

# 2020 Agricultural Peak Employment Wage and Practices Employer & Worker Survey Results

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# Executive summary

## Background

The Washington State Employment Security Department's (ESD) Data Architecture, Transformation & Analytics (DATA, formerly Labor Market and Economic Analysis, LMEA) division has conducted an agricultural wage and practice survey annually since 2015, surveying for occupations and activities for which employers have requested temporary foreign laborers through the agricultural recruitment system (ARS). Prior to 2015, DATA conducted an agricultural wage and practice survey on a biennial basis for select agricultural commodities.

On January 24, 2022, the U.S. Department of Labor validated and issued the new prevailing wage rate findings contained within this report for Washington State's federal H-2A Foreign Labor Certification program on their [Agricultural Online Wage Library](#). Due to the litigation, detailed in the library [archive](#), surrounding the Agricultural Peak Employment Wage and Practices survey results in *Torres Hernandez, et al. v. Stewart, et al.*, No. 20-cv-3241, DATA was unable to engage in its typical agricultural industry stakeholder engagement process.

## Role of State Employment Security Agencies

USDOL provides funding to State Employment Security Agencies (SESAs) to conduct surveys that help its regional offices establish prevailing wages and prevailing or normal and common practices in agriculture. The guidelines to conduct these surveys are contained in ETA Handbooks 385 and 398. ETA Handbook 385 requires SESAs to conduct a prevailing wage survey for any agricultural activity or occupation to which one or more of the following conditions apply:

1. One hundred or more workers were employed in the previous season, or are expected to be employed in the current season;
2. Foreign workers were employed in the previous season, or employers have requested or may be expected to request foreign workers in the current season, regardless of the number of workers involved;
3. The crop activity has an unusually complex wage structure, or there are other factors affecting the prevailing wage which can best be determined by a wage survey; or
4. The crop or crop activity has been designated by the national office as a major crop or crop activity either because of the importance of the production of this crop to the national economy or because large numbers of workers are employed in the crop activity in several different areas in the country (ETA Handbook 385, p. I-115).

## Key findings

The 2020 Agricultural Peak Employment Wage and Practice Surveys received 44.39 percent and 54.46 percent response rates for the employer and worker surveys respectively; this equates to 559 eligible employers and 1,277 workers responding to the surveys.

In addition, the 2020 prevailing wage finding process identified 81 different combinations of agricultural commodity-activity; 19 of these combinations meet or exceed USDOL thresholds for wage determinations. Of the 19 combinations of commodity-activity that meet USDOL determination thresholds, seven are for apple activities, five are for berry activities, six are for cherry activities and one is for pear activities. Nine commodity-activity wage structures that meet USDOL

determination thresholds increased from the previous 2019 iteration wage finding process. These commodity-activity wage structures are:

- Apple pruning, \$15.83 per hour (+\$2.33 per hour);
- Cripps Pink apple harvesting, \$30.00 per bin (+\$2.00 per bin);
- Berry pruning, \$15.00 per hour (+\$1.50 per hour);
- Blueberry pruning, \$14.50 per hour (+\$0.50 per hour);
- Raspberry harvesting, \$15.30 per hour (+\$2.66 per hour);
- Cherry harvesting, \$0.21 per pound (+\$0.01 per pound);
- Cherry pruning, \$14.50 per hour (+\$0.50 per hour);
- Dark red cherry pruning, \$14.50 per hour (+\$0.50 per hour); and,
- Sweetheart cherry harvesting, \$0.21 per pound (+\$0.01 per pound)

Only one commodity-activity saw a decrease from the previous iteration, which is pear pruning, \$14.50 per hour (-\$0.50 per hour).

Three harvesting activities have moved from hourly wages to piece rates. This includes berries, dark red cherries, and Lapin cherries. This year's survey resulted in the addition of 5 more commodity activities. All the new commodity activities are apple crop activities.

Moreover, no employment practices measures, to include experience requirements, the provision of family housing and minimum productivity standards, passed the prevailing practices or normal and common practices thresholds as the majority of employer survey responses indicated that all three employment practices were either not applicable or skipped the questions.

