



Boron Management in Eucalyptus

Farm Rosana I – July 2022


 **Evaluate the effect of different dosages and sources of boron on eucalyptus**

 **Municipality:** Aparecida do Taboado, MS

Farm: Rosana I (field 07)

Planting date: 12/09/2019

Clones: I144 e A217

 Kauan de Castro Nascimento..... Forest Technology

João Leonardo M. Bellotte..... Forest Technology

Support team..... Forest Technology

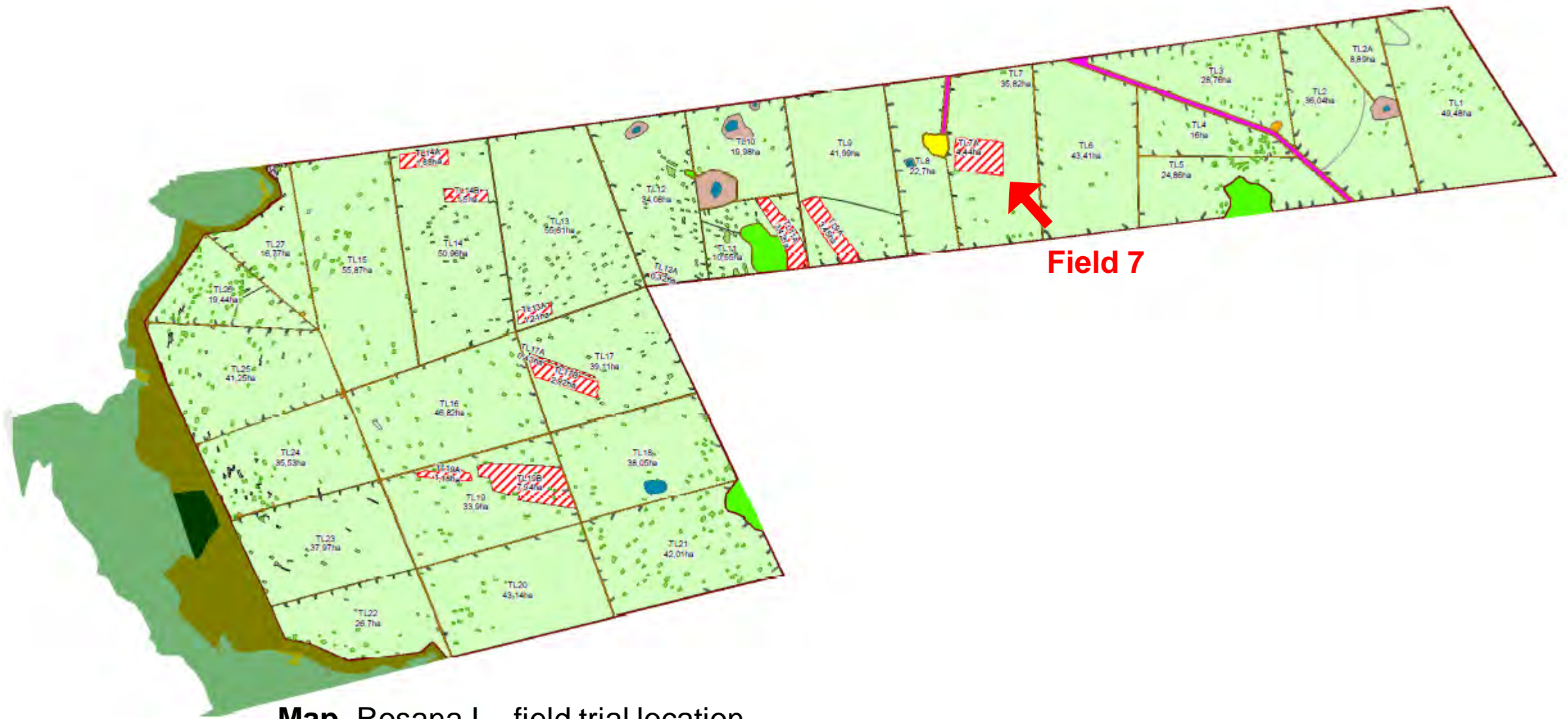
Forestry..... UGO 02

In partnership with:

U.S. Borax | Rio Tinto

Federal University of Uberlandia





Map. Rosana I – field trial location

Table 1. Treatment description

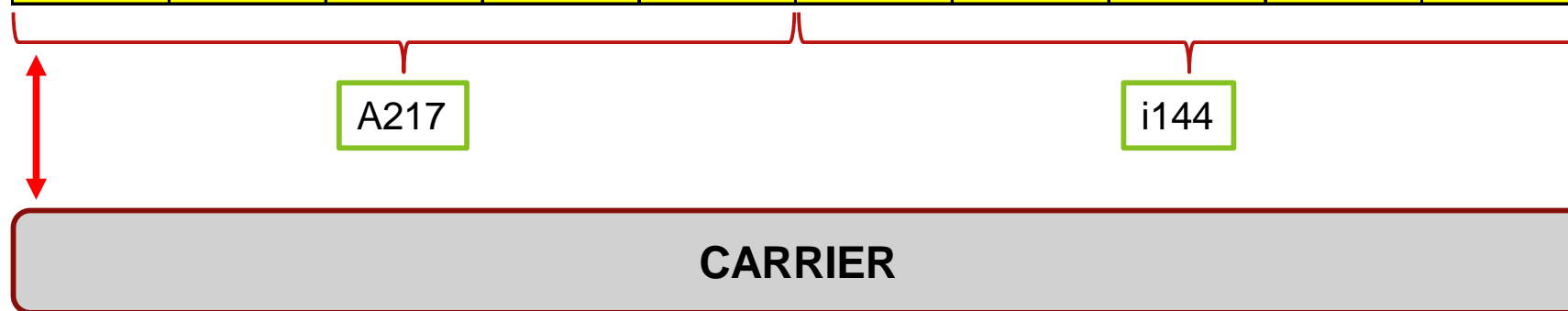
Treatment	Source	Dose B (g/ha)	Dose of product (g/ha)	g/plant
1	Ulexite (10% B)	400	4000	3.1
2	Ulexite (10% B)	600	6000	4.7
3	Ulexite (10% B)	800	8000	6.3
4	Ulexite (10% B)	1000	10000	7.8
5	Ulexite (10% B)	1200	12000	9.4
6	Granubor (15% B)	400	2667	2.1
7	Granubor (15% B)	600	4000	3.1
8	Granubor (15% B)	800	5333	4.2
9	Granubor (15% B)	1000	6667	5.2
10	Granubor (15% B)	1200	8000	6.3
11	Control	0	0	0.0

