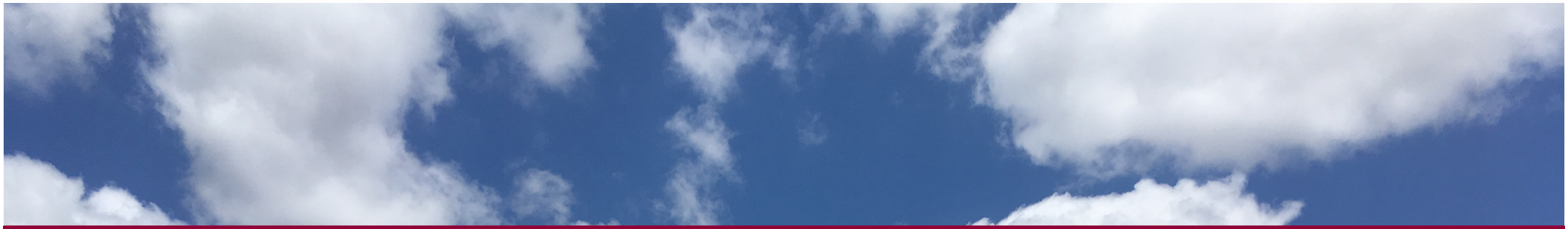

HIGHLY DISPERSIVE SODIC SOILS AND THEIR ASSOCIATED CONSTRAINTS TO YIELD

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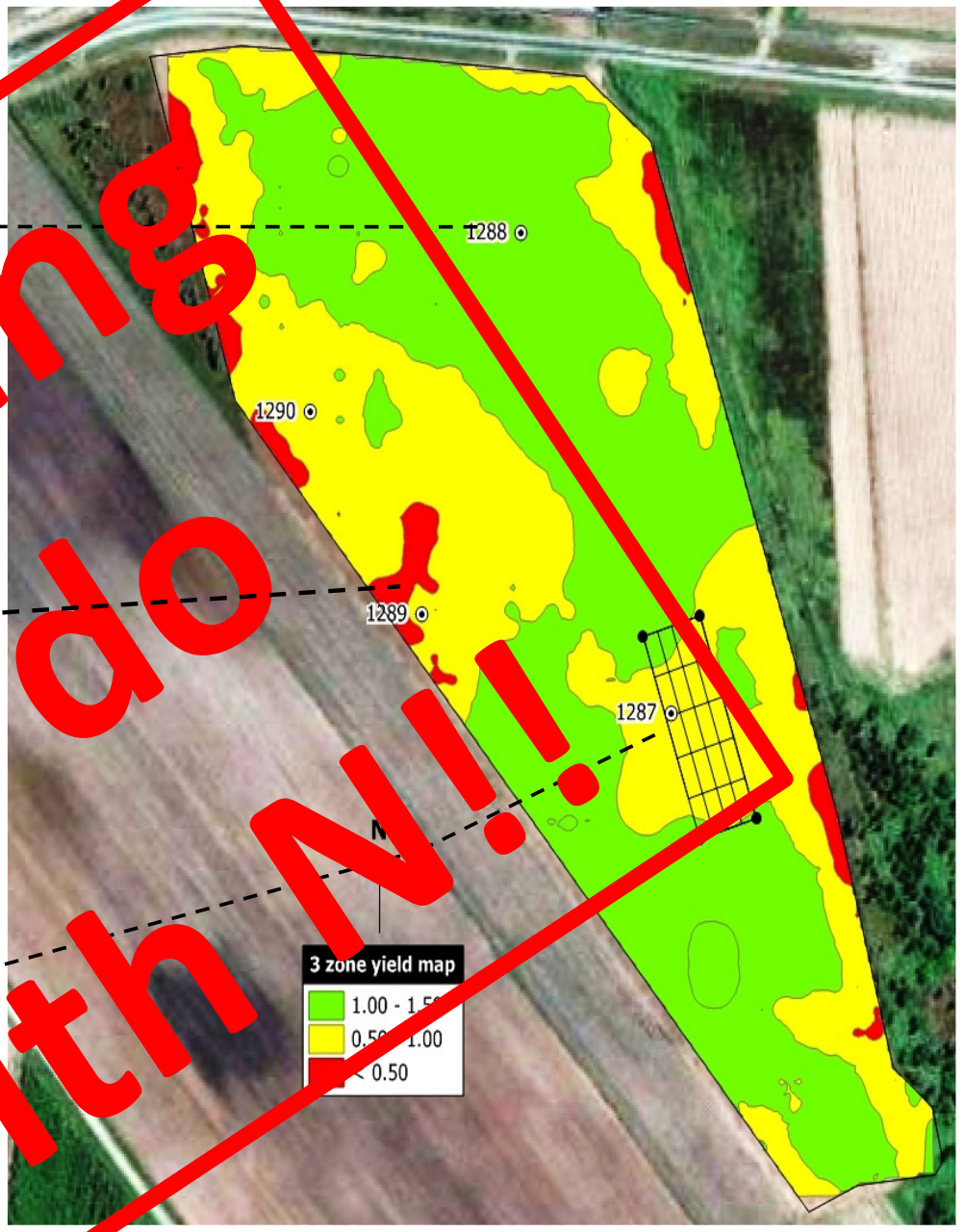
Department of Agriculture and Fisheries (DAF)