## 2020 results

### Employer estimates

For estimating the total number of employers to have participated in the production of a given agricultural commodity and employed migrant or seasonal laborers, DATA utilized a log-linear approach to an abundance estimator known as a capture-recapture estimator.<sup>1</sup>

This type of population estimator has three general requirements:

1. At least two capture occasions are necessary to generate an estimate. An example of this would be having at least two agricultural survey iteration results available and in the same structural format;
2. The capture occasions occur over a relatively short period of time; and
3. All occasions of the search procedure (e.g., survey iterations) remain conceptually equivalent.

Additionally, this type of estimator takes three universal assumptions:

1. The population in question is finite;
2. Immigration into the population area is negligible. An example of this would be the number of new agricultural employers established on a yearly basis is small; and
3. Mortality rates are negligible, meaning the number of agricultural employers going out of business is small.

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<sup>1</sup> For more detailed information see: Rivest, L.P. & Baillargeon, S. (2007). "Rcapture: Loglinear Models for Capture-Recapture in R". *Journal of Statistical Software*, 19(5).

Procedurally, this approach to population estimation enables the determination of the probability of employers to experience responding to a survey iteration and therefore the expected number of employers, regarding a given agricultural commodity, can be formulated and re-expressed as a log-linear model. This model re-expression then allows the fitting of specific linear regressions that have the capacity to estimate the number of employers that did not respond to a survey iteration, controlling survey nonresponse and producing a population estimate of the total number of employers participating in the production of a particular agricultural commodity.

During the 2020 survey iteration, 129 distinct and varying levels of agricultural commodities were reported; however, only 19 commodities received high enough reporting frequencies over three survey iterations to warrant employer estimation. *Figure 1* details the models chosen to generate employer populations by agricultural commodity, metrics to assess model fit and 95 percent confidence intervals for each commodity. Employer estimates were generated using 2018, 2019 and 2020 employer survey iterations.

**Figure 1. 2020 employer estimates**

Washington state, 2021

Source: Employment Security Department/DATA, 2018, 2019, 2020 Agricultural Wage and Practices Employer Surveys

Commodity	Estimation model	Employer Estimate	Standard error	Confidence interval (95%)
Apples	Mth Chao	1,052	52.78	960 - 1,168
Apples Cripps Pink	Mth Poisson2	188	83.84	105 - 528
Apples, Fuji	Mth Poisson2	552	137.99	370 - 962
Apples, Gala	Mth Poisson2	1,009	187.23	736 - 1,507
Apples, Golden Delicious	Mth Chao	427	37.89	366 - 517
Apples, Granny Smith	Mt	337	33.40	283 - 417
Apples, Honeycrisp	Mth Poisson2	548	77.40	436 - 753
Apples, Red Delicious	Mth Poisson2	529	112.14	376 - 849
Berries	Mh Chao	330	27.27	286 - 395
Berries, Blueberries	Mth Chao	216	26.71	176 - 285
Berries Raspberries	Mth Chao	174	37.30	123 - 282
Cherries	Mth Poisson2	965	46.25	834 - 1,164
Cherries, Bing	Mth Chao	632	43.05	559 - 730
Cherries, Chelan	Mh Chao	208	29.31	167 - 284
Cherries Dark Red	Mth Poisson2	787	81.01	662 - 988
Cherries Lapin	Mth Chao	250	34.94	198 - 340
Cherries, Rainier	Mth Poisson2	594	120.99	427 - 934
Cherries, Red	Mth Poisson2	537	110.81	385 - 851
Cherries, Skeena	Mth Chao	222	36.42	169 - 320
Cherries, Sweetheart	Mth Chao	259	28.78	214 - 330
Cherries, Yellow	Mth Poisson2	624	127.26	447 - 980
Pears	Mth Chao	641	46.25	563 - 747
Pears, Bartlett	Mth Chao	599	47.12	521 - 708
Pears, Bosc	Mth Chao	382	68.04	281 - 563
Pears D'anjou	Mth Chao	478	75.03	364 - 672

