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Increased Risks and Fewer Jobs: Evidence of California Farmworker Vulnerability During the COVID-19 Pandemic

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Abstract

New evidence indicates that agricultural workers have elevated vulnerability for contracting COVID-19 infection. As of June 30, 2020, California's Monterey County Agricultural Workers were more than **three times likely** to become infected by the virus than persons employed in the county's Non-Agricultural industries.

Agricultural workers in California now face a double threat: the COVID-19 virus and loss of employment owing to the collapse of foodservice demand. New Agricultural Employment findings reveal a steep 39% decline from 3-year average (2017-2019) of Monterey County Agricultural Employment during April, May & June 2020. The fall-off statewide during June 2020 was 23%, over 111,000 jobs lost.

From posted reports, confirmed COVID-19 cases in Monterey County, California, which include information about Industry of employment at the time of diagnosis, were combined with county-wide employment data. The cumulative total of confirmed cases during the pandemic, as reported on June 30, 2020, included 605 cases among workers in the Agricultural Industry, and 587 cases in Non-Agricultural Industries. But published reports indicate that average monthly employment was more than three times higher in Non-Agricultural Industries than in the Agricultural Industry for the period March 19 through June 30, 2020 (124,536 compared with 38,567). The prevalence of confirmed cases of COVID-19 infection among Agricultural Workers was **1,569 per 100,000 workers** on June 30, 2020. Among Non-Agricultural Workers, the prevalence was **471 per 100,000 workers**.

There were 324 confirmed cases classified as employment status "Unknown Industry or Under Investigation" on June 30, 2020. Thus, depending on how many of these cases of COVID-19 infections become re-classified to Agricultural Industry employment, Agricultural Workers were **at least 2.1 to as much as 5.1 times** greater risk of infection than Non-Agricultural Workers in Monterey County.

Increased Risks and Fewer Jobs: Evidence of California Farmworker Vulnerability During the COVID-19 Pandemic[1]

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New evidence from Monterey County, California, indicates that agricultural workers have elevated vulnerability for contracting COVID-19 infection. Daily reports of confirmed cases in Monterey County include information about Industry of employment at the time of diagnosis. These reports were combined with county-wide employment data to yield prevalence by industry.

On July 1, 2020, the county's health officer reported 605 cumulative, year-to-date, confirmed cases among Agricultural Industry workers, and 587 cases among all Non-Agricultural Industries.[3] Table I presents a summary of cumulative confirmed cases county-wide as of that date. Unfortunately, 324 confirmed cases lacked Industry of employment on that date, many of which were under investigation through contact tracing or other methods.[4]

Table I

Cases of COVID-19 Infection, by Industry of Employment:

Monterey County, California, June 30, 2020 (*reported on July 1, 2020*)*

Agriculture	*All Non-Agricultural[5] Industries*	*Retired or unemployed*	*Unknown or under investigation*	*Total cases*
605	587	175	324	1,691

**Confirmed cases reported by Monterey County Health Department.*

The county-wide prevalence of conformed cases of COVID-19 infections among all Monterey County residents on June 30, 2020, the ratio of total confirmed cases, 1,691, divided by Monterey County's estimated population of

[1] The author benefitted from informal reviews and discussions with Merna Villarejo, Dave Runsten, Dr. Robert M. Swenson, Edward Kissam, Rick Mines and Ildi Carlisle-Cummins.

[2] Contact information: dqvillfarm@gmail.com, see also https://donvillarejo.github.io/

[3] Although the reporting date is July 1, 2020, the data is stated as complete as of June 30, 2020.

[4] Additional information concerning employment status may become available during contact tracing interviews.

[5] Agricultural Employment includes all businesses classified by the U.S. Department of Commerce within NAICS codes 111000-113200, 114000-115000.

435,477, equal to **388 cases per 100,000 residents**. Determining the prevalence of confirmed cases among Agricultural Industry workers on this date can be found from the ratio of the number of confirmed cases, 605, to the average Agricultural Industry monthly employment from the declared start of the shelter-in-place pandemic order through June 30, 2020. Similarly, the prevalence among all workers in Non-Agricultural Industries is the ratio of 587 confirmed cases to the average monthly employment in all Non-Agricultural Industries during this period.