Queensland Government



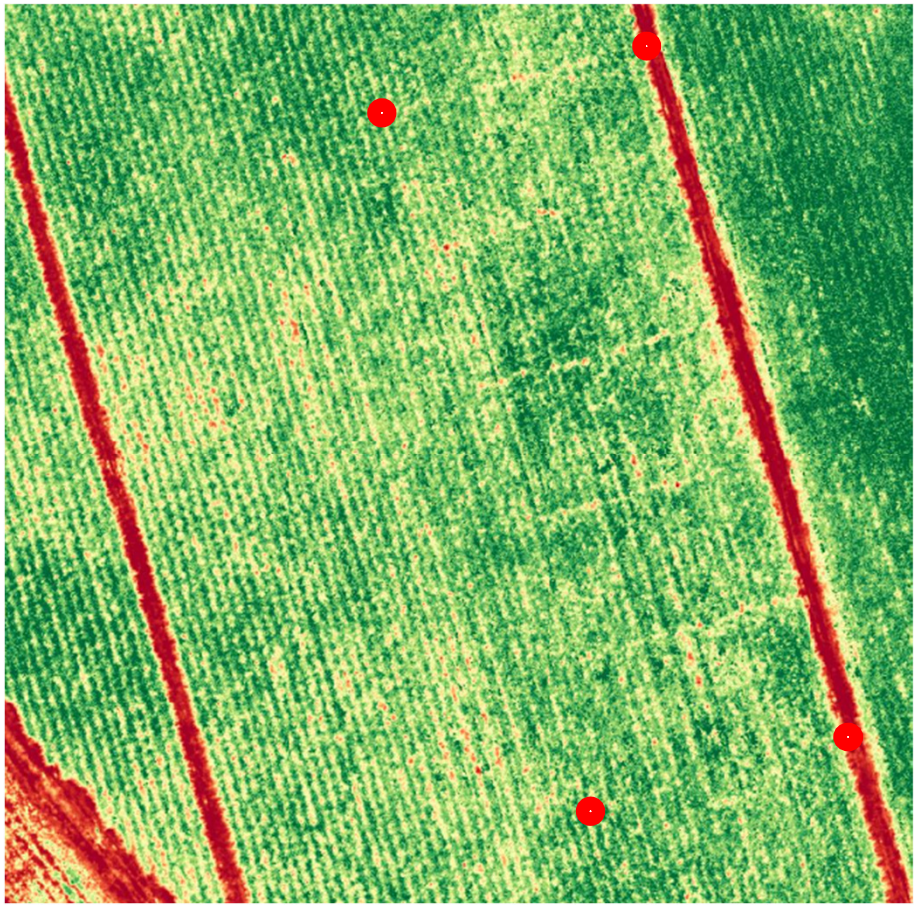
Nothing to do with N!!