## Employment estimates

The estimation method used for the 2020 survey iteration to estimate total employment by commodity-activity is an iterative proportional fitting procedure, more commonly referred to in survey analysis as a “raking algorithm”.<sup>2</sup>

The raking algorithm chosen to estimate total employment by commodity-activity incrementally post-stratifies employer survey responses so that the marginal totals from the survey match (equal) specified marginal control totals, where the sample marginal totals would be the number of employers responding for a particular commodity and the control marginal total are defined as the employer population estimates detailed previously. The raking procedure then results in the production of calibration weights to adjust reported employment. These weights are then multiplied by the reported employment for a given commodity-activity to generate total estimated employment levels.

Figure 2 shows the resulting total estimated employment levels by commodity-activity for which DATA could generate an estimate and fulfill USDOL determination requirements.<sup>3</sup> Additionally, Figure 2 conveys total reported employment and the necessary integer and percent thresholds outlined by the USDOL.

**Figure 2.** 2020 employment estimates by commodity-activity

Washington state, 2021

Source: Employment Security Department/DATA, 2020 Agricultural Wage and Practices Employer Survey

Commodity	Activity	Total reported employment	Total estimated employment	USDOL percent threshold	Determination threshold	Determination
Apples	Harvesting	5,699	38,668	15%	11,412	Yes
Apples	Pruning	1,901	12,320	15%	3,471	Yes
Apples, Cripps Pink	Harvesting	919	5,239	15%	1,790	Yes
Apples, Cripps Pink	Thinning	680	3,939	15%	1,361	Yes
Apples, Honeycrisp	Harvesting	2,533	14,830	15%	3,637	Yes
Apples, Honeycrisp	Pruning	1,107	7,005	15%	2,440	Yes
Apples, Honeycrisp	Thinning	1,464	9,676	15%	2,599	Yes
Berries	Harvesting	2,516	7,699	15%	1,629	Yes
Berries	Pruning	665	2,219	20%	738	Yes
Berries, Blueberries	Harvesting	1,953	5,116	15%	1,228	Yes
Berries, Blueberries	Pruning	617	1,907	25%	683	Yes
Berries, Raspberries	Harvesting	765	4,016	15%	1,133	Yes
Berries	Harvesting	2,516	7,699	15%	1,629	Yes
Cherries	Harvesting	5,958	29,793	15%	8,556	Yes

<sup>2</sup> For more detailed information see: Lumley, T. (2004). “Analysis of complex survey samples”. *Journal of Statistical Software*, 9(1), 1-19.

<sup>3</sup> For employment estimates that did not meet USDOL thresholds, see Figure A3-1 in Appendix 3.

Commodity	Activity	Total reported employment	Total estimated employment	USDOL percent threshold	Determination threshold	Determination
Cherries	Pruning	783	3,474	15%	1,007	Yes
Cherries, Dark Red	Harvesting	5,941	35,108	15%	9,262	Yes
Cherries, Dark Red	Pruning	851	4,311	15%	1,273	Yes
Cherries, Lapin	Harvesting	1,008	6,477	15%	1,433	Yes
Cherries, Sweetheart	Harvesting	1,721	8,995	15%	2,548	Yes
Pears	Pruning	526	3,076	15%	2,396	Yes

## Prevailing wage rates

*Figure 3* presents prevailing wages for those commodity activities for which DATA could generate an estimate and a determination from the results of the 2020 Agricultural Peak Employment Wage and Practice Employer Survey. When prevailing wages are hourly rates lower than the AEWR, employers must pay hired laborers through the ARS or H-2A program the current AEWR. According to federal guidelines, employers who hire laborers through the ARS or the H-2A program can pay the AEWR or the prevailing piece rate to those laborers engaged in commodity activities for which the prevailing wage is a piece rate. Regardless of which pay rate they use, employers who use the ARS or H-2A program to hire laborers must ensure their average hourly wage rate in a given week is equal to or greater than the AEWR; further details on the prevailing wage finding process can be found in *Appendix 1*.