Estimate of the prevalence of COVID-19 infections among Agricultural and Non-Agricultural Workers in Monterey County

Monthly Agricultural Industry employment in Monterey County typically varies substantially during Spring and early summer months. Estimates for both Agricultural Industry and Non-Agricultural Industry employment during Spring 2020 are presented in Table II, as published by California's Employment Development Department's CES (not seasonally adjusted).[6]

Table II

Agricultural & Non-Agricultural Monthly Employment,[7] Monterey County

Source: Industry Employment – Official Estimates (EDD LMID CES)

Month	*Estimated Agricultural Employment, 2020 (CES)*	*Estimated Non-Agricultural Employment, 2020 (CES)*
March	36,900	145,300
April	32,300	118,100
May	41,300	119,700
June	42,800	127,100

The findings reported in Table II informs the estimated average monthly employment during the pandemic for both the Agricultural Industry and the Non-Agricultural Industries, but must take account of the entire period from March 19, 2020, when the official shelter in place took effect, through June 30, 2020. The computations are fully described in Appendix I.

Average monthly Agricultural employment, Monterey County: 38,567

[6] County-wide "Industry Employment – Official Estimates" for January-June 2020 were reported by the Current Employment Survey (CES): https://www.labormarketinfo.edd.ca.gov/data/employment-by-industry.html

[7] CES describes these series as "Farm Employment" and "Non-Farm Employment" but they include all of the NAICS codes described in Footnote 4.

From Table I, the Number of confirmed COVID-19 Monterey County Agricultural Industry cases was 605, which yields an estimated average prevalence during this period equal to **1,569 confirmed cases per 100,000 Agricultural Workers**, as of June 30, 2020. Importantly, as presented in Table I, there were 324 positive cases classified as Industry Unknown or Under Investigation. If contact-tracing or other investigation of the latter cases finds some or all were Agricultural Industry workers, the estimated prevalence for June 30, 2020, would be *increased*.

This result can be compared with the corresponding calculation for workers in all Non-Agricultural Industries combined in Monterey County who had been diagnosed with the virus infection. Again, see Appendix I, taking account of the official start of the shelter-in-place pandemic order during March, the average estimated monthly Non-Agricultural Employment in Monterey County follows.

Average monthly Non-Agricultural employment, Monterey County: 124,536

From Table I, the number of confirmed COVID-19 cases in Monterey County for all Non-Agricultural Industries was 587, which yields an estimated prevalence equal to **471 confirmed cases per 100,000 Non-Agricultural Workers** as of June 30, 2020. If some or all of the 324 positive cases classified as employment status "Unknown or Under Investigation," were reclassified as Non-Agricultural employment, the prevalence for such workers would be *increased*.

The prevalence of confirmed COVID-19 infection among Monterey County Agricultural Workers was more than **three times greater** than the prevalence among the county's Non-agricultural Workers: **1,569/471, equal to 3.3**.

Abrupt decline of Agricultural Employment attributed to the COVID-19 pandemic

Monthly Monterey County Agricultural Industry employment data for the period January-June, averaged for the 3-years 2017-2019, are presented in Table III.[8] These are compared with estimated employment for January-June 2020.[9]

The 3-year average for March 2017-2019 and March 2020 employment differ by only a few percent, likely because pandemic restrictions were in place on March 19. On the other hand, reported Agricultural Employment during April, May and June for 2020 were each sharply lower than the 3-year-average for 2017-

[8] Cf. https://data.bls.gov/cew/apps/data_views/data_views.htm#tab=Tables

[9] County-wide "Industry Employment – Official Estimates" for January-June 2020 were reported by the Current Employment Survey (CES): https://www.labormarketinfo.edd.ca.gov/data/employment-by-industry.html

2019. The declines of reported employment were 22,215 (-41%), 22,814 (-36%), and 27,071 (-39%), respectively, during April, May and June 2020.

Table III

Agricultural Employment, Monterey County, Monthly

3-year Average (2017-2019) vs. Estimate for 2020

Month	*Agricultural Employment 3-year Avg, 2017-2019 (QCEW)*	*Estimated Agricultural Employment, 2020 (CES)*	*Difference: 2020 Less 3-year Avg (2017-2019)*
January	32,112	34,400	+2,288
February	33,640	36,000	+2,360
March	38,193	36,900	-1,293
April	54,515	32,300	-22,215
May	64,114	41,300	-22,814
June	69,940	42,800	-27,140

California-wide employment data indicates even greater numbers of jobs lost, more than 111,000 during June (see Table IV).

Table IV

Agricultural Employment, California, Monthly

3-year Average (2017-2019) vs. Estimate for 2020

Month	*Agricultural Employment 3-year Avg, 2017-2019 (QCEW)*	*Estimated Agricultural Employment, 2020 (CES)*	*Difference: 2020 Less 3-year Avg (2017-2019)*
January	343,273	357,800	+14,527
February	353,400	360,800	+7,400
March	351,472	345,300	-6,172
April	415,865	335,400	-80,465
May	474,079	376,200	-97,879
June	487,440	375,800	-111,640

Most jobs losses were in three counties (Kern, Monterey & Tulare); see Appendix A-2. Job loss figures do not take account of those still working who were assigned reduced hours, nor the community-level impact of lost income.