A= 0-25 cm
B= 40-60cm

Soil bulk density: 1.75 g/cm3 (all profiles)

IN-SEASON DRONE IMAGERY ANALYSIS

2D Map

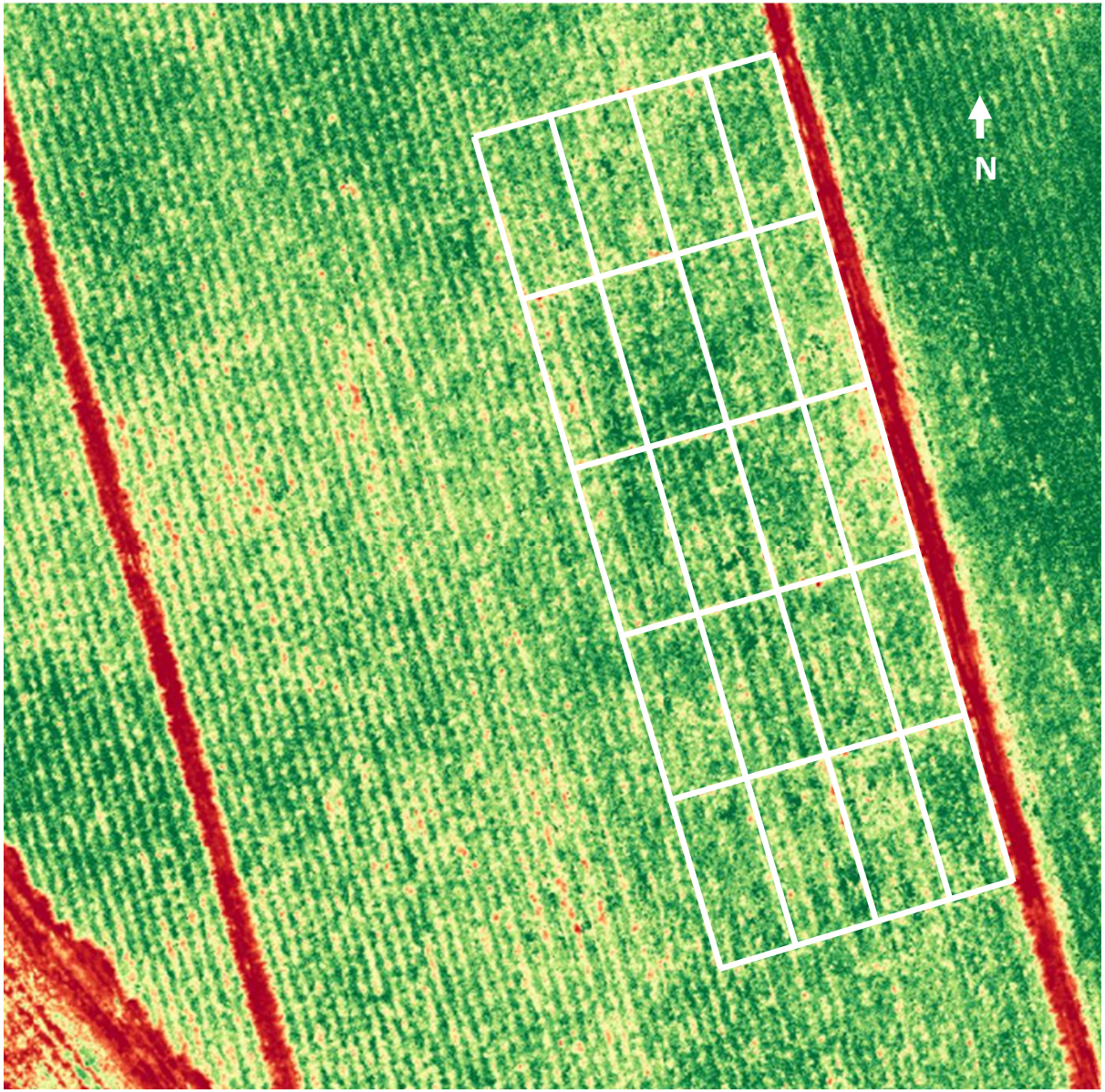


NDVI

MARCUS'S INTRODUCTION TO:

THE WORLD OF DRONES AND THEIR ROLE IN THE IDENTIFICATION AND MANAGEMENT OF INTRA-PADDOCK VARIABILITY WITH ASSOCIATED CONSTRAINTS TO PRODUCTIVITY

OVERLAID TRIAL DESIGN



Rep 1	Rep 2	Rep 3	Rep 4	
1 N20	3 N11	4 N10	1 N1	20m
4 N19	2 N12	2 N9	3 N2	20m
5 N18	1 N13	3 N8	5 N3	20m
2 N17	4 N14	5 N7	4 N4	20m
3 N16	5 N15	1 N6	2 N5	20m
8m	8m	8m	8m	

N

Plot numbers (N)

Treatments

1: lime at 3,000 kg/ha (48 kg/plot)
2: Ash at 250,000 kg/ha (4,000 kg/plot)
3: Gypsum at 5,000 kg/ha (80 kg/plot)
4: Biodunder at 8 m^3/ha (130 Lt/plot)
5: Control