*Figure 3* contains two combination levels of commodity-activity wage structures, ranging from generalized high levels (e.g., apple-harvesting) to a one step lower level (e.g., apple-red delicious-harvesting) that all qualify for wage determinations.

For piece rate wages, DATA surveyed for hourly earnings guarantee, which is the minimum an employer must pay to an agricultural laborer, regardless of activity or amount of work, and the dimension of the base wage unit. For apple and pear base wage units, reported dimensions and base wages were normalized to meet the industry standard linear bin dimension (47" x 47" x 24.5") recorded and identified in 2020 employer job orders. When a reported linear bin dimension differed from the standard linear bin dimension, the cubic inches for the differing linear bin were calculated and the base wage reported was adjusted proportionally to meet the standard linear bin dimension. When bin dimensions were reported by weight, DATA identified the most common bin weight from the 2020 Agricultural Peak Employment Wage and Practice Employer Survey and equated it to the standard linear bin dimension given the commodity in question. The most common bin weights reported were 900 pounds and 1,000 pounds for apples and pears respectively. This enabled DATA to proportionally adjust the base wage for bin dimensions reported by weight to meet the standard linear bin dimension. The result of normalizing base wages and wage unit dimensions drastically increases the number of employers represented in the prevailing wage finding process, aiding to ensuring a robust distribution of commodity activity wages structures.

**Figure 3. 2020 prevailing wage rates**

Washington state, 2021

Source: Employment Security Department/DATA, 2020 Agricultural Wage and Practices Employer Survey

Commodity	Activity	Prevailing wage	Base wage	Wage unit	Hourly guarantee	Dimension	Bonus amount	Bonus unit
Apples	Harvesting	\$28.26	\$28.26	Bin	\$15.83	47"x47"x24.5"	\$0.00	No bonus
Apples	Pruning	\$15.83	\$15.83	Hour	N/A	N/A	\$0.00	No bonus
Apples, Cripps Pink	Harvesting	\$30.00	\$30.00	Bin	\$16.00	47"x47"x24.5"	\$0.00	No bonus
Apples, Cripps Pink	Thinning	\$0.73	\$0.73	Tree	\$13.50	N/A	\$0.00	No bonus
Apples, Honeycrisp	Harvesting	\$31.76	\$31.76	Bin	\$13.50	47"x47"x24.5"	\$0.00	No bonus
Apples, Honeycrisp	Pruning	\$15.83	\$15.83	Hour	N/A	N/A	\$0.00	No bonus
Apples, Honeycrisp	Thinning	\$15.83	\$15.83	Hour	N/A	N/A	\$0.00	No bonus
Berries	Harvesting	\$0.50	\$0.50	Pound	\$13.50	N/A	\$0.00	No bonus
Berries	Pruning	\$15.00	\$15.00	Hour	N/A	N/A	\$0.00	No bonus
Berries, Blueberries	Harvesting	\$0.50	\$0.50	Pound	\$13.50	N/A	\$0.00	No bonus
Berries, Blueberries	Pruning	\$13.50	\$13.50	Hour	N/A	N/A	\$0.00	No bonus
Berries, Raspberries	Harvesting	\$15.30	\$15.30	Hour	N/A	N/A	\$0.00	No bonus
Cherries	Harvesting	\$0.21	\$0.21	Pound	\$15.83	N/A	\$0.00	No bonus
Cherries	Pruning	\$14.50	\$14.50	Hour	N/A	N/A	\$0.00	No bonus
Cherries, Dark Red	Harvesting	\$0.22	\$0.22	Pound	\$13.50	N/A	\$0.00	No bonus
Cherries, Dark Red	Pruning	\$14.50	\$14.50	Hour	N/A	N/A	\$0.00	No bonus
Cherries, Lapin	Harvesting	\$0.20	\$0.20	Pound	\$13.50	N/A	\$0.00	No bonus
Cherries, Sweetheart	Harvesting	\$0.21	\$0.21	Pound	\$13.50	N/A	\$0.00	No bonus
Pears	Pruning	\$14.50	\$14.50	Hour	N/A	N/A	\$0.00	No bonus

