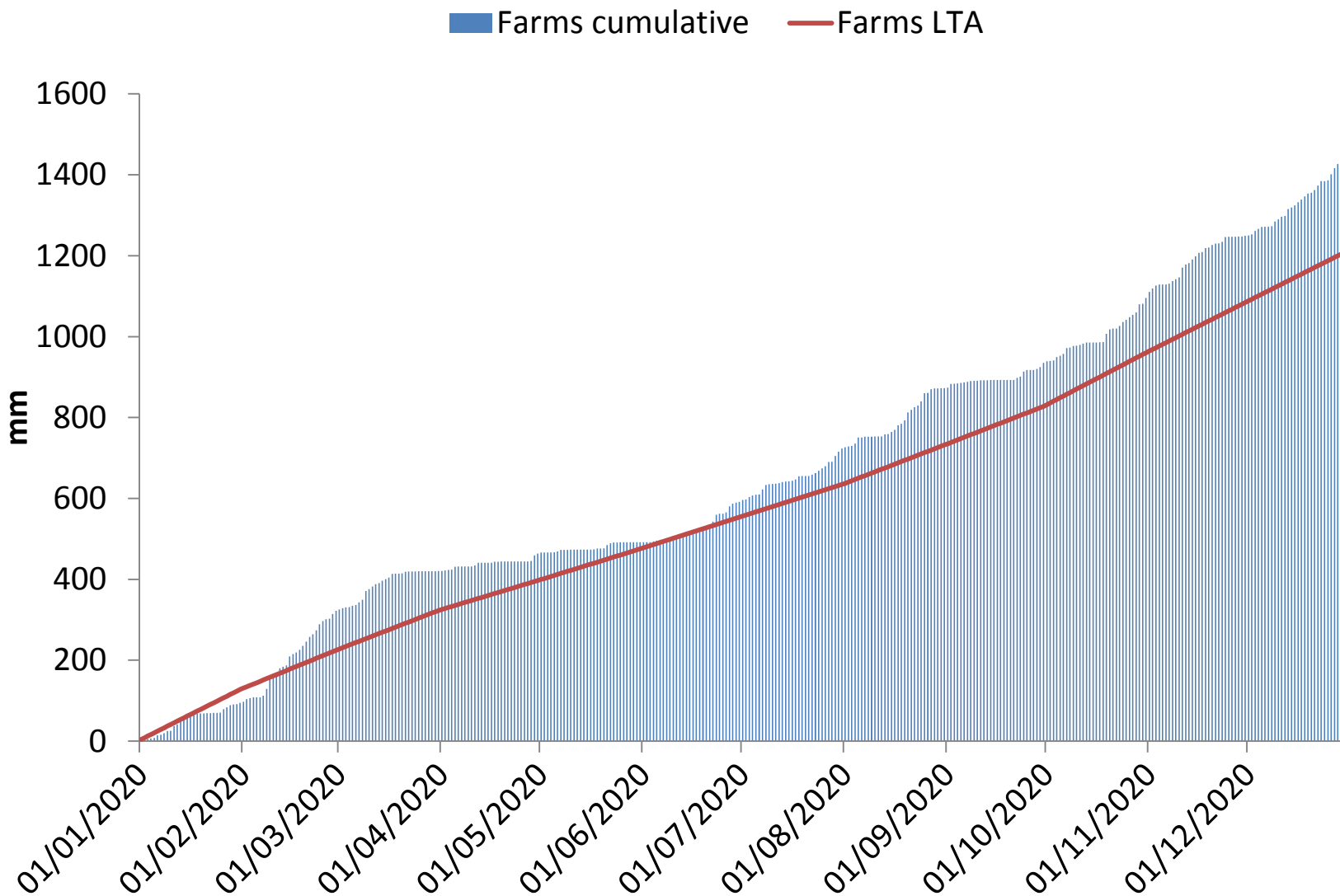
Difference from 2019



2020 Weather



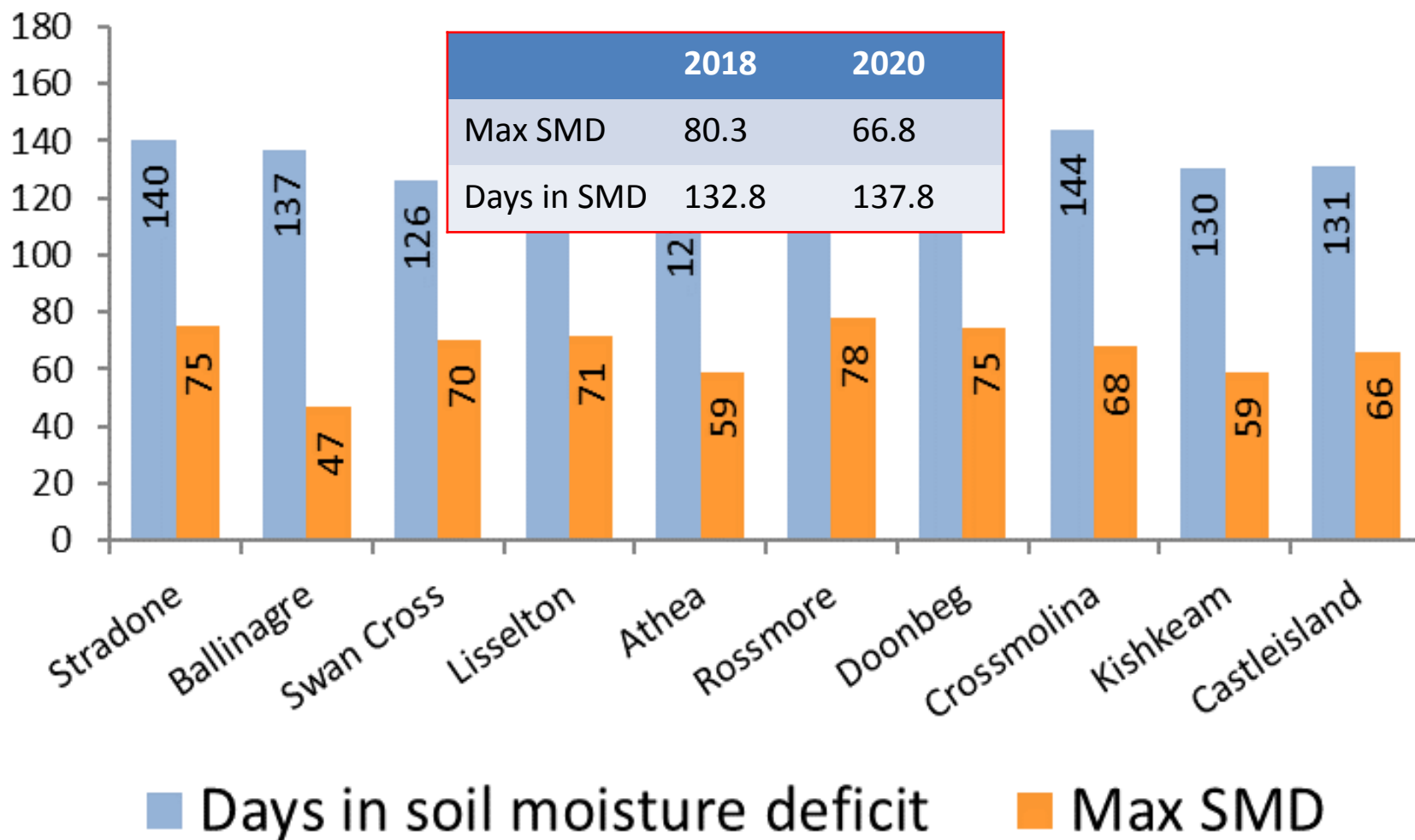
Cumulative Rainfall-Average