Discussion

Prevalence of confirmed cases of COVID-19 by Industry Sector

It is important to accept the fact that the prevalence of confirmed cases of COVID-19 in Monterey County described in the present report are **only valid as of June 30, 2020.** These findings will differ from findings on subsequent dates because, unfortunately, the pandemic continues to follow its path of infecting ever more individuals.

Also, the findings **only refer to a single county**, and cannot be assumed to represent any other of the state's counties, nor represent the state as whole. The author searched county health department websites in all 58 counties,[10] and learned that "Dashboard," or other online presentations in 54 of the counties were **completely lacking in any information whatsoever about the employment status of residents with confirmed cases of COVID-19.**

Subsequently, the author submitted California Public Records Act[11] requests to 18 county Health Officers that yielded useful information in some instances, but mostly not the comprehensive data available to the public on the website of the Monterey County Health Department. The ready accessibility of comprehensive information on their website is a great public service. Accordingly, it was not necessary to formally request this information.[12]

Regrettably, the Imperial County Health Department responded[13] with a curt message, "*At this time we currently do not collect or display COVID-19 positives that are employed in Agriculture.*" The San Joaquin County Health Department referred the CPRA request to their County Counsel who responded with a legal opinion, "*The CPRA does not require that responding agencies prepare or create documents, nor respond to questions. Accordingly, no documents are provided.*" [14]

Pandemic impacts on Agricultural Industry Employment

Monterey County's major crops are fresh vegetables, berries, winegrapes and Nursery & Ornamental products. Demand for fresh market produce through conventional retail outlets remains largely unchanged from pre-pandemic levels.

[10] The searches were conducted on Monday, July 13, and Tuesday, July 14.
[11] California Public Records Act, Government Code Section 6250 et seq.
[12] https://www.co.monterey.ca.us/government/departments-a-h/health/diseases/2019-novel-coronavirus-covid-19/2019-novel-coronavirus-2019-ncov-local-data-10219
[13] Online request submitted on June 3, 2020. Response received on June 16, 2020.
[14] Request sent via Facsimile on July 1, 2020, Response received on

The Agricultural Marketing Service (USDA) reports wholesale market activity, described as "Movement." On June 29, 2020, the Movement report indicates Salinas-Watsonville Shipping Point activity, year-to-date, was similar to, or slightly increased, for most major commodities as compared with the same data one year earlier.[15]

In contrast, wholesale foodservice demand for fruits and vegetables very nearly collapsed under the impact of the COVID-19 pandemic.[16] During 2017, American households spent more of their food expenditures for meals prepared away from their homes vs. the amount spent on meals they prepared at home: 53% compared to 47%, respectively.[17] Decades earlier, the ratios were the reverse: many more food dollars spent on meals prepared at home vs. away from home.

The closing of schools, colleges and universities, hotels, resorts, restaurants and similar types of businesses, together with the cancellation or postponement of conventions, weddings, gradations and family events of all kind forced agricultural producers to drastically pull back from supplying the wholesale foodservice sector in the face of shrinking market demand. Moreover, exports of agricultural commodities were adversely impacted. The very public dumping of fresh milk was vivid testimony of how agricultural production was affected by the pandemic.

Accuracy of employment data and of confirmed cases of COVID-19

Both measures of interest for this research – the numbers of Agricultural Workers and of Non-Agricultural Workers afflicted with COVID-19 virus in a specific county, and the numbers of both types of workers employed at the county level – are changing in unpredictable ways, even as this report is being written. It is useful to consider some uncertainties in the data reported herein on the results.

The employment data for Agricultural Workers has obvious problems as well as generally unrecognized uncertainties. Many farm tasks are strictly seasonal, from planting, cultivating, irrigating, harvesting, packing and shipping. Officially published employment data refers exclusively to the number of persons each month who were on their employer's payroll during the pay period that includes the 12th day of the month. For agriculture, there are likely persons who worked

[15] https://www.ams.usda.gov/mnreports/fvddaily_move.pdf

[16] See also the report *Economic Impacts of the COVID-19 Pandemic on California Agriculture*, ERA Economics, 64 pp, June 16, 2020.

[17] https://www.ers.usda.gov/amber-waves/2018/november/new-us-food-expenditure-estimates-find-food-away-from-home-spending-is-higher-than-previous-estimates/

during the week prior to that reference week, but were not employed during the pay period when the "official" count is tabulated, or perhaps only worked during subsequent weeks. Clearly, these individuals are not reported at all for the purpose of officially tracked employment.

