

## OBJECTIVE

To assess the total yield response for mature 'Hamlin' variety orange trees when different rates of dry fertilizer blend applications were treated with Duo Maxx over two growing seasons.

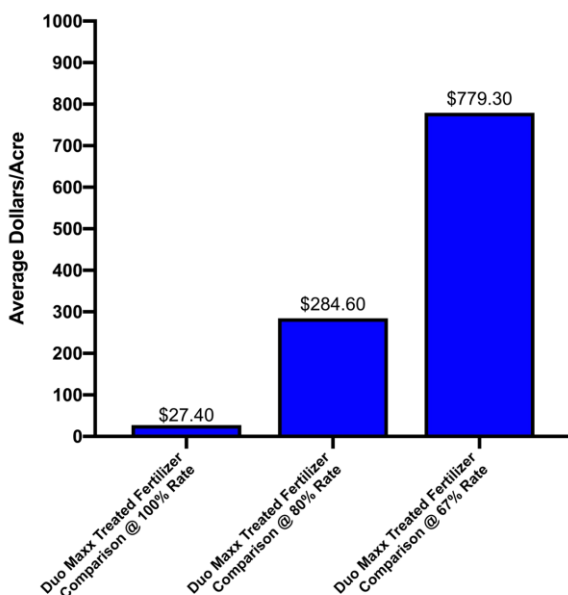
**Site Location:**  
Lake Alfred, FL

**Researcher:**  
Citrus Research & Education Center  
University of Florida

## TIMAC AGRO PRODUCT



Dollars Gained or Lost for Duo Maxx Treated Fertilizer Against Untreated Comparison Fertilizer Rate



## KEY FINDINGS

2-Year Average Total Pounds Solids/Acre for Duo Maxx treated fertilizer increased over all comparison fertilizer rates

**+ 64 total lbs solids/ac**

**ROI: \$27.40/ac**

Improvement from Duo Maxx treated fertilizer  
At 100% fertilizer comparison rate, 2-year average

**+ 173 total lbs solids/ac**

**ROI: \$284.60/ac**

Improvement from Duo Maxx treated fertilizer  
At 80% fertilizer comparison rate, 2-year average

**+ 386.5 total lbs solids/ac**

**ROI: \$779.30/ac**

Improvement from Duo Maxx treated fertilizer  
At 67% fertilizer comparison rate, 2-year average

**Graph:** The Gross Revenue was calculated at \$2.20/lb solids. Return on treatment was calculated at Duo Maxx retail cost of \$100/gallon.

## APPLICATION

Treatment	Application Rate
100% Fertilizer Recommendation	15-3-19 w/ Mg, Zn, Fe, Mn (1600 lbs/year, Split 4x)
100% Fertilizer Recommendation Treated with Duo Maxx (3 qt/ton)	15-3-19 w/ Mg, Zn, Fe, Mn (1600 lbs/ac/year, Split 4x) treated with Duo Maxx (76.8 oz/ac/year, Split 4x)
80% Fertilizer Recommendation	15-3-19 w/ Mg, Zn, Fe, Mn (1280 lbs/year, Split 4x)
80% Fertilizer Recommendation Treated with Duo Maxx (3 qt/ton)	15-3-19 w/ Mg, Zn, Fe, Mn (1280 lbs/ac/year, Split 4x) treated with Duo Maxx (61.4 oz/ac/year, Split 4x)
67% Fertilizer Recommendation	15-3-19 w/ Mg, Zn, Fe, Mn (1072 lbs/year, Split 4x)
67% Fertilizer Recommendation Treated with Duo Maxx (3 qt/ton)	15-3-19 w/ Mg, Zn, Fe, Mn (1072 lbs/ac/year, Split 4x) treated with Duo Maxx (51.5 oz/ac/year, Split 4x)

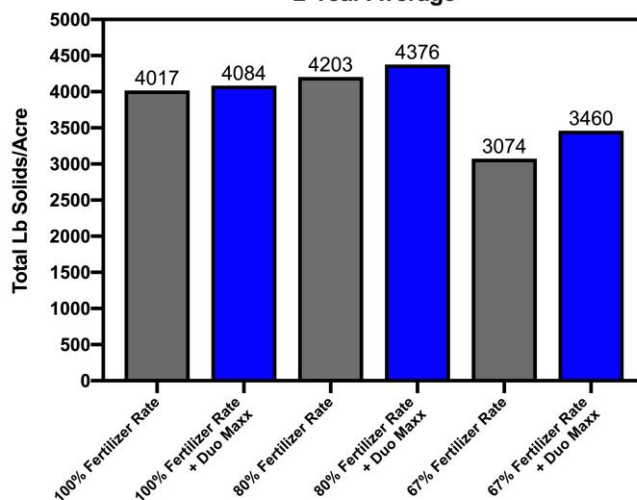
## MATERIALS AND METHODS

This study was conducted in a mature research grove in Lake Alfred, FL at the Citrus Research & Education Center. Suitable uniform healthy trees will be selected in a mature 'Hamlin' grove ('Swingle' rootstock) for the experiment. Two adjacent trees will serve as an experimental unit plot. The experimental design was a randomized complete block with 4 replications. All standard fertilization methods were terminated in order to evaluate tree performance and yield for the study. Fertilization rates were based on Ridge Citrus BMPs for yearly nitrogen lbs/acre (240 lbs) recommendation. Fertilizer was split applied four times throughout the year (Feb, March, May, September), and the same blend of dry granular fertilizer (15-3-19 with Fe, Mn, Mg, Zn) was applied during these split applications. Duo Maxx was applied at labeled rate of 3 quarts per ton of dry fertilizer for each treatment comparison at the same rate as the untreated fertilizer. Harvest was conducted in February during both years of the study for all plots, and plot yields were used to generate a total pounds of solids per acre for each untreated and Duo Maxx treated fertilizer rate.

## RESULTS AND CONCLUSIONS

The application of Duo Maxx to the fertilizers increased the 2-year average of marketable yields at each fertilizer rate, with the greatest improvement happening at the 67% recommended fertilizer rate (12.5% increase). The 80% Fertilizer Rate treated with Duo Maxx showed the highest 2-year average yield, even compared to 100% recommended fertilizer. Yield results show that the Duo Maxx treatment made a greater impact on total pound solids per acre the lower the fertilizer rate.

Total Pound Solids Per Acre, 'Hamlin' Variety  
2-Year Average



## RETURN ON INVESTMENT

	100% Fert	100% Fert + Duo	80% Fert	80% Fert + Duo	67% Fert	67% Fert + Duo
2009 February Yield (lbs solids/ac)	4263	4042	4425	4577	2794	3152
2010 February Yield (lbs solids/ac)	3771	4126	3981	4175	3353	3768
2-Year Average Yield (lbs solid/ac)	4017	4084	4203	4376	3073.5	3460
2-Year Average Gross Rev @ \$2.20/lb	8837.4	8984.8	9246.6	9627.2	6761.7	7612
2-Year Total Cost of Treatment	0	\$120	0	\$96	9	\$80
Avg. Gross Revenue - Treatment Cost	\$ 8,837.40	\$ 8,864.80	\$ 9,246.60	\$ 9,531.20	\$ 6,752.70	\$ 7,532.00
\$/Change of Comparison Fertilizer Rate		<b>\$27.40</b>		<b>\$284.60</b>		<b>\$779.30</b>

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