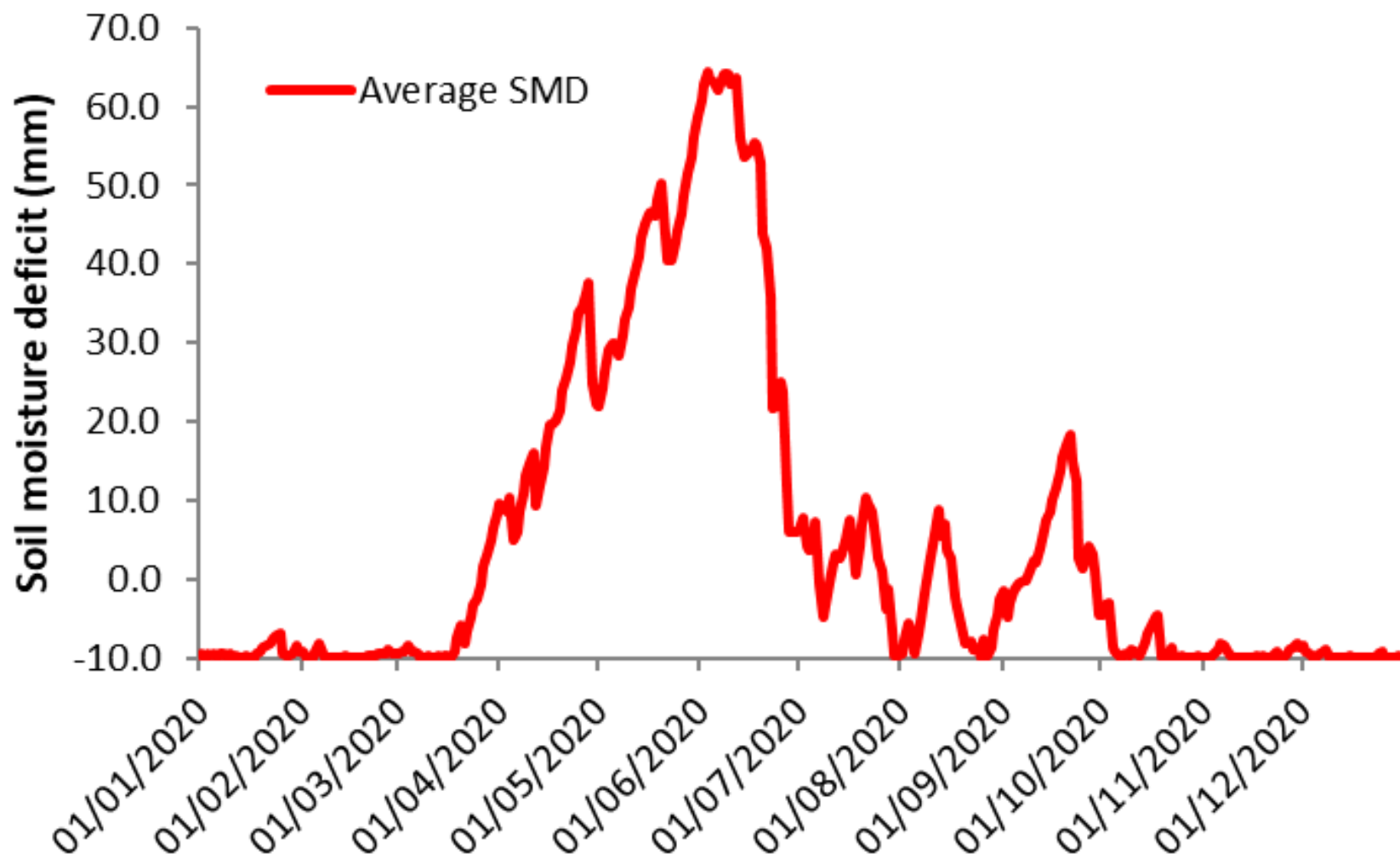
Cumulative Rainfall

	To March 17th	To June 1st	To Sept 1st	To Dec 31st
Measured Rainfall (mm)	413	79	381	563
Average Rain (mm)	279	202	252	480
Evaporation (mm)	60	145	187	102
Surplus Per day (mm/day)	4.6	-0.9	2.1	3.8