\*N/A means not applicable



## Prevailing or normal and common employment practices

Regulations contained at 20 CFR Part 655, subpart B, and 20 CFR Part 653, subpart F, define the “prevailing” and “normal and common” practices for seasonal U.S. agricultural workers that USDOL may allow in job orders filed through the ARS.<sup>4</sup>

### Prevailing practices

#### Family Housing

DATA analyzed the provision of family housing first by crop-variety-activity to identify if there was notable distinction. As those specific crop-variety-activities received similar responses with regard to the provision of family housing, DATA grouped crop varieties when arraying the data for family housing analysis. For those commodity-activity combinations which had a sufficient sample size DATA found no variation in the results. It follows that the provision of family housing is not a prevailing practice. *Figure 4* illustrates the percent of estimated employment and employers reported in order to dictate a prevailing practice.

**Figure 4.** 2020 provision of family housing\*

Washington state, 2021

Source: Employment Security Department/DATA, 2020 Agricultural Wage and Practices Employer Survey

Commodity	Activity	Housing	Housing amount (per week)	Percent estimated employment reported	Percent estimated employers reported
Apples	Harvesting	Don't know	\$0.00	0.12%	0.40%
Apples	Harvesting	Missing	missing	0.19%	0.40%
Apples	Harvesting	Yes	\$0.00	1.97%	2.70%
Apples	Harvesting	No	N/A	12.32%	20.82%
Apples	Pruning	No	N/A	12.14%	21.39%
Apples	Pruning	Yes	\$0.00	3.29%	3.08%
Apples, Cripps Pink	Harvesting	No	N/A	17.05%	16.07%
Apples, Cripps Pink	Thinning	No	N/A	16.35%	15.03%
Apples, Honeycrisp	Harvesting	No	N/A	12.53%	18.29%
Apples, Honeycrisp	Harvesting	Yes	\$0.00	4.05%	3.58%
Apples, Honeycrisp	Pruning	Yes	\$0.00	4.88%	3.30%
Apples, Honeycrisp	Pruning	No	N/A	10.92%	18.92%
Apples, Honeycrisp	Thinning	No	N/A	10.46%	17.16%
Apples, Honeycrisp	Thinning	Yes	\$0.00	4.18%	3.55%
Berries	Harvesting	No	N/A	26.85%	25.52%
Berries	Harvesting	Yes	\$0.00	5.72%	1.38%

<sup>4</sup> For more information see *Appendix 2* of this report.

Commodity	Activity	Housing	Housing amount (per week)	Percent estimated employment reported	Percent estimated employers reported
Berries	Pruning	Yes	\$0.00	10.14%	2.41%
Berries	Pruning	No	N/A	19.24%	23.49%
Berries, Blueberries	Harvesting	No	N/A	29.71%	23.94%
Berries, Blueberries	Pruning	No	N/A	18.72%	21.12%
Berries, Raspberries	Harvesting	No	N/A	8.34%	11.26%
Cherries	Harvesting	No	N/A	16.64%	20.00%
Cherries	Harvesting	Yes	\$0.00	3.13%	2.33%
Cherries	Pruning	No	N/A	19.69%	21.13%
Cherries	Pruning	Yes	\$0.00	2.48%	1.61%
Cherries, Dark Red	Harvesting	Yes	\$0.00	3.24%	1.94%
Cherries, Dark Red	Harvesting	No	N/A	13.69%	17.69%
Cherries, Dark Red	Pruning	Yes	\$0.00	1.53%	1.32%
Cherries, Dark Red	Pruning	No	N/A	18.20%	18.75%
Cherries, Lapin	Harvesting	No	N/A	8.62%	13.36%
Cherries, Lapin	Harvesting	Yes	\$0.00	6.95%	2.76%
Cherries, Sweetheart	Harvesting	Yes	\$0.00	6.85%	3.78%
Cherries, Sweetheart	Harvesting	No	N/A	12.15%	13.44%
Pears	Pruning	Yes	\$0.00	2.63%	3.40%
Pears	Pruning	No	N/A	14.47%	16.99%

\*N/A means not applicable

## Normal and common practices

### Experience requirements

DATA first calculated experience requirements by commodity-activity to determine if there were differences across specific crop-variety-activities. As all specific crop-variety-activity combinations indicated “no experience requirements,” DATA grouped crop varieties when arraying the data for experience requirement analysis. It was found that there was no variation in experience requirements, and that the majority of employers included in the analysis indicated “no months required,” or skipped the question. *Figure 5* details the percent of estimated employment and employers reported in order to determine a finding by months of experience required to be employed.

