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Twin N Results – Citrus.

Location: Forbes NSW Australia

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Researchers notes: Two control blocks ~ 8 ha in size side by side of trees planted in 2005. Soil tests reveal no difference in soil types. Two Treatments involved for N supply to crop

- 1) **Twin N** nitrogen fixing bacteria (zero synthetic nitrogen)
- 2) **Open Hydroponics** – regular application of citrus specific hydroponic formulation including calcium nitrate and potassium nitrate (+ Phos acid & all essential macro and micro elements)

Trees measured and leaf tests taken each month from 10 data collection points in each treatment.

Results: Growth parameters (trunk girth and height) – no significant difference. Leaf analysis shows Twin N is maintaining leaf nitrogen in ideal ranges, often at a higher level than the open hydroponic trees. Twin N is also helping to solubilise soil phosphorus and deliver adequate levels to the trees. K levels are very good.

FEB		Units	Twin N	Open Hydroponics	Adequate	Deficient
Nitrogen	N	%	3.28	3.20	2.4-2.6	<2.2
Phosphorus	P	%	0.19	0.17	0.12-0.16	<0.10
Potassium	K	%	2.44	2.14	0.7-1.2	<0.4

MARCH		Units	Twin N	Open Hydroponic
Nitrogen	N	%	2.83	2.68
Phosphorus	P	%	0.16	0.14
Potassium	K	%	1.91	1.62

APRIL		Units	Twin N	Open Hydroponic
Nitrogen	N	%	2.68	2.76
Phosphorus	P	%	0.15	0.14
Potassium	K	%	1.98	1.82

MAY		Units	Twin N	Open Hydroponics
Nitrogen	N	%	2.75	3.20
Phosphorus	P	%	0.19	0.21
Potassium	K	%	1.57	1.83

JUNE		Units	Twin N	Open Hydroponics
Nitrogen	N	%	2.97	2.76
Phosphorus	P	%	0.19	0.18
Potassium	K	%	1.60	1.26

JULY		Units	TwinN	Open Hydroponics
Nitrogen	N	%	2.94	2.79
Phosphorus	P	%	0.21	0.20
Potassium	K	%	1.22	0.95

