NCFH
National Center for Farmworker Health, Inc.
Farmworker Health Factsheet

COVID-19 in Rural America: Impact on Farms & Agricultural Workers

Note: NCFH typically relies on peer-reviewed research and government reports for its fact sheet series, but due to the urgent and constantly evolving nature of the pandemic, we have utilized reputable media sources as well. This fact sheet will be updated on a weekly basis.
Last updated: September 22, 2020

Impact of COVID-19 in Rural America

- As of September 21st, 98% of rural counties in America had reported positive COVID-19 cases and 75% had reported one or more deaths. More than 805,000 rural residents have tested positive for COVID-19 and 18,181 deaths among rural Americans have been attributed to the disease.[1]

- The current case rate in rural counties is 174.9 cases per 10,000 residents and the current death rate is 3.95 per 10,000 residents.[1] In late May, the case rate was 28.95 per 10,000 residents in rural areas, representing a 392% increase in the case rate in 90 days.[2)]

- Epidemiologists generally consider rural Americans more vulnerable to the pandemic than urban Americans. Higher proportions of elderly persons, higher smoking usage, higher prevalence of certain chronic diseases, and lower proportions of persons covered by health insurance contribute to this vulnerability.[3,4]

- Emerging research is beginning to demonstrate stark disparities in the rate of COVID cases and COVID-related deaths among people of color in the U.S., a pattern that has emerged in both urban and rural areas.[5,6] A major factor in this disparity is likely due to the fact that a high proportion of essential workers are people of color and thus have greater risk of exposure.[7]

- A lack of physicians and in-patient hospital beds is another major concern for rural areas that will experience a relatively high number of COVID-19 cases. Nearly half of rural hospitals operate in a financial deficit, and many hospitals have had to lay-off or temporarily furlough staff or completely close their doors due to the financial impact of the pandemic.[1,8]

- Cases and deaths from COVID-19 have generally been higher in metropolitan areas of the U.S., but non-metropolitan areas of the U.S. have seen rapidly increasing numbers of cases and deaths, beginning in late April.[9] As of mid-September, current hot spots (defined as highest number of cases in past week per capita) include Woodward County, Oklahoma; Emmons County, North Dakota; Anderson & Edwards County, Texas; and Rosebud County, Montana, all counties without a major metropolitan area.[10]

COVID-19 on American Farms & among Agricultural Workers

- The widespread shutdowns of businesses, schools, and universities have had a dramatic economic impact on American farms. Corn prices have fallen by 15% since February, dairy prices have fallen by 28%, and beef and pork prices have fallen by more than 30%.[11] Researchers from the University of Missouri estimate that U.S. farmers and ranchers will lose approximately $20 billion in revenue during 2020 due to the pandemic.[12]

- Because of COVID outbreaks in over 700 meatpacking and food processing plants, U.S. beef and pork production declined by 40% in the summer of 2020.[13]

- Farm bankruptcies in the U.S. were up by 23% from March 2019 to March 2020, the third-highest level in the past two decades. The number is expected to increase sharply during the pandemic.[14]

- Mass layoffs of agricultural workers have been reported in various locations in order to meet social distancing guidelines, low product demand, and due to positive cases among a cohort of workers.[15,16] Many workers fear testing for COVID since a positive test may mean a permanent job loss.

- Overcrowded and substandard housing conditions are a major concern for the potential of COVID-19 to spread through agricultural worker communities.[17,18] A single building may house several dozen workers or more, who often sleep in dormitory-style quarters, making quarantining or social distancing efforts difficult if not impossible. Limited access to restrooms and sinks, at home and in the field, may complicate hygiene prevention efforts.[19]

- Extremely low annual incomes and a widespread lack of access to health insurance may limit health care-seeking behaviors among agricultural workers, even if they are experiencing symptoms of an illness.[20,21]

- **Outbreaks on farms:** No comprehensive national or industry-wide testing or reporting of positive COVID cases among agricultural workers is being systematically conducted, but some case clusters among agricultural workers are being reported in the media:

    - **ARIZONA:** Although the exact number of cases among farm workers in Yuma County, Arizona is not reported, 143 positive COVID-19 cases in the county have occurred in or near farm labor camps.[22] Five female prison inmates employed on Hickman's Family egg farm tested positive in June.[23]
    - **CALIFORNIA:** The largest outbreak on a single farm that has occurred to date in California is on a poultry farm (Foster Farms) in Merced County, where at least 392 employees have tested positive, and at least 8 workers have died.[24]Another large outbreak occurred on the Villa Las Brisas berry farm in Ventura County,

where 201 H-2A workers tested positive.[25] Ventura County also saw an outbreak among 28 H-2A workers who were employed in avocado and citrus orchards, and over 35 employees of Calavo Growers in Ventura County tested positive in early May.[26,27] In late July, another outbreak among H-2A workers in Santa Barbara county has occurred, with 91 workers testing positive, one of whom has died.[28] Twelve additional H-2A workers employed by Rancho Nuevo Harvesting in Santa Barbara county have also tested positive.[27] A reported 247 agricultural workers in Monterey County, California have tested positive for the virus.[29] Other outbreaks among farmworkers are being reported in California among fruit and vegetable packing house workers.[30] One hundred and fifty employees of a pistachio farm in Wasco, California and 65 of their family members have tested positive, triggering a strike from other employees who learned of the outbreak through local news.[31–33] The rural Lake County also has an ongoing outbreak where 25 farmworkers recently tested positive.[34] At least 60 agricultural workers residing in Solano County and working in Sonoma and Napa vineyards have tested positive.[35] In San Joaquin County, 102 workers have tested positive for the virus.[36] Guillermo Gomez, a 39-year-old farmworker from Orange Cove, died from COVID-19 after a six week battle with the disease.[37]