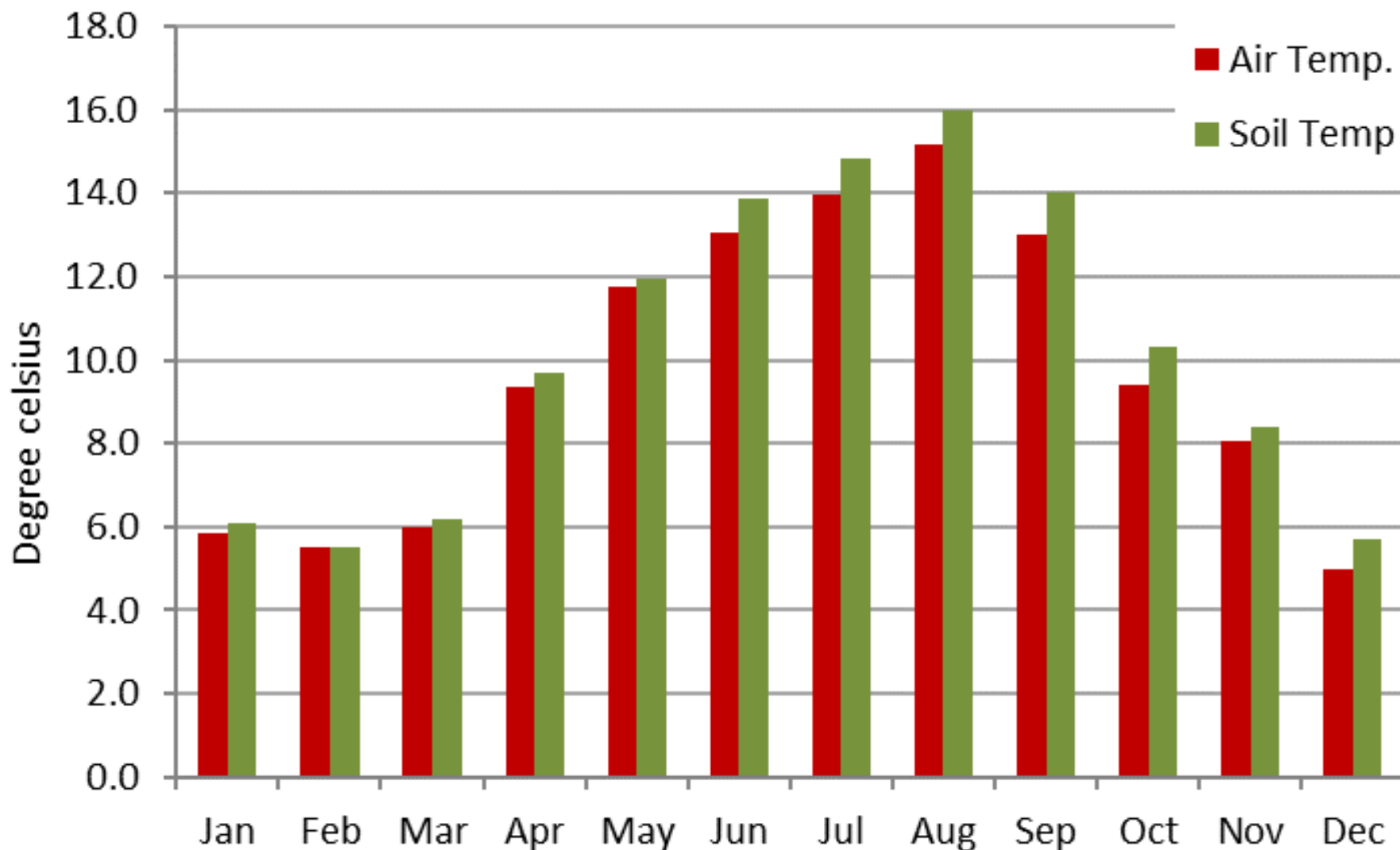
Drought Conditions



Soil Moisture Deficit



Air & Soil Temperature



Heavy Soils Programme-Phase II

New Project:

Task 1: Analyze key performance metrics related to optimization of poorly drained grasslands

Task 2: Nutrient loss pathways and loads from HSP farms

Task 3: Nutrient loss and loads from field drainage systems

Task 4: Assessment of Soil Carbon stocks in relation to soil type and drainage status

Task 5: Dissemination

2015-2020

HSP I

Drainage

Soil Fertility

Grassland
Management

2021-2024

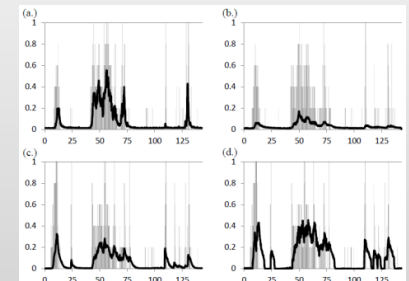
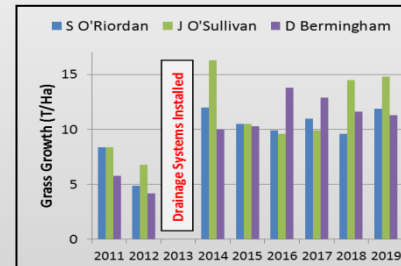
HSP II

HSP I

Water Quality

Soil
Carbon

- Funding
- New PhD Student



Location	2013	2014	2015	2016	2017	2018	2019	2020
Castleisland	5.5	5.7	5.9	6.0	6.2	6.3	6.3	6.5
Doonbeg	5.8	5.8	5.7	6.1	6.1	5.8	6.1	6.1
Athea	5.5	5.8	6.2	6.5	6.6	6.6	6.5	6.5
Kishkeam	5.8	5.8	6.2	6.4	6.3	6.2	6.4	6.3
Listowel	5.7	5.5	5.9	6.0	6.0	6.0	5.8	5.9
Rossmore	5.8	5.8	6.2	6.2	6.2	6.4	6.2	6.3
Ballinagree	5.8	5.9	6.5	6.5	6.3	6.3	6.3	6.2
Crossmolina	5.4	5.6	5.7	6.1	5.9	5.8	6.0	5.8
Swanscross	--	--	6.4	6.5	6.4	6.3	6.4	6.3
Stradone	--	--	6.2	6.5	6.6	6.7	6.5	6.5
Average	5.7	5.7	6.1	6.3	6.3	6.2	6.3	6.3
Target	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2