Management	Profundity	pH	P-melich	K	Ca	Mg	H+Al	S	B	Zn	Fe	Mn	Cu	MO	ATOT	SILT	CLAY
		water	mg/dm ³	mmolc/dm ³			mg/dm ³					%					
Reform	0 a 20 cm	4,8	1,3	0,4	5,0	2,0	27,0	7,0	0,3	0,1	47,0	19,5	0,3	1,50	78,6	11,1	10,3
	20 a 40 cm	4,8	0,8	0,3	4,0	1,0	27,0	7,0	0,2	0,1	49,0	13,1	0,2	1,40	75,7	8,80	15,5

Table 2. Soil analysis of the area - pre-planting

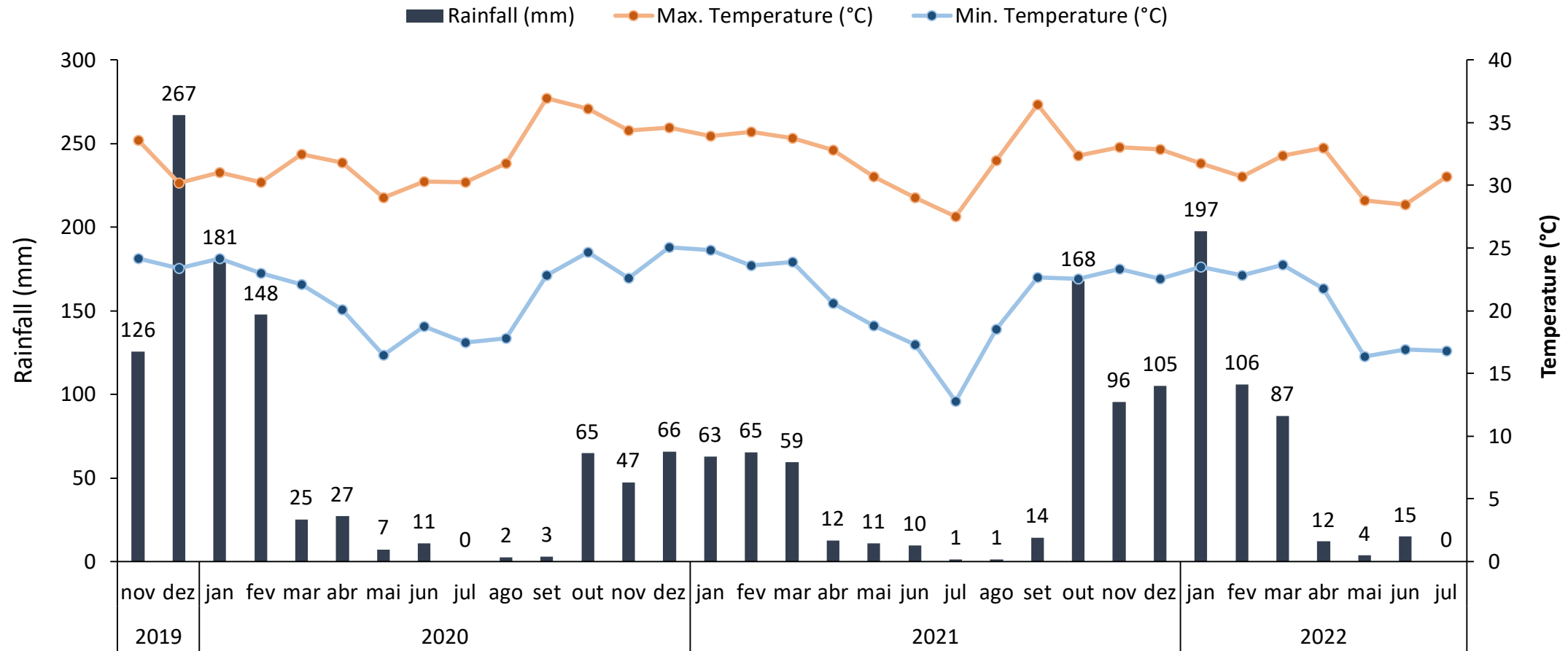
Experiment layout design

1	3	5	7	9	1	3	5	7	9
3	5	7	9	11	3	5	7	9	11
5	7	9	11	2	5	7	9	11	2
7	9	11	2	4	7	9	11	2	4
9	11	2	4	6	9	11	2	4	6
11	2	4	6	8	11	2	4	6	8
2	4	6	8	10	2	4	6	8	10
4	6	8	10	1	4	6	8	10	1
6	8	10	1	3	6	8	10	1	3
8	10	1	3	5	8	10	1	3	5
10	1	3	5	7	10	1	3	5	7
Bloco 1	Bloco 2	Bloco 3	Bloco 4	Bloco 5	Bloco 6	Bloco 7	Bloco 8	Bloco 9	Bloco 10