- **COLORADO:** At least 11 employees of a mushroom farm in Alamosa County have tested positive for coronavirus.[38] A potato farm and processing facility in Rio Grande County had 13 employees test positive in late May, and another potato farm in the same county had 25 positive employees.[39] A greenhouse operation in Weld County had 14 staff test positive in early May.[39]
- **FLORIDA:** As of mid-June, Florida is experiencing large outbreaks among farmworkers, although media reporting has been limited. In the farm labor community of Immokalee, more than 1,000 positive cases have been documented in recent weeks and the area has one of the highest infection rates in the state.[40] A watermelon farm in Alachua County reportedly had 90 out of 100 workers test positive for the virus.[41] A 17-year-old female migrant farmworker from Immokalee, Florida nearly died from COVID-19 while working in Georgia.[42] A reported COVID-19 death of an Immokalee farmworker was reported in May, but the employer has denied any cases on his farm and has called the pandemic a "hoax".[43] In mid-July, over 20 employees of Costa Farms in the Miami-Dade area have reportedly tested positive.[44]
- **GEORGIA:** An outbreak among agricultural workers has been reported in Echols County, where 58 of 73 tested persons were found positive for COVID-19.[45] Echols County now has the highest case rate in Georgia, with over 4,000 cases per 100,000 residents. Lanier County saw a tripling of case numbers in a single day after 59 farmworkers tested positive in mid-June.[46] On June 23rd, the first death of a migratory farmworker from Georgia was reported in the media.[47]
- **ILLINOIS:** In early July, 100 COVID-19 cases had been reported among agricultural workers employed in northern Illinois on different farms.[48]
- **MAINE:** Small outbreaks of 3-10 workers have started occurring in late July and early August on blueberry farms.[49]

- **MICHIGAN:** A multi-county outbreak occurred in late April due to a COVID-19 cluster on a poultry farm in Ionia County. At least fifteen farm employees tested positive, and health department officials traced a total of 84 cases in five different counties to the original poultry farm cases.[50,51] Oceana County has reported an outbreak among 216 farmworkers and the workers' contacts.[52] A single farm in Branch County had 57 workers, primarily working with H-2A visas, tested positive in late June.[53] Several case clusters have been reported on farms in Missaukee County in late July, but the number of cases has not been released.[54]
- **MISSOURI:** Thirteen out of 60 workers have tested positive for the virus on a hog farm in Audrain County, Missouri.[55]
- **NEW JERSEY:** Fifty-nine agricultural workers in Upper Pittsgrove Township, New Jersey have tested positive for coronavirus, over half of the town's seasonal agricultural labor force.[56] More than 50 farm workers on a specialty crop farm in Gloucester County, New Jersey have tested for coronavirus as of late May.[57] A total of over 400 farm workers have tested positive in the state of New Jersey, and at least 2 workers have died from the disease.[58]
- **NEW YORK:** A large outbreak of COVID-19 occurred in Madison County, New York, where 169 workers from a single farm have tested positive for coronavirus. Public health officials raised concerns about a lack of isolation procedures during transportation to and from the farm and in the workers' sleeping quarters.[59] OSHA is conducting an investigation at the farm.[60]
- **NORTH CAROLINA:** In early July, the total number of positive cases of agricultural workers residing in camps in the state was 177 in early July.[61] Bottomley Evergreens & Farms in Alleghany County has now reported the largest outbreak on a farm in the state, with 112 positive cases as of August 18th, 2020.[62] Other large outbreaks have occurred in the state in August, with 46 positive cases in Macon County, 31 cases in Greene County, and 27 cases in Wilson County, all occurring on farms with shared worker housing.[62]
- **OHIO:** A cluster outbreak with an unknown number of workers have been reported on two farms in Canton and Holmes counties.[63] In Champaign County, 50 workers on a single farm tested positive in July and August.[64]
- **OREGON:** Three separate outbreaks have occurred at Townsend Farms, with one outbreak occurring in April with 51 workers who tested positive, and a second outbreak occurring in May with 56 workers who tested positive, and a third outbreak in June, affecting 22 workers.[65] According to the Oregon Health Authority, an additional 263 agricultural workers and their close contacts have tested positive for COVID due to workplace outbreaks with five or more cases since the start of the pandemic.[66]
- **TENNESSEE:** Nearly 200 farm employees on a single farm in Rhea County, Tennessee tested positive for COVID-19 in late May. 100% of the employees on the farm tested positive.[67] Thirty-eight out of 119 employees have tested positive in late May on a single strawberry farm in Unicoi County, and in early June a second farm in the county reported that 10 of their workers had tested

positive.[68,69] On a mushroom farm in Loudon County, 74 employees tested positive out of the nearly 300 tested so far.[70]

