

Earth Life Pty. Ltd.
RESEARCH REPORT

The Effect of Bud Burst on Plant Cane Sets

Trial Conducted by D.E & J.A. Gleeson, Agricultural Consultant

AIM:	To determine the effect of Bud Burst applied with pineapple disease chemical at planting on the establishment of sugar cane sets, by observing the speed of emergence, root development, shoot numbers and shoot vigour.					
PROCEDURE:	70% of Variety Q124 sugar cane field treated with Bud Burst applied with Aratan at planting, then random samples of billets taken six weeks later.					
TREATMENTS:	<ol style="list-style-type: none"> 1. Untreated 2. 1.5 litres Bud Burst per hectare applied with Aratan at planting (Variety Q124) 3. Random cane sets removed at 6 weeks after planting and rated for: <ol style="list-style-type: none"> a) Root development (A = primary) (B = secondary) b) Shoot numbers c) Shoots per node d) Size of shoot 					
	RAW RESULTS					
	CONTROL					
	Roots			Shoots		
	Primary	Secondary	Shoots	Shoots/	Node	Shoot Size
	3	3	2	2	2	2
	1	3	2	1	3	2
	1	1	1	2	3	1
3	3	2	2	2	2	
1	2	1	1	2	1	
2	2	2	2	2	3	
3	0	2	2	2	2	
2	1	1	2	3	3	
1	0	2	2	3	3	
2	2	1	2	3	1	
2	2	2	1	3	2	
2	2	1	2	2	3	
2	1	1	1	3	3	
1	2	2	3	3	3	
2	2	2	2	3	3	
3	3	1	1	3	3	
1	0	1	3	4	2	
2	1	1	2	2	2	
2	3	2	1	3	2	

ASSESSMENT:	3	1	2	1	2	2	
	3	2	2	1	2	1	
	3	4	1	2	3	1	
	2	1	1	2	3	2	
	3	2	1	2	3	3	
	3	1	1	1	1	2	
	1	1	1	2	3	3	
	3	1	1	1	3	3	
	4	3	2	2	3	2	
	2	1	1	1	3	4	
	3	2	2	3	3	3	
	3	3	2	1	2	2	
	3	3	1	2	4	3	
	3	1	1	1	3	2	
	TREATMENT - BUD BURST						
	Roots			Shoots			
	Primary	Secondary	Shoots	Shoots/	Node	Shoot Size	
	1	2	2	3	3	3	
	3	2	1	2	2	3	
	2	2	2	2	2	3	
	3.5	3	4	2	2	4	
	2	1	2	3	3	4	
	3	2	2	1	2	4	
	1	1	2	3	3	2	
	4	4	2	2	2	2	
	4	2	2	2	2	2	
	3	4	2	1	2	3	
	4	4	4	2	2	5	
	3	3	3	2	2	3	
	2	2	1	2	3	4	
	2	5	2	2	3	4	
	3	3	1	4	4	4	
	3	3	2	2	3	4	
4	4	2	2	2	3		
3	4	2	2	3	3		
3	1	1	2	2	3		
1	1	2	2	2	5		
4	4	5	3	3	3		
4	4	5	1	2	2		
4	4	3	1	2	3		
1	1	1	1	2	2		
3	3	1	1	1	2		
3	2	1	1	2	4		
4	5	4	2	2	2		
4	4	3	2	3	2		
4	4	3	1	2	3		
3	4	2	1	2	3		
4	2	2	3	3	4		
3	4	3	1	3	3		
3	4	3	2	2	4		

<u>T-Tests</u>																						
ANALYSIS:	<p><u>Independent samples comparing Bud Burst with Control - Primary Roots</u> Counts: 33, 33 Means: 2.9848, 2.2727 Variances: 0.9763, 0.7045 Std. Devs: 0.9881, 0.8394 Pooled variance: 0.8404 t = 3.1553, with 64 df (for equal variances) Pr (t > 3.1553) = 0.0012 (one tailed) t* = 3.1553 with 62.3694 df (for unequal variances)</p>																					
	<p><u>Independent samples comparing Bud Burst with Control - Secondary Roots</u> Counts: 33, 33 Means: 2.9697, 1.7879 Variances: 1.5303, 1.0473 Std devs: 1.2371, 1.0234 Pooled variance: 1.2888 t = 4.2286, with 64 df (for equal variances) Pr (t > 4.2286) = 0.0000 (one tailed) t* = 4.2286 with 61.8295 df (for unequal variances)</p>																					
	<p><u>Independent samples comparing Bud Burst with Control - No. of Shoots</u> Counts: 33, 33 Means: 2.3333, 1.4545 Variances: 1.2292, 0.2557 Std. Devs: 1.1087, 0.5056 Pooled variance: 0.7424 t = 4.1429, with 64 df (for equal variances) Pr (t > 4.1429) = 0.0001 (one tailed) t* = 4.1429 with 44.7606 df (for unequal variances)</p>																					
	<p><u>Independent samples comparing Bud Burst with Control - Shoot Size</u> Counts: 33, 33 Means: 3.1818, 2.3030 Variances: 0.7784, 0.5928 Std. Devs: 0.8823, 0.7699 Pooled variance: 0.6856 t = 4.3111, with 64 df (for equal variances) Pr (t > 4.3111) = 0.0000 (one tailed) t* = 4.3111 with 62.8485 df (for unequal variances)</p>																					
	<u>Chi Square - Shoots per Node</u>																					
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;">Bud Burst- Observed</th> <th style="width: 15%;">Expected</th> <th style="width: 15%;">Control- Observed</th> <th style="width: 15%;">Expected</th> <th style="width: 40%;">Chi Square</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">19</td> <td style="text-align: center;">14</td> <td style="text-align: center;">9</td> <td style="text-align: center;">14</td> <td style="text-align: center;">3.5714 (100%)</td> </tr> <tr> <td style="text-align: center;">14</td> <td style="text-align: center;">19</td> <td style="text-align: center;">24</td> <td style="text-align: center;">19</td> <td style="text-align: center;">2.6316 (<100%)</td> </tr> <tr> <td style="text-align: center;">33</td> <td></td> <td style="text-align: center;">33</td> <td></td> <td style="text-align: center;">* 6.2030</td> </tr> </tbody> </table>		Bud Burst- Observed	Expected	Control- Observed	Expected	Chi Square	19	14	9	14	3.5714 (100%)	14	19	24	19	2.6316 (<100%)	33		33		* 6.2030
	Bud Burst- Observed	Expected	Control- Observed	Expected	Chi Square																	
	19	14	9	14	3.5714 (100%)																	
	14	19	24	19	2.6316 (<100%)																	
	33		33		* 6.2030																	
	1 Degree of Freedom * Probability <0.025 Significant																					
	CONCLUSIONS:	<p>As the analysis demonstrates, the addition of Bud Burst to the planting dip of Aratan significantly improves:</p> <ol style="list-style-type: none"> 1. Root structure 2. Shoot numbers 3. Shoot quality 																				
<p>Bud Burst can also improve the uniformity of the stand of plant cane.</p>																						