- Experiment installed in Randomized Blocks, with plots of 5 lines x 10 plants

Meteorological data



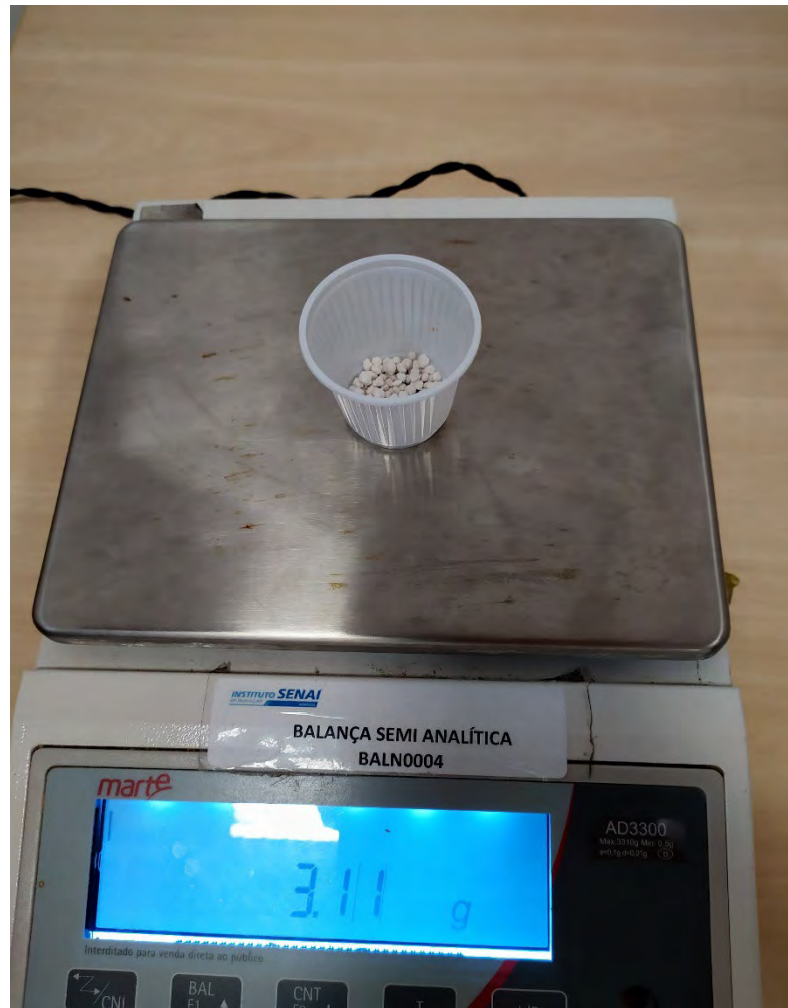
Source: Nasa Power



Manual planting



Weighing - boron doses



Individual weighing of doses



Ulexite

Granubor



Individually bagged doses/plant



Fertilizer application 10 cm from the seedling

Clone A217



1 month