- **TEXAS:** According to the Centro de Trabajadores Agricolas Fronterizos, four farmworkers tested positive for COVID-19 in late May, and one of them died from the disease.[71] An H-2A guestworker named Marco Antonio Galvan Gomez died from COVID-19 a few weeks after arriving in Texas to work on Blaine Larsen farm, where reportedly at least 35 other workers became ill and two additional COVID deaths occurred.[72] Personal communication with the Texas Department of State Health Services has found approximately 35 other positive COVID cases on other farms in Dallam and Hartley counties.
- **WASHINGTON:** Over 70 farm and fruit-packing workers in Yakima County, Washington have tested positive for COVID-19.[73] In Okanogan County, 120 employees on a single farm have tested positive, with another 156 workers awaiting test results.[74] Stemlit Growers in Chelan County, Washington have reported two separate outbreaks among their agricultural workers.[75] In late April, Stemlit Growers in Chelan County announced that 36 of their 71 H-2A workers had tested positive for the virus, and in late May another outbreak occurred in one of their packing houses, where 25 out of 60 workers tested positive. On May 30th, a farmworker in Yakima, Washington died from COVID-19.[74] Two H-2A workers have died from COVID-19 on Gebbers Farm in Okanogan County: Juan Carlos Santiago Rincon, in his 30s, died from the disease on July 8th, and Earl Edwards, in his early 60s, died in late July.[76] A third non-visa employee of Gebbers Farm, Francisco Montiel, died on August 1st.[77]
- **Approximate number of positive COVID cases among agricultural workers and family members reported by media to date: 5,378**

COVID-Related Policies & Initiatives for Agricultural Workers

- Several state and county governments have implemented regulations, provided free testing, and started funding programs to support and protect agricultural workers during the pandemic.[78–80] As of mid-July, only eight states have issued mandatory regulations for protecting agricultural workers from exposure to COVID-19 (Colorado, Michigan, New York, New Mexico, Oregon, Pennsylvania, Washington, Wisconsin).[81] Sixteen states currently have non-enforceable recommendations.

- The Oregon Occupational Safety and Health Administration will implement new rules to be in effect from May 11, 2020 through October 28, 2020 and will require more toilets and handwashing stations in the field, cleaning of those facilities three times a day, and spacing requirements for transportation and beds in employer-provided housing.[82] Washington state has also implemented special regulations for farms, requiring employers to provide facemasks and handwashing stations, requiring indoor workers to work and travel in small cohorts, and other safety measures.[83]

- Several states and counties have begun funding emergency quarantine housing for agricultural workers suffering from COVID-19. Other state and counties have added

funds to pay for lost wages or assistance with bills for agricultural workers affected by COVID.[84–86]

- A number of diverse coalitions to protect the health of farmworkers across the country have emerged. A coalition of growers, researchers, and advocates has coalesced in Monterey County, California, to create health and safety guidelines, obtain PPE for farmworkers, and increase access to testing and quarantine facilities.[87] Some state governments, such as Maine and New York, have been proactively working with community health centers and local health care providers to provide testing for farmworkers and health and safety guidelines for the agricultural industry.[88,89]

- In Oregon and California, grape growers' and wine makers' associations have come together with health care partners and farmworker-serving organizations to provide mobile testing services, PPE, and trainings to agricultural workers in grape-growing regions.[90]

- Even though America's agricultural workers have been classified as "critical infrastructure" workers (also known as essential workers), many still lack essential protections and benefits:
    - The U.S. Occupational Safety and Health Administration (OSHA) has not provided clear guidance on employers' responsibility to provide PPE to employees to protect them from exposure to COVID-19.[91] Even if clear guidance or a COVID-related standard was available, OSHA cannot conduct inspections or enforce health and safety standards on farms with 10 or fewer employees.[92] OSHA recently revised their guidance, and now requires employers to record COVID-19 illnesses that cause the employee to seek medical care or miss one or more days of work and that may have been contracted at work.[93]

    - An estimated 49% of horticulture workers lack work authorization to work in the U.S.[20] This means that at least half of all horticulture workers are not able to access unemployment benefits if they are laid off or furloughed.[94] Undocumented workers were also not eligible to receive the federal stimulus money sent to families through the CARES Act.[95] U.S. citizen spouses married to a spouse without a Social Security number are also ineligible, which may impact many agricultural worker households with mixed immigration status.