**Figure 5.** 2020 experience requirements

Washington state, 2021

Source: Employment Security Department/DATA, 2020 Agricultural Wage and Practices Employer Survey

Commodity	Activity	Experience (months)	Percent estimated employment reported	Percent estimated employers reported
Apples	Harvesting	1	2.14%	3.88%
Apples	Harvesting	0	20.26%	21.36%
Apples	Pruning	0	27.27%	21.95%
Apples, Honeycrisp	Harvesting	0	25.00%	21.05%
Apples, Honeycrisp	Pruning	0	26.74%	26.67%
Apples, Honeycrisp	Thinning	0	26.76%	26.67%
Cherries	Harvesting	0	18.31%	14.47%
Cherries	Harvesting	1	3.16%	5.26%
Cherries	Pruning	1	9.26%	12.90%
Cherries, Dark Red	Harvesting	0	16.08%	14.15%
Cherries, Dark Red	Harvesting	1	2.71%	3.77%
Cherries, Dark Red	Pruning	1	14.29%	16.00%
Pears	Pruning	1	8.79%	7.94%
Pears	Pruning	0	13.39%	14.29%

#### *Minimum productivity standards*

For all commodity-activities with a sufficient sample size to report findings, DATA did not have any occurrences where minimum productivity standards were normal and common, as the majority of employers either skipped the question or responded as a minimum productivity standard was not applicable. *Figure 6* shows the percent of estimated employment and employers reported for given minimum productivity standards.

**Figure 6.** 2020 minimum productivity standards\*

Washington state, 2021

Source: Employment Security Department/DATA, 2020 Agricultural Wage and Practices Employer Survey

Commodity	Activity	Productivity standard	Productivity unit	Productivity frequency	Percent estimated employment reported	Percent estimated employers reported
Apples	Harvesting	5	Bins	Per day	0.75%	0.40%
Apples	Harvesting	N/A	N/A	N/A	12.45%	21.59%
Apples	Harvesting	3	Bins	Per day	0.41%	0.50%
Apples	Pruning	N/A	N/A	N/A	15.02%	24.11%
Apples	Harvesting	N/A	N/A	N/A	31.41%	26.46%

Commodity	Activity	Productivity standard	Productivity unit	Productivity frequency	Percent estimated employment reported	Percent estimated employers reported
Berries	Pruning	N/A	N/A	N/A	29.75%	26.50%
Cherries	Harvesting	N/A	N/A	N/A	16.64%	19.03%
Cherries	Pruning	N/A	N/A	N/A	22.39%	22.74%
Pears	Pruning	N/A	N/A	N/A	16.98%	20.05%
Apples, Cripps Pink	Harvesting	N/A	N/A	N/A	13.44%	16.17%
Apples, Cripps Pink	Thinning	N/A	N/A	N/A	17.27%	17.30%
Apples, Honeycrisp	Harvesting	N/A	N/A	N/A	14.44%	21.63%
Apples, Honeycrisp	Pruning	N/A	N/A	N/A	15.25%	21.85%
Apples, Honeycrisp	Thinning	N/A	N/A	N/A	14.73%	21.88%
Berries, Blueberries	Harvesting	N/A	N/A	N/A	36.28%	23.68%
Berries, Blueberries	Pruning	N/A	N/A	N/A	32.36%	25.00%
Berries, Blueberries	Harvesting	N/A	N/A	N/A	19.05%	13.33%
Cherries, Dark Red	Harvesting	2.5	Lugs	Per hour	0.25%	0.41%
Cherries, Dark Red	Harvesting	N/A	N/A	N/A	14.27%	16.98%
Cherries, Dark Red	Pruning	N/A	N/A	N/A	19.63%	19.83%
Cherries, Lapin	Harvesting	N/A	N/A	N/A	14.68%	14.61%
Cherries, Sweetheart	Harvesting	N/A	N/A	N/A	18.48%	16.80%