Clone i144

1 month



Clone A217



3 months



3 months

Clone A217



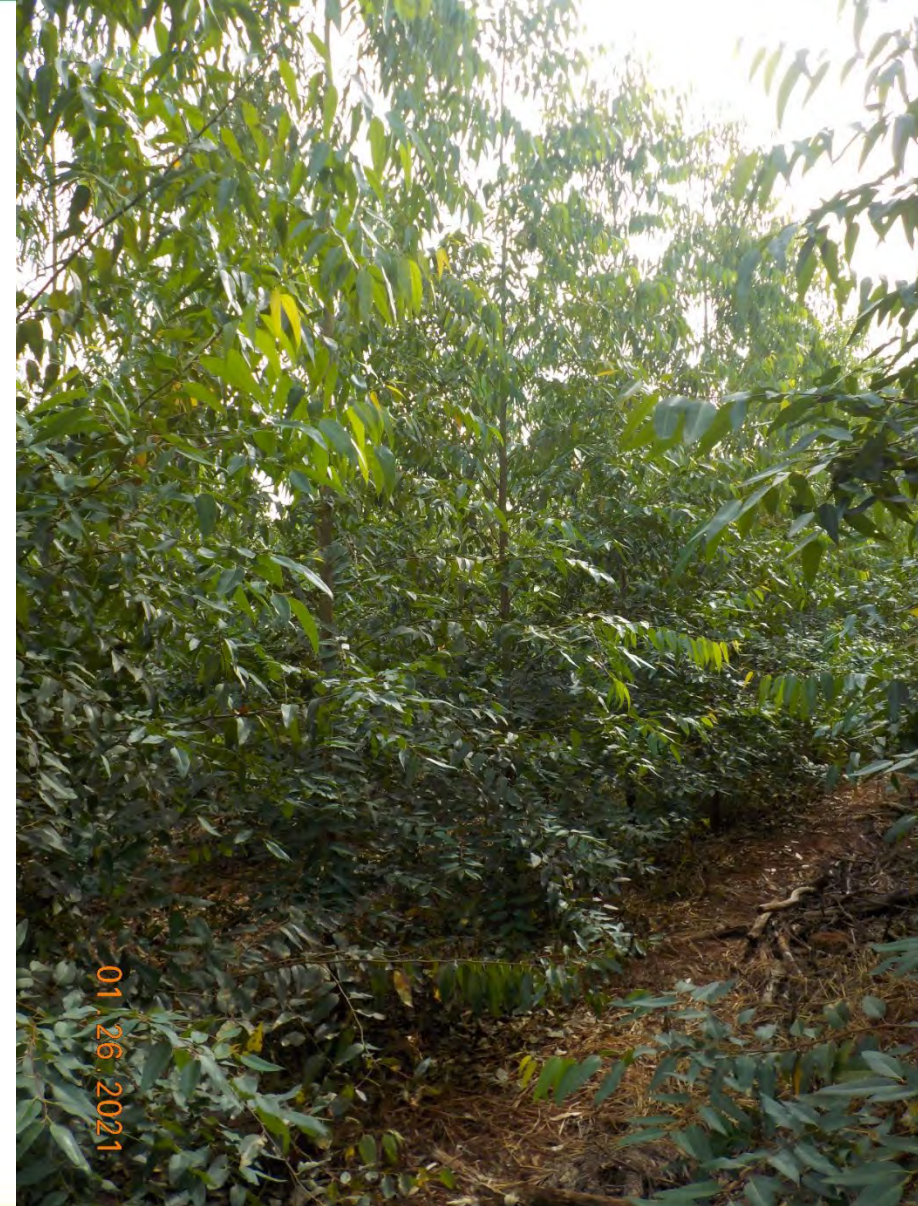
9 months

Clone i144



9 months

Clone A217



1 year

Clone i144

1 year

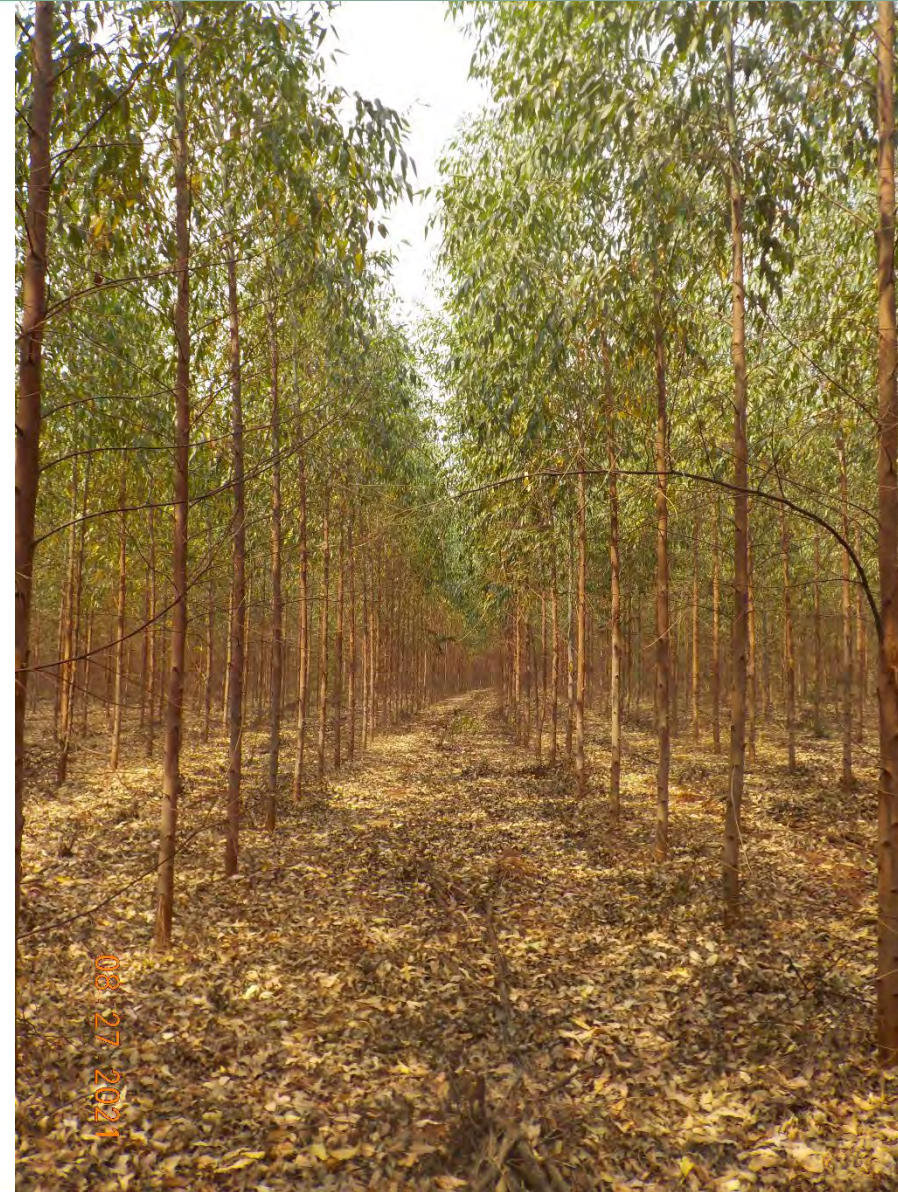


Clone A217



1.7 years

Clone i144



1.7 years

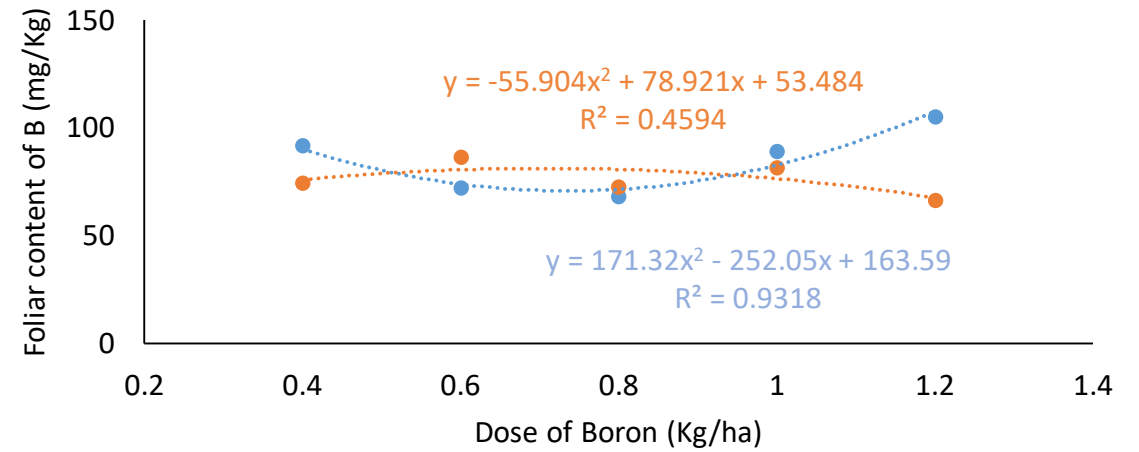
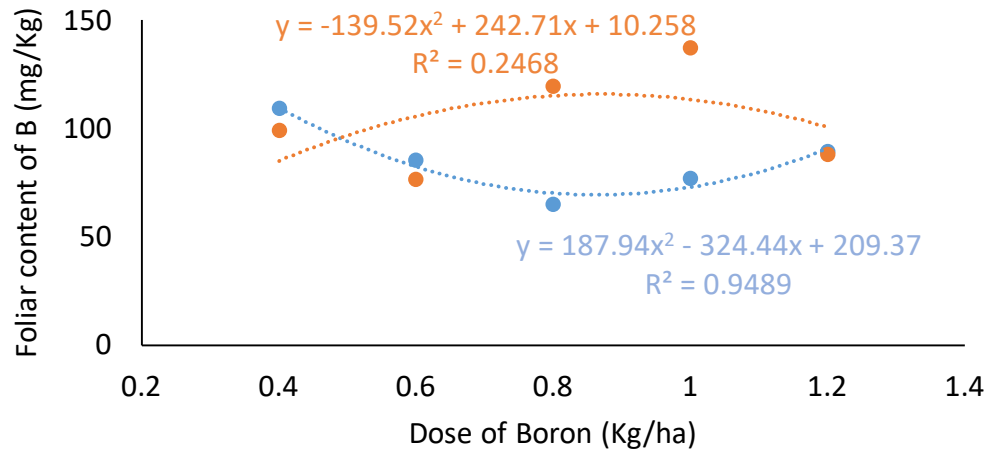
Clone - A217