Row spacing: 1.6m (5 row plot widths-8m)

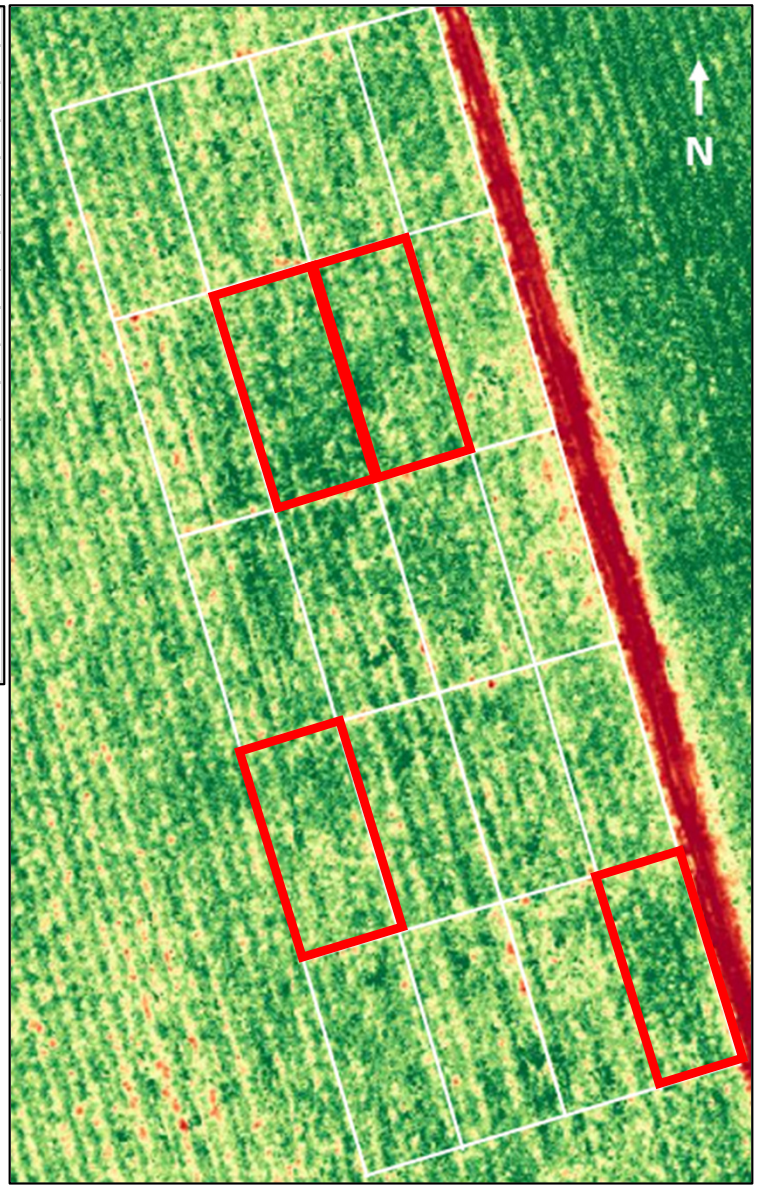
HEALTH STATUS ANALYSIS

Rep 1	Rep 2	Rep 3	Rep 4
1 N20	3 N11	4 N10	1 N1
4 N19	2 N12	2 N9	3 N2
5 N18	1 N13	3 N8	5 N3
2 N17	4 N14	5 N7	4 N4
3 N16	5 N15	1 N6	2 N5

	Rep				
Treatment	**1**	**2**	**3**	**4**	Average
Lime	4	4	4	4	4
Ash	4	5	5	5	**4.75**
Gypsum	4	4	5	4	4.25
Biodunder	4	4	4	5	4.25
Control	4	4	5	3	4

Health Status on a scale of 1 to 5, following the below parameters:

1: Dead (completely red)
2: Unhealthy/very poor (more red than green)
3: Poor health (half red, half green)
4: Good health (more green than red)
5: Healthy (completely green)