Keywords: rural health, farmworker health, covid-19, coronavirus, rural epidemiology

References

1. Ullrich F, Mueller K. *Confirmed COVID-19 Cases, Metropolitan and Nonmetropolitan Counties*. University of Iowa https://rupri.public-health.uiowa.edu/publications/policybriefs/2020/COVID%20Data%20Brief.pdf

2. Ullrich F, Mueller K. *Confirmed COVID-19 Cases, Metropolitan and Nonmetropolitan Counties 5.31.2020*.; 2020. https://rupri.public-health.uiowa.edu/publications/policybriefs/2020/COVID%20History/COVID%20Data%20Brief%2005312020.pdf

3. Johnson K. An Older Population Increases Estimated COVID-19 Death Rates in Rural America. *Carsey Sch Public Policy Sch Repos*. Published online April 10, 2020. https://scholars.unh.edu/carsey/399

4. U.S. Census Bureau. Health Insurance in Rural America. The United States Census Bureau. Accessed April 22, 2020. https://www.census.gov/library/stories/2019/04/health-insurance-rural-america.html

5. Hooper MW, Nápoles AM, Pérez-Stable EJ. COVID-19 and Racial/Ethnic Disparities. *JAMA*. Published online May 11, 2020. doi:10.1001/jama.2020.8598

6. Miriam J, Richard O. For Latinos and COVID-19, doctors are seeing an 'alarming' disparity. *Hartford Courant*. https://www.courant.com/coronavirus/sns-nyt-alamring-disparity-for-latinos-coronavirus-20200508-tdjsm4ld7vctfmnlfeecnuaiwe-story.html. Published May 8, 2020. Accessed May 19, 2020.

7. Centers for Disease Control & Prevention. Coronavirus Disease 2019 (COVID-19). Centers for Disease Control and Prevention. Published February 11, 2020. Accessed April 22, 2020. https://www.cdc.gov/coronavirus/2019-ncov/community/critical-workers/implementing-safety-practices.html

8. Dreher A. COVID-19 puts rural hospitals in Eastern Washington on brink of financial collapse. *Yakima Herald*. https://www.yakimaherald.com/special_projects/coronavirus/covid-19-puts-rural-hospitals-in-eastern-washington-on-brink-of-financial-collapse/article_1449b2d4-831a-11ea-a1a6-ff1722e1257d.html. Published April 20, 2020. Accessed April 22, 2020.

9. Silverman H, Toropin K, Sidner S, Perrot L. Navajo Nation surpasses New York state for the highest Covid-19 infection rate in the US. CNN. Accessed May 27, 2020. https://www.cnn.com/2020/05/18/us/navajo-nation-infection-rate-trnd/index.html

10. The New York Times. Coronavirus in the U.S.: Latest Map and Case Count. *The New York Times*. https://www.nytimes.com/interactive/2020/us/coronavirus-us-cases.html. Published July 21, 2020. Accessed July 21, 2020.

11. American Farm Bureau. Crop and Livestock Prices Plunge Under Weight of COVID-19 Uncertainty. Accessed April 22, 2020. https://www.fb.org/newsroom/crop-and-livestock-prices-plunge-under-weight-of-covid-19-uncertainty

12. Food & Agricultural Policy Research Institute. *Early Estimates of the Impact of COVID-19 on U.S. Agricultural Commodity Markets, Farm Income and Government Outlays*. University of Missouri; 2020. Accessed July 14, 2020. https://www.fapri.missouri.edu/wp-content/uploads/2020/04/FAPRI-Report-02-20.pdf

13. Reeling Midwest Farmers Look for Lawmakers' Plan B as Aid Stalls. Bloomberg Government. Accessed September 17, 2020. https://about.bgov.com/news/reeling-midwest-farmers-look-for-lawmakers-plan-b-as-aid-stalls/

14. Pandemic Likely to Increase Farm Bankruptcies. Accessed May 27, 2020. https://www.fb.org/podcast/pandemic-likely-to-increase-farm-bankruptcies

15. Gupta A, Fawcett M. Undocumented Farmworkers Are Refusing Covid Tests for Fear of Losing Their Jobs. Workday Minnesota. Accessed June 30, 2020. https://workdayminnesota.org/undocumented-farmworkers-are-refusing-covid-tests-for-fear-of-losing-their-jobs/

16. Migrant farmworkers are getting fired for seeking Covid-19 medical treatment. The Counter. Published August 11, 2020. Accessed August 11, 2020. https://thecounter.org/migrant-farm-workers-fired-reporting-covid-19-housing-louisiana/

17. Arcury TA, Weir M, Chen H, et al. Migrant farmworker housing regulation violations in North Carolina. *Am J Ind Med*. 2012;55(3):191-204. doi:10.1002/ajim.22011

18. Quandt S, Brooke C, Fagan K, Howe A, Thornburg T, McCurdy S. Farmworker Housing in the United States and Its Impact on Health. *New Solut*. 2015;25(3):263-286.

19. Pena A, Teather-Posadas E. Field Sanitation in U.S. Agriculture: Evidence from NAWS and Future Data Needs. *J Agromedicine*. 2018;23(2). Accessed April 22, 2020. https://www.tandfonline.com/doi/abs/10.1080/1059924X.2018.1427642

20. JBS International. Findings from the National Agricultural Workers Survey (NAWS) 2015-2016: A Demographic and Employment Profile of United States Farmworkers. Published 2018. Accessed April 22, 2020. https://www.doleta.gov/naws/research/docs/NAWS_Research_Report_13.pdf

21. Guild A, Richards C, Ruiz V. Out of Sight, Out of Mind: The Implementation and Impact of the Affordable Care Act in U.S. Farmworker Communities. *J Health Care Poor Underserved*. 2016;27(4):73-82. doi:10.1353/hpu.2016.0183