● Granubor

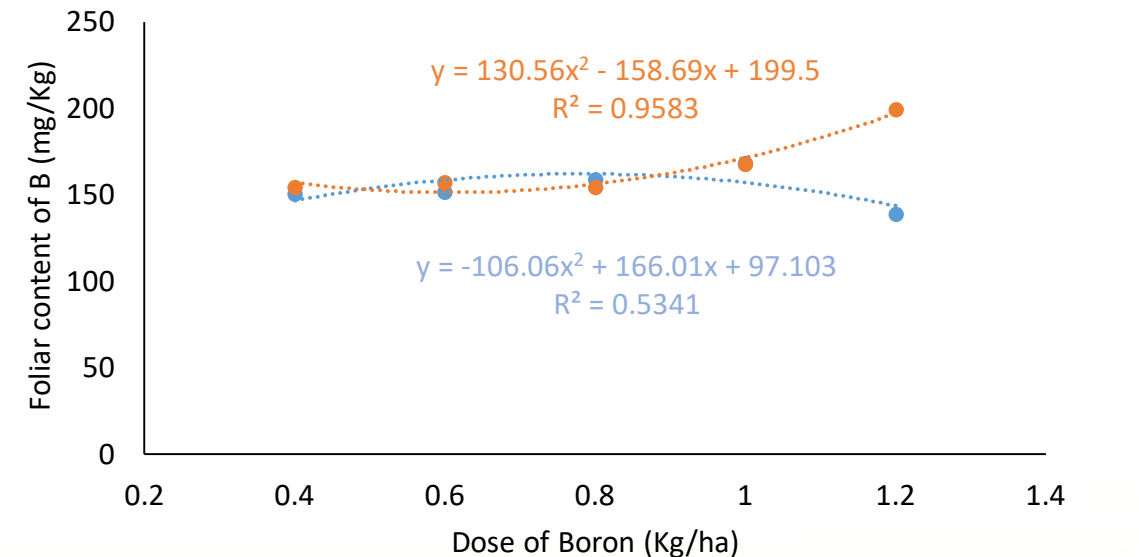
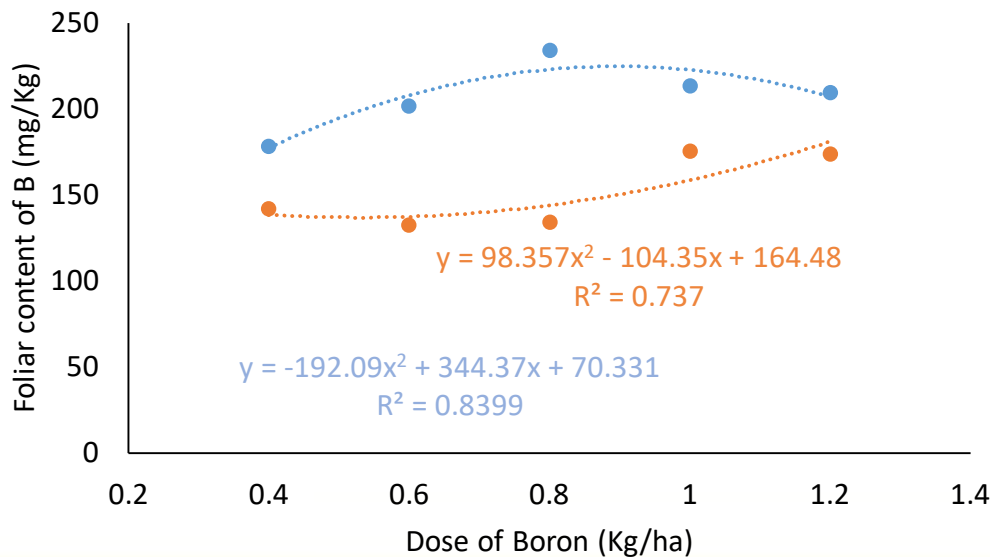
● Ulexite

Clone - i144

1 Month



2 Months



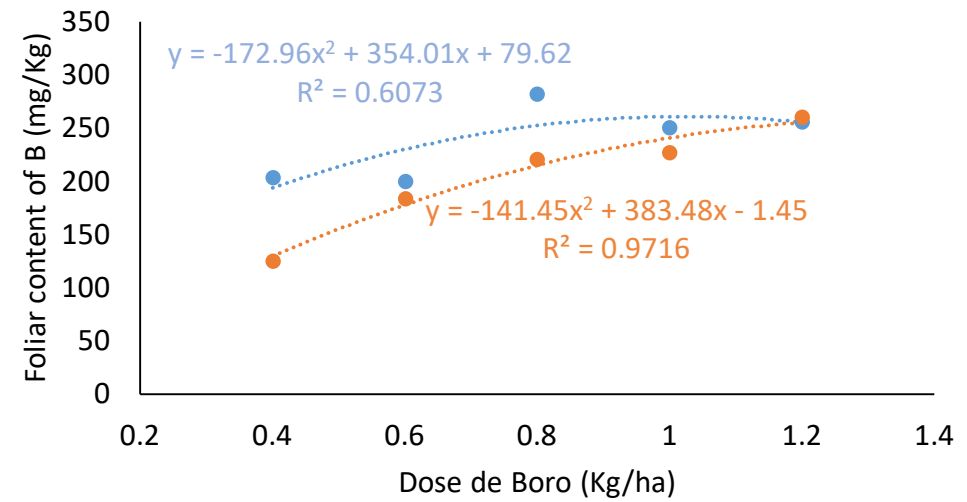
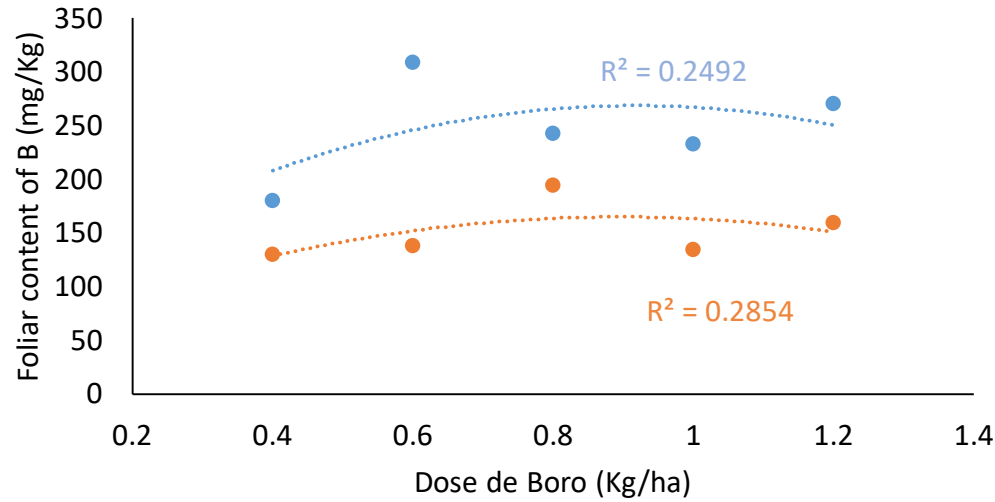
3 Months