Perhaps more serious is that persons employed by labor contractors are generally attributed to the county in which their employer has its business office. It is now well established that many labor contractors currently active in California send crews to counties outside of the one where their headquarters happens to be located. It is unreasonable for a labor contactor to tabulate precisely the county in which each of their employees happens to be working during the pay period that includes the 12th day of the month. Some of their employees might be working in more than one county during such a week!

In addition, if a worker employed by a labor contractor was determined to be infected with COVID-19, the case would be attributed to the county where the worker resides, most often the county where the labor contractor is headquartered. In such cases, it might not be the actual county where the illness was contracted.

These factors imply that the number of Agriculture Workers officially reported as employed for a given month in a specific county may not be accurate, nor will the county where an infection may have occurred be reflected in that county's toll of confirmed cases. Non-Agricultural employment data is probably far more accurate because most jobs in those industries are stable, year-round jobs, usually at a "brick & mortar" worksite. The implicit assumption of officially reported agricultural employment data is that the same number of persons were working each and every day of a specific month, which is unlikely.

Finally, there is evidence that farmworkers may acquire COVID-19 infections away from the work site. Some travel to and from a job site in a labor bus, or a *raitero* van, or a car pool with fellow workers. And, as demonstrated in the recently released CIRS study of farm labor housing in Monterey and Santa Cruz Counties,[18] most workers in this region live in densely crowded housing, often shared with unrelated persons, not just family members, providing an obvious pathway for the spread of COVID-19 disease among farmworkers.

[18] https://www.cityofsalinas.org/our-city-services/community-development/regional-farmworker-housing-study

Appendix I

Table A-1

Agricultural & Non-Agricultural Monthly Employment, Monterey County

Source: Industry Employment – Official Estimates (EDD LMID CES)

Month	*Estimated Agricultural Employment, 2020 (CES)*	*Estimated Non-Agricultural Employment, 2020 (CES)*	*Fraction of Monthly Employment to Include in the Average*
March	36,900	145,300	0.419
April	32,300	118,100	1.0
May	41,300	119,700	1.0
June	42,800	127,100	1.0

The State of California issued a "Shelter-in-Place" order on March 18, 2020, effectively closing many businesses by March 19, 2020. Accordingly, 13 days in March were affected by those restrictions. The fraction of March employment that must be taken in account when computing the average monthly employment from March 19 is 13/31 = 0.419. The total number of months from that date through June 30 is 3.419

For the computation of the average Agricultural Industry employment is therefore:

[(36900)x(0.419) + 32300 + 41300 + 42800]/(3.419) = **38,567**

Similarly, for the computation of the average Non-Agricultural Industry employment is therefore:

[(145300)x(0.4194) + 118100 + 119700 + 127100]/(3.4194) = **124,536**

Considering the 324 cases classified a "Unknown or Under Investigation" in the hypothetically extreme circumstances in which all were either determined later to have been in Agriculture, on the one hand, or in Non-Agriculture, on the other hand, it becomes possible to stake firm limits when comparing the ratio of Agriculture to Non-Agricultural cases. was certainly **at least 2.1 to as much 5.1 times greater** than for the county's Non-Agricultural workers.

Appendix II

Table A-2

Agricultural Employment, Selected Counties, California
3-year Average (2017-2019) vs. Estimate for June 2020

Month	*Agricultural Employment 3-year Avg, June, 2017-2019 (QCEW)*	*Estimated Agricultural Employment, June 2020 (CES)*	*Difference: June 2020 Less 3-year Avg (2017-2019)*
Fresno	51,491	48,600	-2,891
Imperial	12,561	9,000	-3,561
Kern	66,835	45,600	-21,235
Monterey	69,940	42,800	-27,140
Riverside & San Bernardino*	18,773	15,500	-3,273
San Joaquin	19,137	13,500	-5,637
Santa Cruz**	(11,254)	4,900	-6,354
Sutter & Yuba*	7,190	4,000	-5,138
Tulare***	(45,269)	29,100	-16,169
Ventura	27,025	22,700	-4,325

*Published CES data available for MSA only: the author combined QCEW data for both counties.
**Published QCEW data for Santa Cruz County available only for 2019
***Published QCEW data for Tulare County available only for 2018.

The dozen counties listed in Table A-2 account for 95,723 lost jobs, out of the statewide total of 111,640, about 86%. Three counties in Table A-2 (Kern, Monterey and Tulare) account for more than half of statewide jobs lost, about 58%.