22. Op-ed: Migrant Farmworkers, Native Ranchers in Border States Hit Hardest by COVID-19. Civil Eats. Published May 22, 2020. Accessed May 27, 2020. https://civileats.com/2020/05/22/op-ed-migrant-farmworkers-native-ranchers-in-border-states-hit-hardest-by-covid-19/

23. 5 Arizona prison inmates at Hickman's egg farm test positive for COVID-19. KTAR.com. Published July 1, 2020. Accessed September 22, 2020. https://ktar.com/story/3355561/5-arizona-prison-inmates-at-hickmans-egg-farm-test-positive-for-covid-19/

24. Lauten-Scrivner A. Foster Farms COVID-19 deaths among worst work-related outbreaks in California, official says. mercedsunstar. Accessed September 17, 2020. https://www.mercedsunstar.com/news/coronavirus/article245767575.html

25. Oxnard farmworker housing: 154 have recovered from COVID-19 outbreak. Accessed September 22, 2020. https://www.vcstar.com/story/news/local/2020/07/07/oxnard-farmworker-housing-covid-outbreak-coronavirus-recovery-rate/5387928002/

26. Santos S de los. Several employees test positive for COVID-19 at produce packing site in Santa Paula. KEYT | KCOY. Published May 14, 2020. Accessed May 27, 2020. https://keyt.com/health/coronavirus/2020/05/13/employee-tests-positive-for-covid-19-at-produce-packing-site-in-santa-paula/

27. Investigation: COVID rips through motel rooms of guest workers who pick nation's produce. CalMatters. Published August 17, 2020. Accessed September 22, 2020. https://calmatters.org/california-divide/2020/08/guest-worker-covid-outbreak-california/

28. Covid-19 rips through motel rooms of farmworkers who pick nation's produce. The Counter. Published August 18, 2020. Accessed August 18, 2020. https://thecounter.org/covid-guest-workers-motel-rooms-produce-california/

29. Coronavirus spreads among fruit and vegetable packers, worrying U.S. officials. *Reuters*. https://www.reuters.com/article/us-health-coronavirus-usa-farmworkers-idUSKBN23I1FO. Published June 11, 2020. Accessed June 17, 2020.

30. Cox J. Local food companies boost workplace protections after employees test positive for COVID-19. The Bakersfield Californian. Accessed May 27, 2020. https://www.bakersfield.com/news/local-food-companies-boost-workplace-protections-after-employees-test-positive-for-covid-19/article_7f0cb796-7dda-11ea-9a27-1f3f7116d112.html

31. Associated Press. Farmworkers at Central California pistachio farm strike after dozens test positive for the coronavirus. *Los Angeles Times*. https://www.latimes.com/california/story/2020-06-25/farmworkers-at-central-california-pistachio-strike-after-dozens-test-positive-for-the-coronavirus. Published June 26, 2020. Accessed June 30, 2020.

32. Garcia J. Dozens of Pistachio Plant Workers Infected with COVID-19. KQED. Published July 6, 2020. Accessed July 7, 2020. https://www.kqed.org/news/11827498/dozens-of-pistachio-plant-workers-infected-with-covid-19

33. Yurong D. Protest held after dozens of farmworkers test positive for COVID-19 at Wasco packing house. ABC30 Fresno. Published July 17, 2020. Accessed July 21, 2020. https://abc30.com/6321004/

34. Lake County reports first death related to COVID-19 as cases spike. The North Bay Business Journal. Published July 3, 2020. Accessed July 7, 2020. https://www.northbaybusinessjournal.com/article/news/lake-county-reports-first-coronavirus-death-as-ag-worker-outbreak-drives-ca/

35. Klearman S. Clusters of COVID-19 cases arise among North Bay farmworkers, who remain vulnerable. *The Weekly Calistogan*. https://napavalleyregister.com/community/calistogan/news/clusters-of-covid-19-cases-arise-among-north-bay-farmworkers-who-remain-vulnerable/article_bdb21c2d-1806-54cd-9fcd-52866f387f23.html. Published July 11, 2020. Accessed July 14, 2020.

36. Times ACLA. SJ knew coronavirus could ravage its farmworkers; why didn't officials stop it? recordnet.com. Accessed July 28, 2020. https://www.recordnet.com/news/20200727/sj-knew-coronavirus-could-ravage-its-farmworkers-why-didnrsquot-officials-stop-it

37. Rose S. Teen trying to raise money for funeral after dad dies of COVID-19. ABC13 Houston. Published August 15, 2020. Accessed August 18, 2020. https://abc13.com/6372068/

38. Keith T. COVID-19 outbreak at Colorado mushroom farm; at least 11 confirmed cases. Published May 7, 2020. Accessed June 2, 2020. https://www.kktv.com/content/news/COVID-19-outbreak-at-Colorado-mushroom-farm-at-least-11-confirmed-cases-570265271.html

39. Colorado Department of Public Health & Environment. Outbreak data. Published July 9, 2020. Accessed July 14, 2020. https://covid19.colorado.gov/data/outbreak-data

40. News ABC. Florida migrant towns become coronavirus hot spots in US. ABC News. Accessed June 17, 2020. https://abcnews.go.com/Health/wireStory/florida-migrant-towns-coronavirus-hot-spots-us-71212542

41. DeSantis To Keep State Open Despite Surge In Coronavirus Cases. *WUSF Public Media*. https://www.wusf.org/desantis-to-keep-state-open-despite-surge-in-coronavirus-cases/. Published June 17, 2020. Accessed June 17, 2020.