Clone - A217

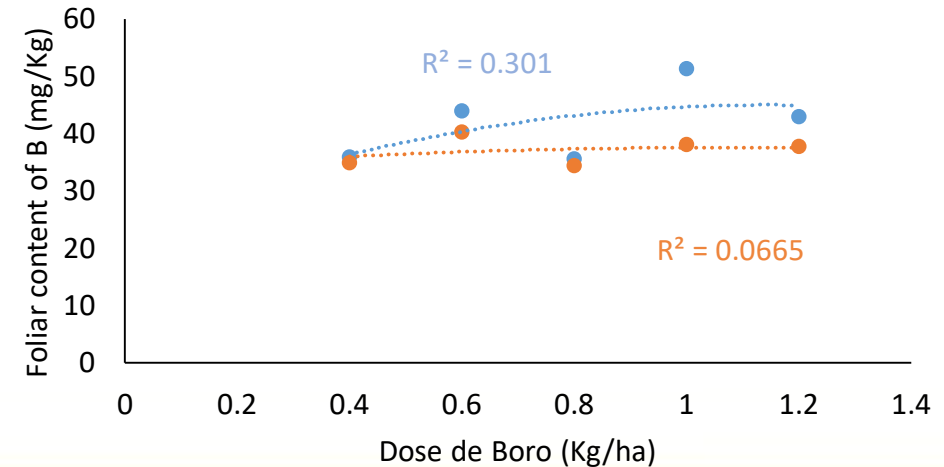
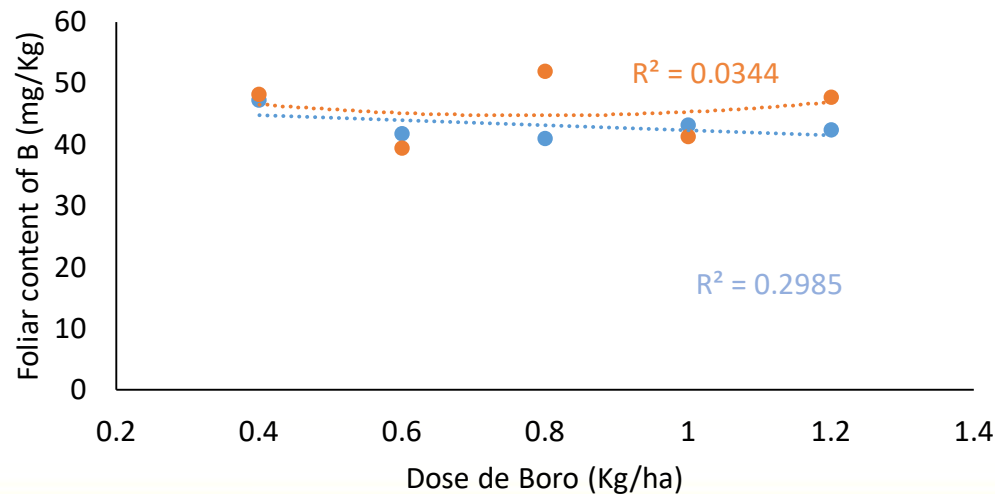
● Granubor

