

# REVISING WALNUT PRODUCTION COST STUDIES FOR THE SOUTHERN SAN JOAQUIN VALLEY

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## ABSTRACT

Acreage under walnuts has been growing steadily in the Southern San Joaquin Valley for the past many years. In the recent years the market value of this commodity has increased significantly and a number of new varieties are being planted. In this changed scenario, data collection for updating the walnut cost studies was undertaken. For this a questionnaire was prepared and filled from growers and other industry stakeholders throughout the season. Various methods of contact were used like personal contact at field meetings or field visits, providing the link in the e-newsletter and putting the survey online. About a dozen responses were received back. These responses were then compiled in an excel spreadsheet and analyzed. The data thus collected were sent to UC Economists who will update the cost studies based on these data.

## RESULTS

First the data pertaining to walnut acreage, production and crop value were collected from the county agriculture commissioners in four counties: Fresno, Madera, Kings, and Tulare. The summary of these data is given below in Table 1.

Table 1

County	Total harvested acreage	Production per acre	Total production (tons)	Total value per acre
Madera	1420	1.78	2528	3709
Fresno	9348	1.32	12300	3384
Kings	14063	2.02	28407	3460
Tulare	36500	1.86	67900	3860

The production of walnuts per acre was found to be lowest in Fresno county (1.32 ton/acre while it was highest in Kings county (2.02 ton/acre). The total value of walnut crop was highest in Tulare county as the number of acres under walnuts in Tulare county is significantly higher than the other three counties in the region.

Respondents were asked to list the costs incurred for walnut cultivar Chandler. The costs of production of walnuts were assessed on the basis of costs incurred in the operations like site preparation and planting, orchard management, pruning, harvesting, pest & disease control and irrigation. The questionnaire that was prepared is attached here as an appendix. The responses of the respondents were very variable in terms of costs but the data across the questionnaires will be

quite useful to develop a fair estimate of the costs involved. Here are the range and details of the cost data collected:

- The cost of subsoiling 5-6 inches deep ranged from \$200 to \$300 per acre, while laser leveling averaged about \$150 per acre.
- The cost of fumigation varied from \$1200 to \$3000.
- Survey and planting cost about \$1.5 per tree on an average.
- The cost of pruning in year 2,3,4 & 5 varied among respondents but ranged from \$40/acre in year 2 to \$ 250/acre in year 5 and beyond.
- Machine harvesting in year 6 and beyond cost \$180-\$200 per ton on an average while cost of hand harvesting during year 4 & 5 varied from \$50 to \$175 per ton.
- Shaking the mummies varied between \$25 & \$80, while most growers paid around \$20 for blowing and \$25 for shredding mummies.
- The cost of trees ranged from \$12 to \$18 per tree while painting and staking the trees cost around 50 cents per tree each.
- For majority of respondents listed irrigation water cost around \$80 while some listed a cost of higher than \$100 per acre inch, upto as high as \$140 per acre inch.
- The cost of fertilizer UAN-32 was around \$30-35 per pound.
- Herbicides like Treflan ad Roundup cost about \$30 & \$20 per pint respectively.
- Insecticides like Omite & Guthion cost in the range of \$15 to 25 per lb while cost of Lorsban was around \$20 per pint.
- CA walnut commission charges were at \$0.01 per cwt.
- Most of the respondents listed the return from walnuts at \$1.60 or \$1.70 per pound.
- The cost of irrigation system varied a lot between flood, drip & microsprinkler systems. Cost of flood irrigation system was around \$500 while drip or microsprinkler systems cost around \$1000 and \$1500 respectively.

## **CONCLUSIONS AND PRACTICAL APPLICATIONS**

A lot of these costs are subjective and vary significantly depending on a lot of site specific factors. However, responses for certain major costs like land preparation, irrigation system, fumigation, trees/planting material, harvesting and pesticides were very uniform and can serve as a guiding template for the new growers. The data collected in 2014 will be used in updating UC walnut cost studies. I plan to keep collecting this valuable information through getting this survey questionnaire filled as I visit more growers & stakeholders in future.

**APPENDIX 1**

**2014 Walnut Cost Studies Questionnaire**

<b>County</b>				
<b>Variety</b>				
<b>ITEM</b>	<b>PRICE (USD)</b>	<b>per</b>	<b>UNIT</b>	<b>COMMENTS</b>
<b>Custom</b>				
Subsoil 5-6' deep		per	Acre	
Laser Level		per	Acre	
Fumigate-Tarped		per	Acre	
Spray Application-Cat 2		per	Acre	
Spray Application-Cat 1		per	Acre	
Survey & Plant		per	Tree	
Prune Yr 2		per	Acre	
Prune Yr 3		per	Acre	
Prune Yr 4		per	Acre	
Prune Yr 5+		per	Acre	
Leaf Analysis Yr 4-7		per	Acre	
Leaf Analysis Mature		per	Acre	
Nematode Analysis		per	Each	
Soil Analysis		per	Each	
PCA Fee Yr 4+		per	Acre	
Hand Harvest Yr 4		per	Ton	
Hand Harvest Yr 5		per	Ton	
Harvest Machine Yr 6 & 7		per	Ton	Per Pick (2 picks)
Harvest Machine Yr 6 & 7		per	Acre	Acreage Fee added to 2d Pick
Harvest Machine Mature		per	Ton	1st pick
Harvest Machine Mature		per	Acre	2d pick
Hull & Dry		per	Ton	
Shake Mummies		per	Acre	or per hour? Write here:
Blow Mummies		per	Acre	
Shred Mummies		per	Acre	
<b>Trees &amp; Material</b>				
Deliver Trees		per	Load	Number of trees on load=
				Delivery radius=
Trees		per	Tree	