Soil Fertility: Phosphorus mg/l

[illegible]

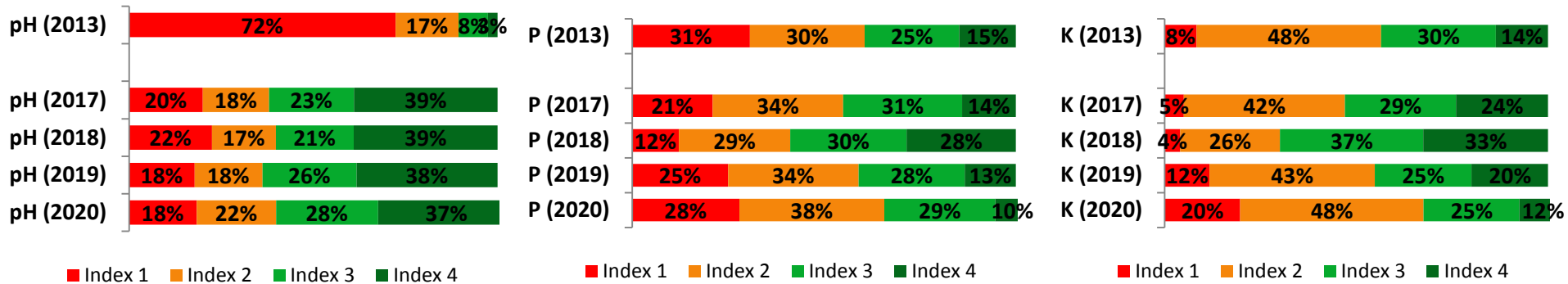
Soil Fertility: Phosphorus mg/l

[illegible]

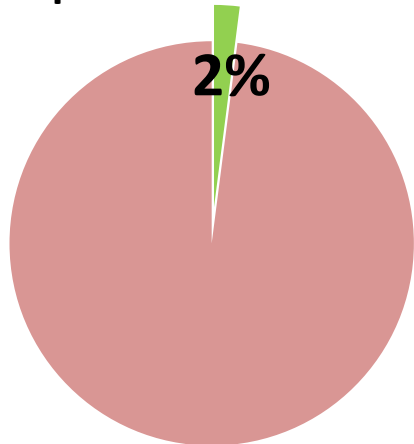
Heavy Soils

[illegible]