● Ulexite

Clone - i144

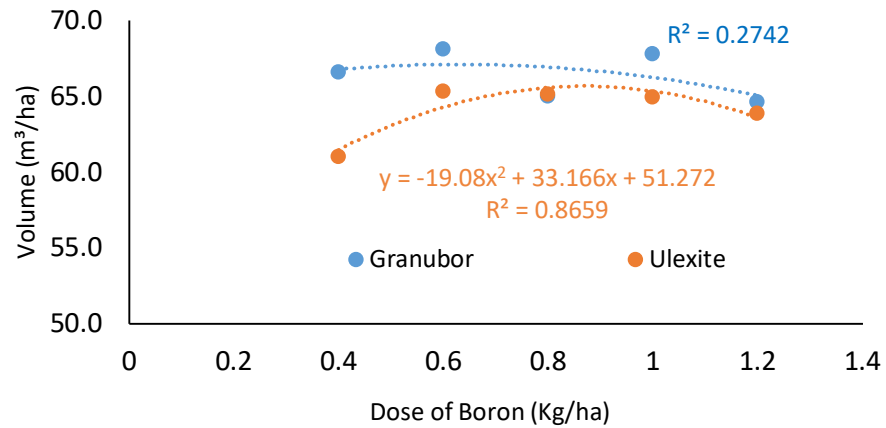


14 Months

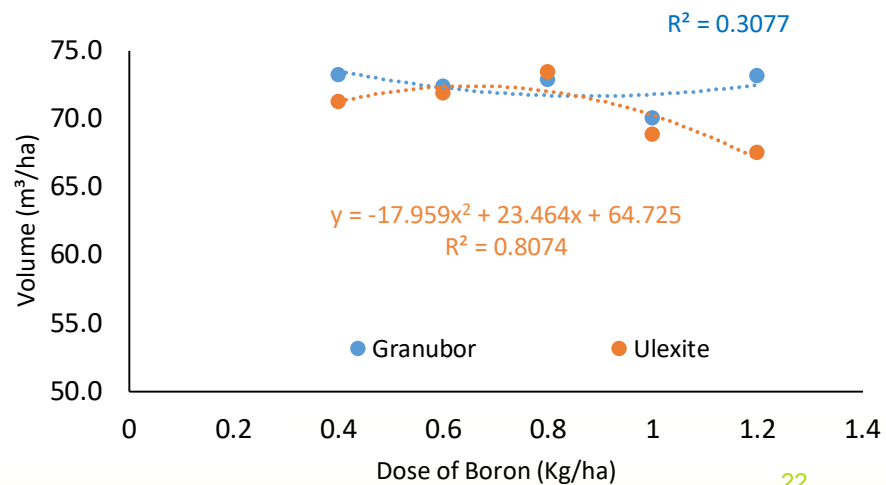


2 year inventory - Quantitative

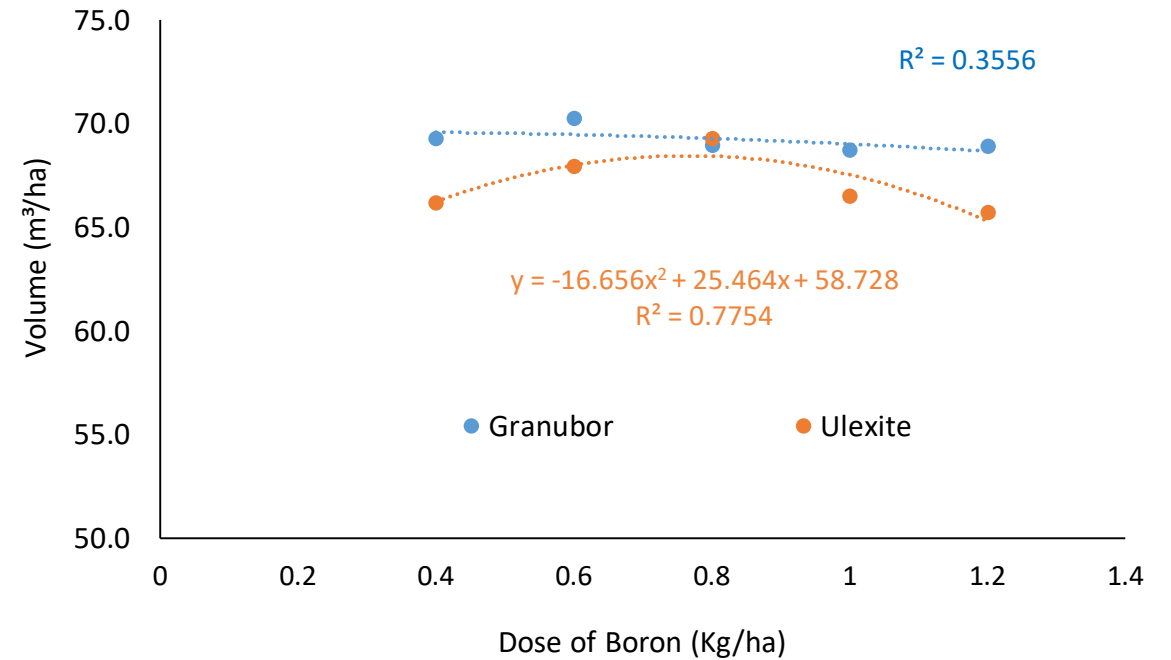
Volume per hectare – **i144**



Volume per hectare – **A217**

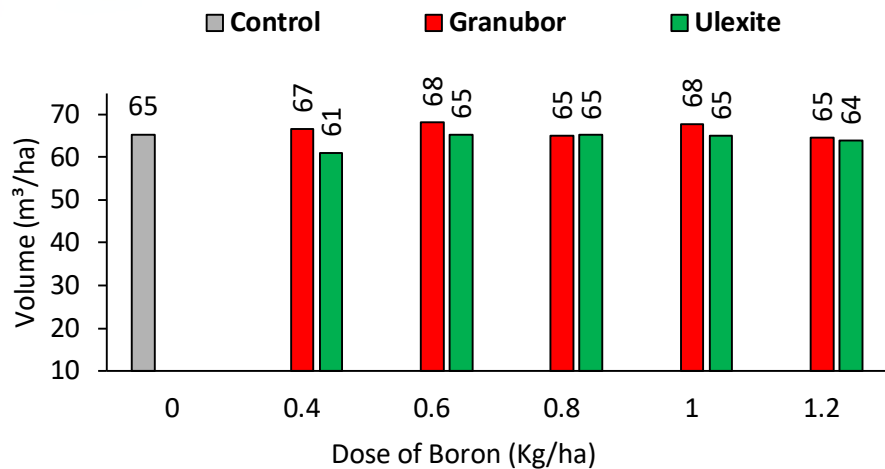


Volume per hectare – **both Clones**

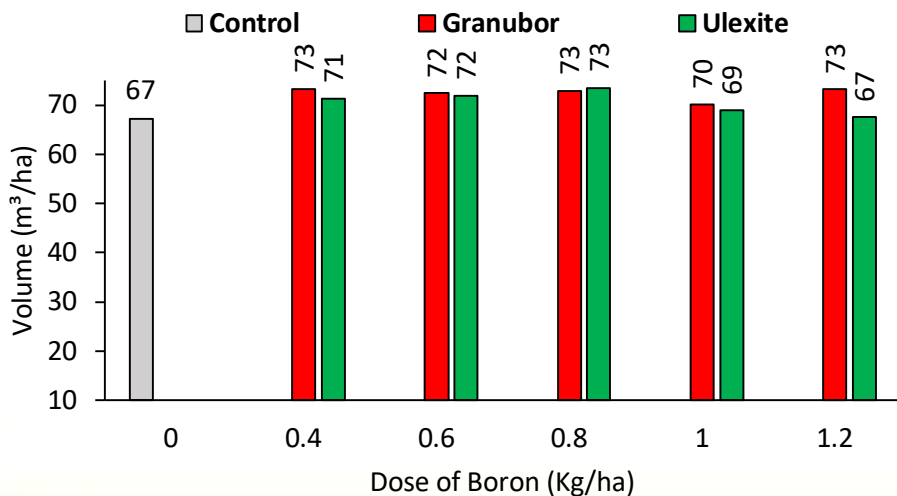


2 year inventory - Quantitative

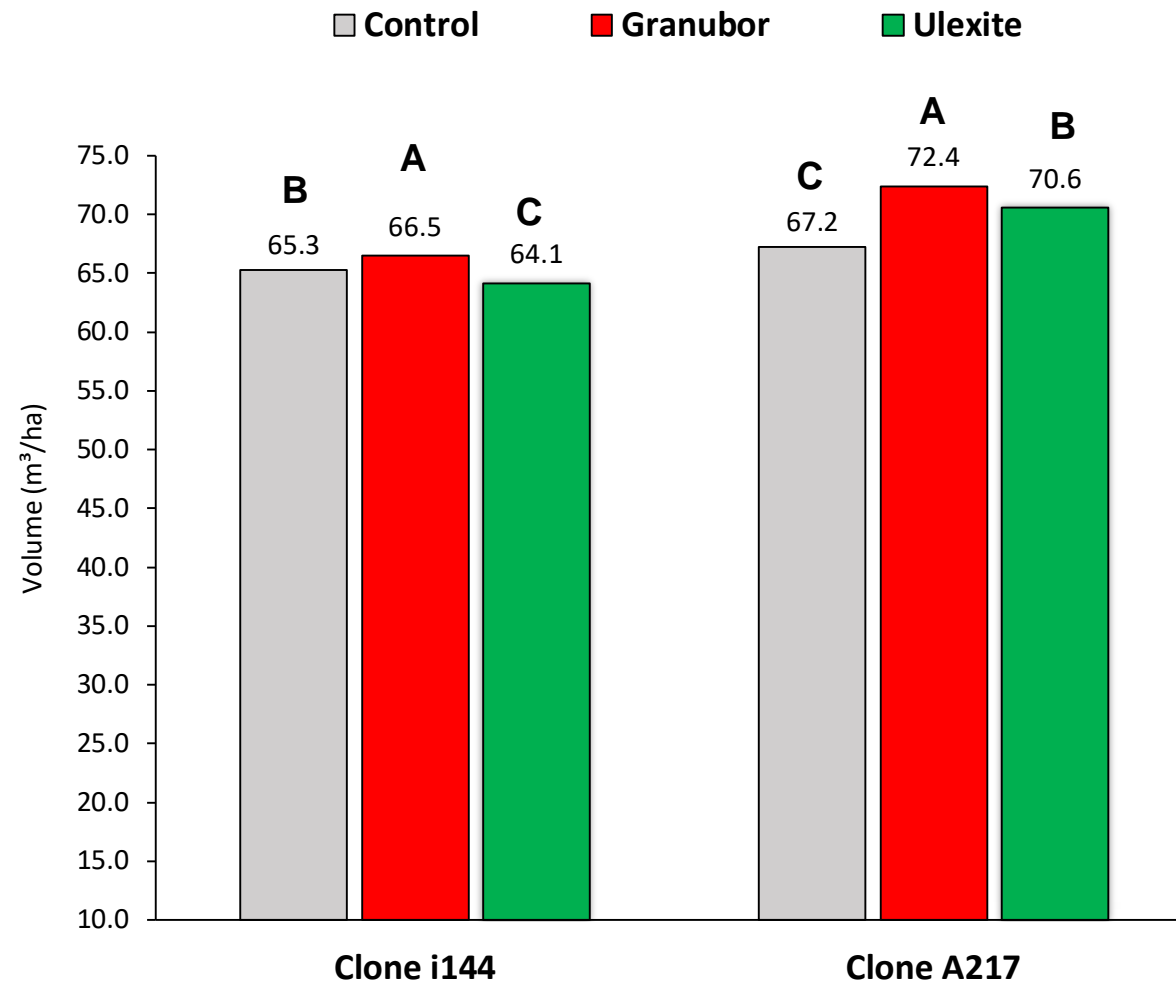