Paint		per	Tree	
Tree Stakes		per	Tree	
		per		
<b>Water</b>				
Water-District		per	acre in.	
		per		
<b>Fertilizer</b>				
UN32		per	lb N	
		per		
<b>Herbicide</b>				
Treflan EC		per	Pint	
Roundup		per	Pint	Roundup Power Max
Princep Caliber 90		per	Lb	
		per		
<b>Insecticide</b>				
Omite 30 WP		per	Lb	
Lorsban 4E		per	Pint	
Guthion 50W		per	Lb	
		per		
<b>Fungicide</b>				
Kocide		per	Lb	Which Kocide, please specify
		per		
<b>Growth Regulator</b>				
Ethrel		per	Pint	
		per		
<b>Assessment</b>				
CA Walnut Comm		per	Cwt	
<b>Returns</b>		per		
Walnuts		per	Lb	
		per		
<b>Irrigation System</b>				
Flood		per	Acre	
Drip		per	Acre	
Micro Sprinkler		per	Acre	
<b>For questions, contact UCCE Farm Advisor Gurreet Brar at (559) 241-7526 or gurbrar@ucanr.edu</b>				

2014 Walnut Cost Studies Questionnaire				
County	Kings			
Variety	Tulare/Chandler			
ITEM	PRICE (USD)	per	UNIT	COMMENTS
<b>Custom</b>				
Subsoil 5-6' deep	60.00	per	acre	
Laser Level	50.00	per	acre	
Fumigate-Tarped		per	acre	
Spray Application-Cat 2		per	acre	
Spray Application-Cat 1		per	acre	
Survey & Plant		per	tree	
Prune Yr 2	100.00	per	acre	
Prune Yr 3	250.00	per	acre	
Prune Yr 4	50.00	per	acre	
Prune Yr 5+	50.00	per	acre	
Leaf Analysis Yr 4-7	5.00	per	acre	
Leaf Analysis Mature		per	acre	
Nematode Analysis		per	each	
Soil Analysis		per	each	
PCA Fee Yr 4+		per	acre	
Hand Harvest Yr 4		per	ton	
Hand Harvest Yr 5		per	ton	
Harvest Machine Yr	0.19/lb	per	ton	Per Pick (2 picks)
Harvest Machine Yr	0.19/lb	per	acre	Acreage Fee added to 2d Pick
Harvest Machine M	0.19/lb	per	ton	1st pick
Harvest Machine M	0.19/lb	per	acre	2d pick
Hull & Dry	0.19/lb	per	ton	
Shake Mummies	75.00	per	acre	or per hour? Write here:
Blow Mummies	20.00	per	acre	
Shred Mummies	15.00	per	acre	
<b>Trees &amp; Material</b>				
Deliver Trees		per	load	Number of trees on load=
				Delivery radius=
Trees	12.50	per	tree	
Paint	0.25	per	tree	
Tree Stakes	1.00	per	tree	
		per		

2014 Walnut Cost Studies Questionnaire				
<b>County</b>	<b>Kings</b>			
<b>Variety</b>	<b>Tulare/Chandler</b>			
<b>ITEM</b>	<b>PRICE (USD)</b>	<b>per</b>	<b>UNIT</b>	<b>COMMENTS</b>
<b>Water</b>				
Water-District	110.00	per	acre inch	
		per		
<b>Fertilizer</b>				
UN32	30.00	per	lb N	
		per		
<b>Herbicide</b>				
Treflan EC		per	pint	
Roundup	20.00	per	pint	Roundup Power Max
Princep Caliber 90		per	lb	
		per		
<b>Insecticide</b>				
Omite 30 WP		per	lb	
Lorsban 4E	20.00	per	pint	
Guthion 50W		per	lb	
		per		
<b>Fungicide</b>				
Kocide	25.00	per	lb	Which Kocide, please specify
		per		
<b>Growth Regulator</b>				
Ethrel		per	pint	
		per		
<b>Assessment</b>				
CA Walnut Comm	0.01	per	cwt	
<b>Returns</b>		per		
Walnuts	1.70	per	lb	
		per		
<b>Irrigation System</b>				
Flood		per	acre	
Drip		per	acre	
Micro Sprinkler		per	acre	
<b>Questions: UCCE Farm Advisor G. Brar, gurbrar@ucanr.edu</b>				