42. Mazzei P. Florida's Coronavirus Spike is Ravaging Migrant Farmworkers. *The New York Times*. https://www.nytimes.com/2020/06/18/us/florida-coronavirus-immokalee-farmworkers.html. Published June 18, 2020. Accessed June 23, 2020.

43. What's Going On In Immokalee? (Part 1). WFTX. Published June 11, 2020. Accessed June 23, 2020. https://www.fox4now.com/news/america-in-crisis/coronavirus-cases-increase-in-farm-community

44. Grinspan L. 'I really thought I was going to die.' Plant nursery workers sick with COVID-19 report dangerous conditions at work. Miami Herald. Published July 8, 2020. Accessed July 14, 2020. https://www.miamiherald.com/news/local/community/miami-dade/homestead/article244034017.html

45. Herbert C. Echols cases nearly triple after migrant worker testing. Valdosta Daily Times. Accessed June 9, 2020. https://www.valdostadailytimes.com/news/echols-cases-nearly-triple-after-migrant-worker-testing/article_d94166bc-9b67-11ea-a29a-a7e31eca372f.html

46. Herbert C. Lanier COVID-19 cases triple with migrant farmworker testing. Valdosta Daily Times. Accessed June 17, 2020. https://www.valdostadailytimes.com/news/lanier-covid-19-cases-triple-with-migrant-farmworker-testing/article_b9c189f6-af1d-11ea-a694-973d3d6b79b2.html

47. Herbert C. Saying Goodbye: Family loses father to COVID-19. Valdosta Daily Times. Accessed June 23, 2020. https://www.valdostadailytimes.com/news/saying-goodbye-family-loses-father-to-covid-19/article_529e0726-b301-11ea-8659-4306df20d461.html

48. At Least 100 Migrant Farmworkers In Illinois Have Tested Positive For COVID-19, Clinic Director Says -. Published July 14, 2020. Accessed August 11, 2020. https://illinoisnewsroom.org/at-least-100-migrant-farmworkers-in-illinois-have-tested-positive-for-covid-19/

49. Tadlock E. Maine CDC reports another outbreak among agricultural workers for local blueberry farm. https://www.wabi.tv. Accessed August 5, 2020. https://www.wabi.tv/2020/08/04/maine-cdc-reports-another-outbreak-among-agricultural-workers-for-local-blueberry-farm/

50. NEWS 10. Local poultry farm seeing COVID-19 outbreak. Published April 28, 2020. Accessed June 2, 2020. https://www.wilx.com/content/news/Local-poultry-farm-seeing-COVID-19-outbreak-570025931.html

51. Banta M. COVID-19 outbreak at farm connected to at least 84 cases in 5 counties. Published May 7, 2020. Accessed June 2, 2020. https://www.lansingstatejournal.com/story/news/local/2020/05/07/coronavirus-covid-19-herbrucks-poultry-ranch-outbreak/5175911002/

52. Tarrant A. Michigan's asparagus harvest seemed to go well, then the COVID-19 outbreaks came. Lansing State Journal. Accessed August 11, 2020. https://www.lansingstatejournal.com/story/news/local/2020/07/29/michigan-asparagus-harvest-covid-19-coronavirus-agriculture-vegetables/5519690002/

53. Measel J. Maroa testing of workers led to recent Branch County COVID-19 spike. WTVB. Published June 16, 2020. Accessed July 7, 2020. https://wtvbam.com/news/articles/2020/jun/16/maroa-testing-of-workers-led-to-recent-branch-covid-19-spike/1029983/

54. News KHUC. "Cluster" of cases among Missaukee County ag workers. Cadillac News. Accessed July 21, 2020. https://www.cadillacnews.com/news/cluster-of-cases-among-missaukee-county-ag-workers/article_9537249b-5d87-5ac9-9440-0197f0637c73.html

55. Harker J. 13 covid cases among workers at MO hog farm. *Brownfield Ag News*. https://brownfieldagnews.com/news/13-covid-cases-among-workers-at-mo-hog-farm/. Published May 20, 2020. Accessed June 2, 2020.