Soil Fertility: Progression

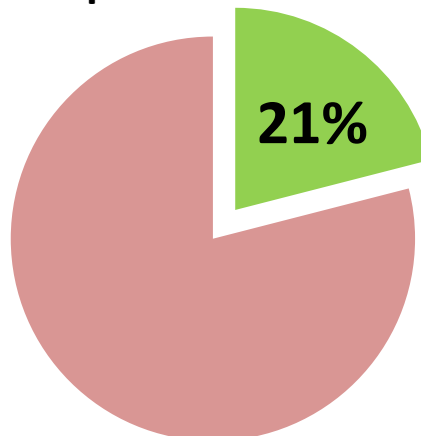


% Optimal-End of 2013



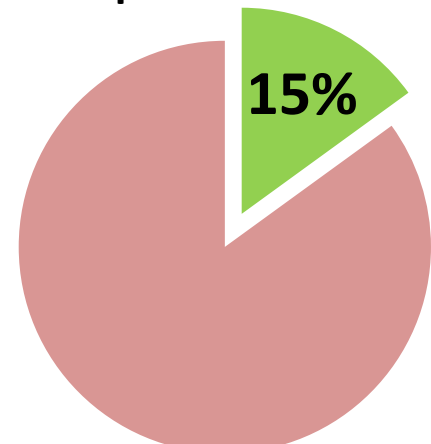
6/295

% Optimal-End of 2019



80/376

% Optimal-End of 2020

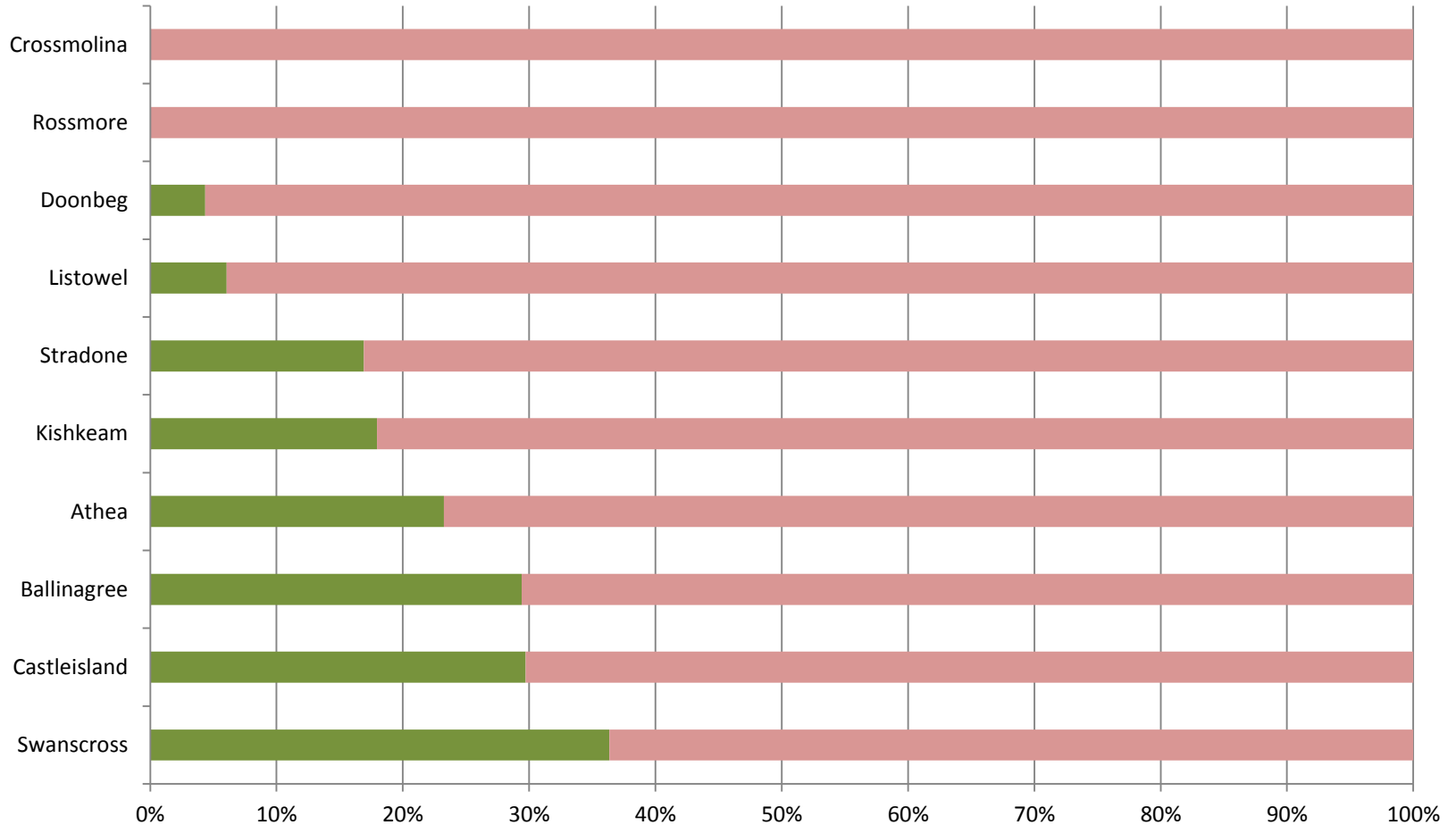


61/394

% Optimal by Farm

3% Avg.

26% Avg.



Slurry analysis-Plant Available Nutrients

		John Leahy	Sean O' Riordan	Con Lehane	Danny Bermingham	John O' Sullivan	Alan Wood	Average
DM	%	6.9	5.6	6.3	10.4	4.2	6.4	6.6
N	units/ 1000 gallons	8.6	7.4	8.2	10.9	2.8	9.8	8.0
P	units/ 1000 gallons	2.5	2.0	2.4	6.0	1.2	5.6	3.3
K	units/ 1000 gallons	23.6	23.2	29.0	38.4	6.3	24.3	24.1

Notes

- *Splash plate assumed- Higher N if LESS application*
- *Index 1 & 2 soils assumed – Higher P & K if Index 3*