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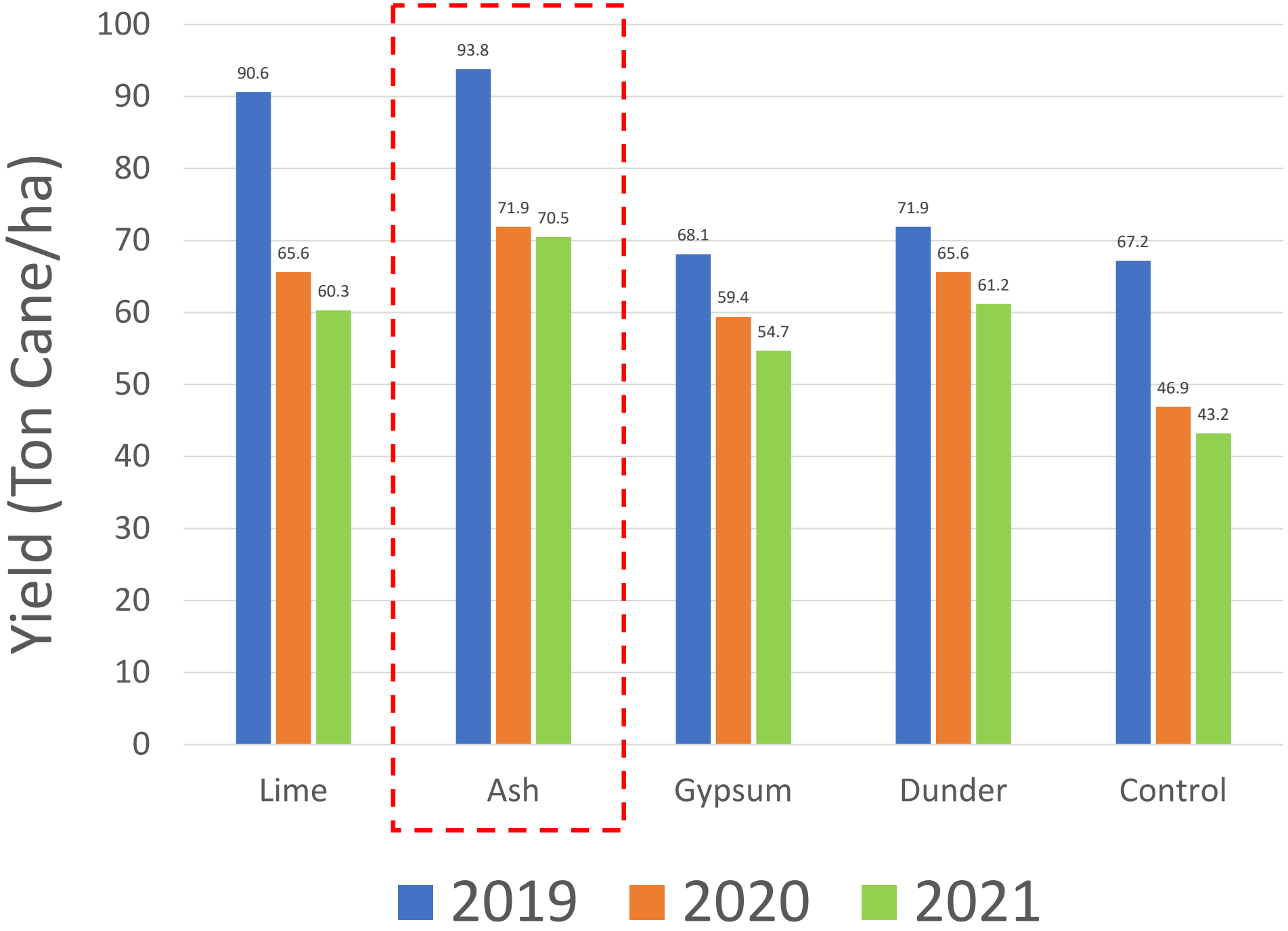
Yield (Ton Cane/ha)
100
90
80
70
60
50
40
30
20
10
0
90.6
65.6
60.3
93.8
71.9
70.5
68.1
59.4
54.7
71.9
65.6
61.2
67.2
46.9
43.2
Lime
Ash
Gypsum
Dunder
Control
2019
2020
2021

HAS ASH PROVIDED ANY OTHER BENEFITS?

- Improved soil chemical properties:
  - The most significant change on pH from 5.1 to 7.1
  - Substantially reduced sub-soil ESP
  - The most significant change on OC from 0.56 to 0.96

- Improved soil physical properties:
  - Clay % increase (and therefore, CEC)
  - soil texture and structure
  - soil permeability (thanks to its high Silicon (Si) content)