56. More Than Half of a South Jersey Farm's Workers Infected With COVID-19, DOH Reports. NJ Spotlight. Published May 11, 2020. Accessed May 12, 2020. https://www.njspotlight.com/2020/05/more-than-half-of-a-south-jersey-farms-workers-infected-with-covid-19-doh-reports/

57. More migrant workers test positive for COVID-19, this time in Gloucester County. WHYY. Accessed May 27, 2020. https://whyy.org/articles/more-migrant-workers-test-positive-for-covid-19-this-time-in-gloucester-county/

58. Two Fatalities Reported as South Jersey Seasonal Farmworkers with COVID-19 Infections Grows to 400. NJ Spotlight. Published May 22, 2020. Accessed May 27, 2020. https://www.njspotlight.com/2020/05/two-fatalities-reported-as-south-jersey-seasonal-farm-workers-with-covid-19-infections-grows-to-400/

59. Green Empire Farm coronavirus outbreak: Madison County wants to inspect migrant living conditions at hotels. syracuse. Published May 10, 2020. Accessed May 12, 2020. https://www.syracuse.com/news/2020/05/green-empire-farm-coronavirus-outbreak-madison-county-wants-to-inspect-migrant-living-conditions-at-hotels.html

60. OSHA Conducting Investigation at Green Empire Farms. Accessed May 12, 2020. https://spectrumlocalnews.com/nys/central-ny/news/2020/05/08/osha-investigation-at-green-empire-farms

61. Sanchez-Guerra A. COVID cases rise across NC agricultural farmworkers | Raleigh News & Observer. *The News & Observer*. https://www.newsobserver.com/news/business/article243878327.html. Published July 3, 2020. Accessed July 14, 2020.

62. Toth C. 112 workers test positive for coronavirus at Alleghany County Christmas tree farm. charlotteobserver. Accessed August 18, 2020. https://www.charlotteobserver.com/news/coronavirus/article245019545.html

63. Byard K. Health officials tracking coronavirus outbreaks, including at Case Farms. The Repository. Accessed June 9, 2020. https://www.cantonrep.com/news/20200604/health-officials-tracking-coronavirus-outbreaks-including-at-case-farms

64. Newton R. Coronavirus: 50 cases now linked to farm outbreak in Urbana. dayton-daily-news. Accessed September 17, 2020. /news/coronavirus-50-cases-now-linked-to-farm-outbreak-in-urbana/S3W63BS3CZBLTLI6GGIMGVKCRM/

65. Oregon Health Authority. COVID-19-Weekly-Report. Published July 22, 2020. Accessed September 22, 2020. https://www.oregon.gov/oha/PH/DISEASESCONDITIONS/DISEASESAZ/Emerging%20Respitory%20Infections/COVID-19-Weekly-Report-2020-07-22-FINAL.pdf

66. Oregon Health Authority. COVID-19 Weekly Report September 16. Published September 16, 2020. Accessed September 22, 2020. https://www.oregon.gov/oha/PH/DISEASESCONDITIONS/DISEASESAZ/Emerging%20Respitory%20Infections/COVID-19-Weekly-Report-2020-09-16-FINAL.pdf

67. Luther S. Rhea Co. farm leader says all of their nearly 200 employees have virus, only 3 symptomatic. WTVC. Published May 26, 2020. Accessed June 2, 2020. https://newschannel9.com/news/local/rhea-co-farm-leader-says-all-of-their-nearly-200-employees-have-virus-only-3-symptomatic

68. 38 Scott's Strawberry & Tomato Farms employees test positive for COVID-19. WJHL | Tri-Cities News & Weather. Published June 1, 2020. Accessed June 2, 2020. https://www.wjhl.com/news/local/38-scotts-strawberry-tomato-farms-employees-test-positive-for-covid-19/

69. 10 Jones & Church Farms employees test positive for COVID-19. Johnson City Press. Accessed June 9, 2020. http://www.johnsoncitypress.com/Health-Care/2020/06/08/10-Jones-Church-Farms.html

70. WVLT News. No additional cases of COVID-19 at Monterey Mushroom. https://www.wvlt.tv. Accessed June 9, 2020. https://www.wvlt.tv/content/news/57-workers-test-positive-for-COVID-19-at-Monterey-Mushroom-plant-in-Loudon-County-570550011.html

71. Martinez V. Farmworkers center pushes for more testing with essential workers at risk for COVID-19. El Paso Times. Accessed July 7, 2020. https://www.elpasotimes.com/story/news/2020/07/03/el-paso-farmworker-center-pushes-for-more-testing-for-essential-workers/3257645001/

72. Death in Dalhart. The Texas Observer. Published September 16, 2020. Accessed September 17, 2020. https://www.texasobserver.org/larsen-farms-dalhart-farmworker-death/

73. As coronavirus cases in Yakima Valley agriculture spike, advocates for growers and workers react differently to new state guidelines. The Seattle Times. Published April 19, 2020. Accessed April 22, 2020. https://www.seattletimes.com/seattle-news/as-coronavirus-cases-in-yakima-valley-agriculture-spike-new-state-guidelines-get-sharply-different-reactions/

74. Farmworker death draws state scrutiny in Okanogan County, where COVID-19 cases are spiking. The Seattle Times. Published July 25, 2020. Accessed July 28, 2020. https://www.seattletimes.com/seattle-news/health/farmworker-death-draws-state-scrutiny-in-okanogan-county-where-covid-19-cases-are-spiking/

75. Robbins J. Stemilt packing line shuts down after 25 new COVID-19 infections. NCWLIFE. Published May 26, 2020. Accessed May 27, 2020. https://www.ncwlife.com/stemilt-packing-line-shuts-down-after-25-new-covid-19-infections/

76. Read R. COVID-19 strikes Washington state farmworkers and swamps rural hospitals. Los Angeles Times. Published August 4, 2020. Accessed August 5, 2020. https://www.latimes.com/world-nation/story/2020-08-04/coronavirus-northwest-farm-workers

