

RATIONALE:

Fertilizer represents relatively small percentage of the total cost of the crop production but it has a large effect on potential profitability and the fruit quality is an essential factor for its commercial value. Thus, this study was conducted to help citrus growers produce quality fruits through proper fertilization for the growth and production of high value citrus fruits.

METHODOLOGY

Potassium (K) content in kg/tree was applied below the crown canopy through ring method just after fruit setting in accordance to different treatments at 37.35 g - 149.40 g /tree for the production of quality fruits.

HIGHLIGHTS

- ❖ Potassium improves the quality of harvested King Mandarin and Siamese pummelo.
- ❖ In terms of yield, King Mandarin and Siamese pummelo applied with 112.05 g – 149.40 g K/tree produced the highest yield than the untreated trees. Increase in yield was attributed to heavier weight, higher percent edible portion of fruits, more juice content and thicker peeling.
- ❖ As to morphological and qualitative characteristics, trees applied with potassium up to 149.40 g K/tree produced bigger fruits and higher sugar content of the fruit as compared to other treatments, thus, they command higher price in the market.
- ❖ On the economic analysis, trees (King mandarin and Siamese pummelo) applied with potassium gave higher net income as compared to untreated trees.



Yield and yield components and cost and return analysis of King Mandarin

Parameters	TREATMENT				
	Control	37.35 g K	74.70 g K	112.05 g K	149.40 g K
Yield/tree (kg)	14.00 d	20.22 c	28.89 b	40.55 a	40.11 a
Weight per fruit (g)	209.67 c	231.14 bc	267.11 ab	291.81 a	313.00 a
Weight of peel (g)	112.22	101.56	88.23	84.33	81.11
Weight of edible portion (g)	97.44 c	129.59 bc	178.88 ab	207.48 a	231.89 a
% edible portion	46.51 c	55.83 bc	66.98 ab	70.85 ab	73.66 a
Juice content (ml)	114.00 c	123.11 bc	131.78 abc	137.11 ab	150.00 a
Peel thickness (mm)	6.28 a	5.64 ab	5.20 ab	4.74 b	4.63 b
^o Brix	11.52 b	11.67 b	11.84 ab	11.94 ab	12.31 a
Gross Income/ tree (Php)	420.00	606.60	866.70	1216.50	1203.00
Gross Income/ha (Php)	168,000.00	242,640.00	346,680.00	486,600.00	481,200.00
Cost of Prod'n./tree (Php)	289.03	289.84	291.66	293.47	295.29
Cost of Prod'n./tree (Php)	115,210.40	115,936.40	116,662.40	117,388.40	118,114.40
Net Income/tree (Php)	131.97	316.76	575.04	923.03	907.71
Net Income /ha (Php)	52,789.60	126,703.60	230,017.60	369,211.60	363,085.60
BCR	1.46	2.09	2.98	4.15	4.08

Yield and yield components and cost and return analysis of Siamese

Parameters	TREATMENT				
	Control	37.35 g K	74.70 g K	112.05 g K	149.40 g K
Yield/tree (kg)	80.67 b	123.00 a	129.45 a	128.00 a	136.67 a
Weight per fruit (g)	746.67 c	846.67 bc	905.37 bc	969.09 ab	1140.00 a
Weight of peel (g)	311.67 a	275.55 ab	244.33 abc	222.22 bc	178.33 c
Weight of edible portion (g)	435.00 c	571.11 bc	661.04 b	746.87 ab	961.67 a
% edible portion	56.85 c	67.42 bc	73.04 ab	77.06 ab	84.42 a
Juice content (ml)	297.67 d	328.89 c	348.44 bc	368.44 b	400.22 a
Peel thickness (mm)	7.72 a	7.39 ab	6.55 abc	6.02 bc	5.39 c
^o Brix	11.05 c	11.22 bc	11.38 ab	11.44 ab	11.53 a
Gross Income/ tree (Php)	806.70	1230.00	1294.50	1280.00	1366.70
Gross Income/ha (Php)	322,688.00	492,000.00	517,800.00	512,000.00	546,680.00
Cost of Prod'n./tree (Php)	289.03	289.84	291.66	293.47	295.29
Cost of Prod'n./tree (Php)	115,210.40	115,936.40	116,662.40	117,388.40	118,114.40
Net Income/tree (Php)	518.67	940.16	1002.84	986.53	1071.41
Net Income /ha (Php)	207,469.60	376,063.60	401,137.60	394,611.60	428,565.60
BCR	2.80	4.24	4.43	4.36	4.60

RECOMMENDATIONS

1. Application of potassium content of 149.40 g per tree is recommended to produce higher yield, heavier fruits, heavier edible portion, higher sugar content, more juice content and thinner peel.
2. Higher rate of potassium (muriate of potash) can also be conducted to determine the optimum level of potassium.
3. Similar study using other potassium fertilizer sources for higher and good quality high value citrus fruits should be conducted.

For further information, contact:

**VIRGILIO M. LIBUNAO
DANTE A. TATTAO
ANALYN V. SAGUN**

Tel. No. (072) 242-11-17 Loc. 263



**DON MARIANO MARCOS MEMORIAL
STATE UNIVERSITY
North La Union Campus
Bacnotan, La Union**

Potassium Application for High-Value Citrus spp. Increased Yield