Volume (m³/ha) – Clone i144



Volume (m³/ha) – Clone A217



Volume (m³/ha) | Clone i144 and Clone A217

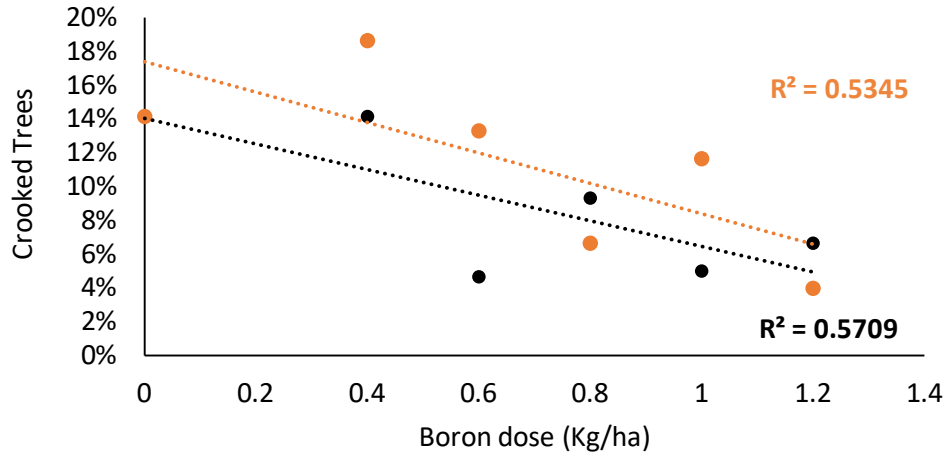


Statistical analysis: Scott Knott – 0,05 %

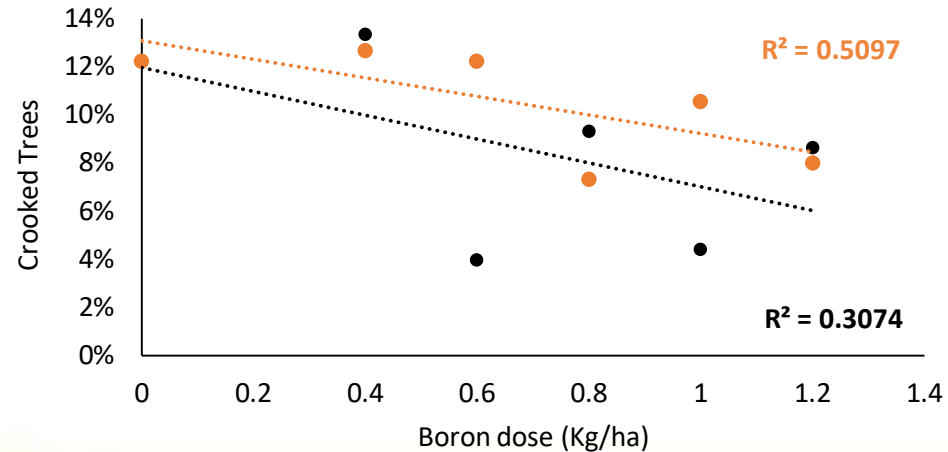
2 year inventory - Qualitative

● Granubor ● Ulexite

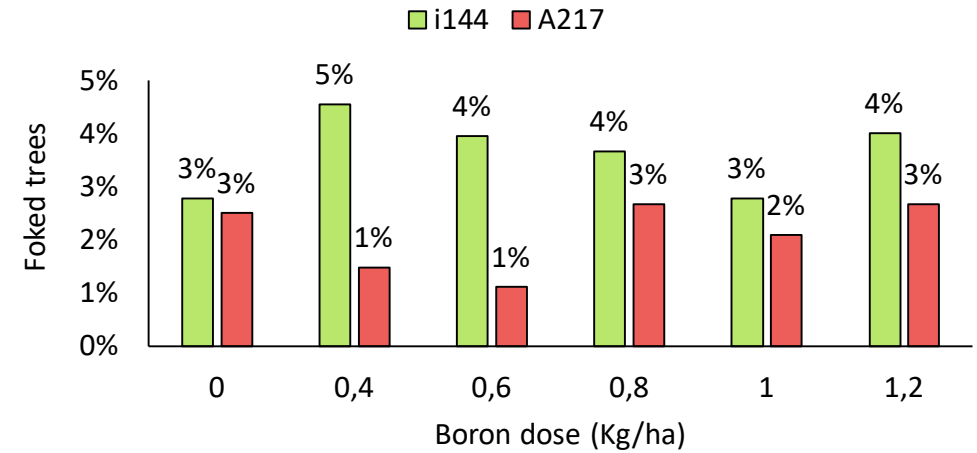
% Crooked Trees | Clone A217



% Crooked Trees | Clone i144



% Forked Trees



% of crooked trees decreased with increasing Boron dose for both clones.