77. writer TB staff. Activists protest for farmworker rights. The Wenatchee World. Accessed September 17, 2020. https://www.wenatcheeworld.com/news/coronavirus/activists-protest-for-farmworker-rights/article_47a92b36-de7e-11ea-8a0b-6357f7165fd0.html

78. Quijano Bill to Provide Funding to NJ Department of Health to Ensure Health, Safety of Farm Workers During Pandemic - Insider NJ. Accessed August 25, 2020. https://www.insidernj.com/press-release/quijano-bill-provide-funding-nj-department-health-ensure-health-safety-farm-workers-pandemic/

79. State Officials Urge Farmworkers Get Tested for COVID-19. Accessed August 25, 2020. https://www.ny1.com/nyc/all-boroughs/ny-state-of-politics/2020/08/21/state-officials-urge-farmworkers-get-tested-for-covid-19

80. Gov. Inslee orders more COVID-19 testing for Washington farmworkers | king5.com. Accessed August 25, 2020. https://www.king5.com/article/news/health/coronavirus/gov-inslee-orders-more-covid-19-testing-for-washington-farmworkers/281-4f72dbff-5e50-4ade-b3b2-86942ad07bb8

81. Hayes J. EWG Analysis: Few States Have Job Safety Rules To Protect Farmworkers From COVID-19. EWG. Published July 14, 2020. Accessed July 14, 2020. https://www.ewg.org/news-and-analysis/2020/07/ewg-analysis-few-states-have-job-safety-rules-protect-farmworkers-covid-19

82. Egener M. Coronavirus changes Oregon farmworker housing, labor rules. https://joomlakave.com. Accessed May 5, 2020. https://pamplinmedia.com/but/239-news/465497-377253-coronavirus-changes-oregon-farmworker-housing-labor-rules

83. Spokane-Review JC. Washington ag workers get new protections from COVID-19. Twin Falls Times-News. Accessed June 2, 2020. https://magicvalley.com/washington-ag-workers-get-new-protections-from-covid-19/article_f5e05e3b-ebda-5823-83d9-018604f04623.html

84. Plevin R. Riverside County to consider providing housing, financial aid to farmworkers with COVID-19. The Desert Sun. Accessed August 25, 2020. https://www.desertsun.com/story/news/2020/08/21/riverside-county-could-provide-housing-financial-aid-farmworkers-covid-19/3413200001/

85. Melton J. FHDC Provides Support for Two New Oregon Worker Relief Funds. Accessed August 25, 2020. http://fhdc.org/2020/08/fhdc-provides-support-for-two-new-oregon-worker-relief-funds/

86. Farmworker Household Assistance Program (FHAP). Ventura County Community Foundation. Accessed August 25, 2020. https://vccf.org/fhap/

87. As Covid-19 cases spike, an unprecedented alliance emerges to protect California farmworkers. Food and Environment Reporting Network. Published July 7, 2020. Accessed July 7, 2020. https://thefern.org/2020/07/as-covid-19-cases-spike-an-unprecedented-alliance-emerges-to-protect-california-farmworkers/

88. Russell E. COVID-19 cases among blueberry workers worsen farm labor shortage. Press Herald. Published August 3, 2020. Accessed August 18, 2020. https://www.pressherald.com/2020/08/03/covid-19-cases-among-blueberry-workers-worsen-farm-labor-shortage/

89. Khatib K. Local health center ahead of the curb in fighting coronavirus outbreaks among migrant workers. Published August 17, 2020. Accessed August 18, 2020. https://www.wivb.com/news/web-extras/local-health-center-ahead-of-the-curb-in-fighting-coronavirus-outbreaks-among-migrant-workers/

90. As Harvest Begins, Organizations Are Mobilizing to Protect Vineyard Workers From Covid-19. VinePair. Published August 31, 2020. Accessed September 1, 2020. https://vinepair.com/articles/organizations-protect-vineyard-workers-covid-19/

91. U.S. Occupational Safety and Health Administration. Safety and Health Topics: COVID-19 - Standards. Accessed April 22, 2020. https://www.osha.gov/SLTC/covid-19/standards.html

92. U.S. Occupational Safety and Health Administration. Small farming operations and exemption from OSHA enforcement activity under CPL 02-00-051. Accessed April 22, 2020. https://www.osha.gov/laws-regs/standardinterpretations/2007-07-16

93. U.S. Department of Labor Adopts Revised Enforcement Policies For Coronavirus | U.S. Department of Labor. Accessed June 9, 2020. https://www.dol.gov/newsroom/releases/osha/osha20200519-0

94. Smith R. Fact Sheet: Immigrant Workers' Eligibility for Unemployment Insurance. Accessed April 22, 2020. https://www.nelp.org/publication/immigrant-workers-eligibility-unemployment-insurance/

95. CARES Act: Foreign National and Immigrant Eligibility for Paid Leave, Unemployment Benefits, and Stimulus Rebates. The National Law Review. Accessed April 22, 2020. https://www.natlawreview.com/article/cares-act-foreign-national-and-immigrant-eligibility-paid-leave-unemployment