

Strawberry Costs of Production With an Emphasis on Labor*

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Questions for today...



What are strawberry costs of production?

How might new labor laws impact costs?

Central Coast Cost and Return Studies

Include: production and harvest practices and costs



Past studies:

- Organic strawberries
- Conventional strawberries
- Second year conventional

Currently updating:

- Conventional strawberries
(preliminary results)

<http://coststudies.ucdavis.edu>

University of California

Agriculture and Natural Resources

Study Labor Rates – 2010 and 2016*

Year	2010 (\$/hour)	2016 (\$/hour)	Percent Increase
Field labor (base wage)	9.00	11.50	28
Field labor with benefits† (wage + percent benefits)	11.88	16.10	36
Machine labor (base wage)	11.00	15.50	41
Machine labor with benefits (wage + percent benefits)	14.52	21.70	49

* Source: UC Cooperative Extension Cost and Return Studies, 2016 = preliminary results.

† Benefits rate included in 2010 study: 32%; draft 2016 study: 40% benefits.

Production and Harvest Costs – 2010 & 2016 Studies*

Strawberry 2010

Category	Cost (\$/Acre)
<i>Cultural</i>	<i>12,283</i>
Business Overhead	6,390
Investment	523
Subtotal	19,196
<i>Harvest</i>	<i>28,687</i>
Total	47,883

Strawberry 2016

Category	Cost (\$/Acre)
<i>Cultural</i>	<i>15,542</i>
Business Overhead	6,244
Investment	383
Subtotal	22,169
<i>Harvest</i>	<i>38,207</i>
Total	60,376

Labor rates largely explain increased costs

* Source: UC Cooperative Extension Cost and Return Studies. <http://coststudies.ucdavis.edu>.
2016 Strawberry costs/acre = preliminary results.

Example Practices & Costs 2010 & 2016*

Practice Cost (labor only)	2010 (\$/acre)	2016 (\$/acre)
Plant strawberries	611	1,030
Hand weed/runner removal	1,212	1,642
Harvest	13,159	17,849
Total example practices	14,982	20,521
Difference	\$5,539/acre (36% increase)	

* Source: UC Cooperative Extension Cost and Return Studies. <http://coststudies.ucdavis.edu>.
2016 = preliminary results. Costs per acre are for labor only, with benefits included.

Labor Challenges: Availability and Higher Costs

- Immigration (?)
- Affordable Care Act (?)
- H-2A program
- Paid sick leave
- Non-productive time
- **Minimum wage**
- **Overtime**



http://www.dir.ca.gov/letf/Agriculture_Employer_Brochure.pdf

Minimum Wage Law (SB 3): Phase-In Schedule*

Date	\$/hour - 26 or more employees	\$/hour – 25 or fewer employees
2016	10.00	10.00
Jan 1 2017	10.50	10.00
Jan 1 2018	11.00	10.50
Jan 1 2019	12.00	11.00
Jan 1 2020	13.00	12.00
Jan 1 2021	14.00	13.00
Jan 1 2022	15.00	14.00
Jan 1 2023	15.00	15.00

* Source: California Legislative Information Senate Bill No. 3.

- Notes:
- Governor may suspend increase in years with budget crises.
 - In 2024 minimum wage will increase with inflation.
 - Less than 5% of affected workers are in agriculture.
(UC Berkeley Labor Center – March 2016).

Practice cost exercise – with increase in minimum wage*

	2016	2022	Difference
Field labor (\$/hour)†	11.50	15.00	\$ 3.50
Machine labor (\$/hour)†	15.50	20.15	\$ 4.65
Labor cost (\$/acre) – weed and runner removal	1,642	2,135	\$ 493.00
Labor cost (\$/acre) – planting (labor only)	1,030	1,339	\$ 309.00

* Exercise projecting 30% increase for field labor and similar increase for machine labor, using draft 2016 UC Cooperative Extension cost and return studies <http://coststudies.ucdavis.edu> and no other adjustments.

† Hourly wage figures do not include a benefits package.

Overtime Law: AB 1066 – Phase-In Schedule*

Date	Hours/day 26 or more employees	Hours/week 26 or more employees	Hours/day 25 or fewer employees	Hours/week 25 or fewer employees
2016	10.0	60	10.0	60
Jan 1 2017	10.0	60	10.0	60
Jan 1 2018	10.0	60	10.0	60
Jan 1 2019	9.5	55	10.0	60
Jan 1 2020	9.0	50	10.0	60
Jan 1 2021	8.5	45	10.0	60
Jan 1 2022	8.0	40	9.5	55
Jan 1 2023	8.0	40	9.0	50
Jan 1 2024	8.0	40	8.5	45
Jan 1 2025	8.0	40	8.0	40

Start
26 or
more

Start
25 or
less

* California Legislative Information Assembly Bill No. 1066.
Law includes provisions for different overtime compensation and days of rest.

*EXAMPLE / Minimum Wage Rate Projections (\$/Hour), 2016 to 2022**

Year	CA Min Wage (MW)†	CA MW Inc. (%)	Base Wage Field Labor = \$11.50/hour‡			Base Wage Equipment Labor = \$15.50/hour		
			CA MW Inc. (%)	Inc. 3.5%	Inc. 2%	CA MW Inc. (%)	Inc. 3.5%	Inc. 2%
2016	10.00	na	na	na	na	na	na	na
2017	10.50	5.0	12.08	11.90	11.73	16.28	16.04	15.81
2018	11.00	4.8	12.65	12.32	11.96	17.06	16.60	16.13
2019	12.00	9.0	13.79	12.75	12.20	18.59	17.19	16.45
2020	13.00	8.3	14.94	13.20	12.45	20.13	17.79	16.78
2021	14.00	7.7	16.09	13.66	12.70	21.68	18.41	17.11
2022	15.00	7.1	17.23	14.14	12.95	23.22	19.05	17.46

* Example is one of many possible wage projection scenarios and does not include other adjustments.

† Source: California Senate Bill No. 3 for operations with 26 or more employees.

‡ Starting point for wage rate projections/scenarios = base wage rates shown in DRAFT 2016 UC Cooperative Extension Sample Costs to Produce and Harvest Strawberries.

 = below MW

EXAMPLE / MW and OT Wage Rate Projections (\$/Hour), 2016 to 2022*

Year	CA Phase-In Hrs/Week†	Overtime Hrs/Week‡	Study Field Labor = \$11.50/hour§			Study Equip Labor = \$15.50/hour		
			Increase 3.5%	OT 1.5X/Hr	OT/ Week	Increase 3.5%	OT 1.5X/Hr	OT/ Week
2016	60	0	na	na	na	na	na	na
2017	60	0	11.90	11.90	0.00	16.04	16.04	0.00
2018	60	0	12.32	12.32	0.00	16.60	16.60	0.00
2019	55	5	12.75	19.13	95.63	17.19	25.78	128.89
2020	50	10	13.20	19.79	197.95	17.79	26.68	266.80
2021	45	15	13.66	20.49	307.31	18.41	27.61	414.21
2022	40	20	14.14	21.20	424.09	19.05	28.58	571.60

* Example is one of many possible wage projection scenarios and does not include other adjustments.

† Source: California Assembly Bill No. 1066; for operations employing 26 or more employees.

‡ Assuming a 60-hour work week.

§ Starting point for wage rate projections/scenarios = base wage rates shown in DRAFT 2016 UC Cooperative Extension Sample Costs to Produce and Harvest Strawberries.

Considerations*

- Overtime law most likely to affect irrigators and equipment operators because of nature of work.
- Slowdown in Mexico – U.S. migration since recession; few newcomers; aging and more settled workforce.
- Labor availability constrained – many employers likely to improve efficiency in scheduling or pay overtime rather than try to recruit and train additional workers.
- Many new workers are H-2A guest workers.

* Source: Martin, P.L. Labor cost challenges facing California agriculture. ARE Update 20(1).
<http://giannini.ucop.edu/publications/are-update/>.

4-S Responses to Labor Challenges*

Satisfy – retain workers through added benefits or bonuses

Stretch – workforce with mechanical aids

Substitution – replace workers with machines

Supplement – current workers with H-2A guest workers

Are there additional S's to consider?

Shift – shift to alternative crops that require less labor ??

Shrink – production acreage and/or operation ??

* Source: Martin, P.L. Labor cost challenges facing California agriculture. ARE Update 20(1).
<http://giannini.ucop.edu/publications/are-update/>.

Still many unknowns...

- Immigration + other policies
- Availability of workers
- Implications for wages
 - binding wage vs prevailing wage
- Employer and employee response to overtime
- Other?

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