\*N/A means not applicable

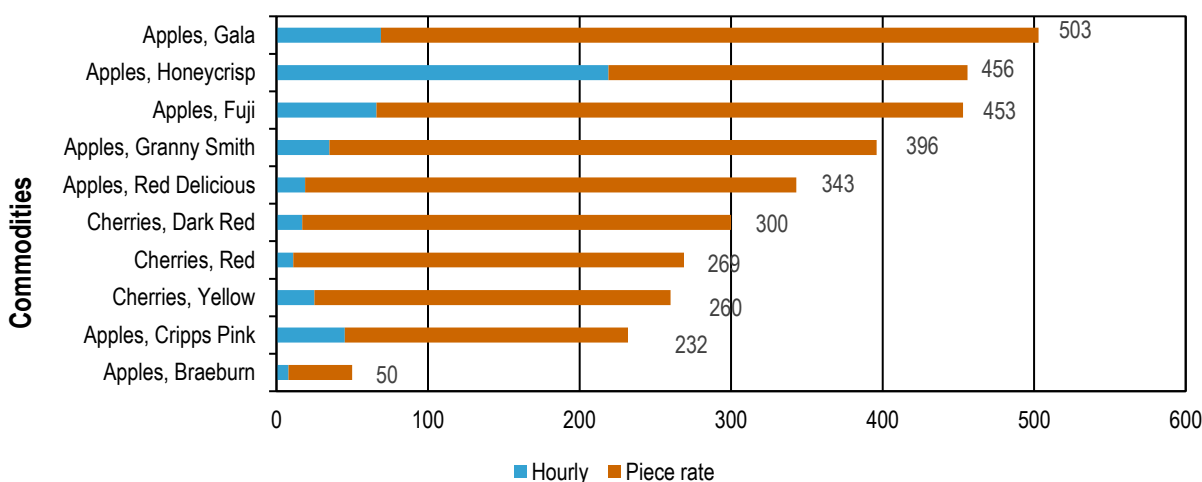
## 2020 Agricultural Peak Employment Wage and Practices Worker Survey Results

Consistent with USDOL guidance, DATA submits ETA 232 forms based solely on employer responses. Due to COVID, the 2020 worker survey field (“paper”) administration was not conducted. The survey was instead conducted via telephone interview, receiving 1,277 responses. Breakdown of agricultural commodities by crop variety and reported wage unit, can be found in *Figure 7*.

**Figure 7.** 2020 worker survey responses by commodity and wage unit

Washington state, 2021

Source: Employment Security Department/DATA, 2020 Agricultural Wage and Practices Employer Survey



### Apple and cherry wage rate comparison by wage structure

In order to draw a comparison between worker and employer wage structure responses, DATA employed the Kruskal-Wallis rank sum test (a non-parametric ANOVA on ranks)<sup>5</sup>. This test does not require the assumption that the distributions follow a normal curve, nor does it assume equal variance among groups (e.g., employer and worker survey responses). Under the assumption that distribution types are similar between groups, the Kruskal-Wallis test compares the medians of the groups while it compares mean ranks when distribution shapes differ between them: if the samples share a distribution with the same shape, then the Kruskal-Wallis test can be considered to compare the medians; however, if the samples come from different distributions (e.g., one is left skewed, one is right skewed or one has a much larger variance than the other), then the Kruskal-Wallis test compares relative position of the mean in which a rejection of the null hypothesis indicates the central tendency of the sample differ between groups. For apple and cherry harvest, a standard significance level of 0.01 was chosen to assess the results of the Kruskal-Wallis test.

As *Figure 8* delineates, most commodity-activity wage rate tests fail to reject the null hypotheses. More precisely, 14 of 22 wage rate tests provide insufficient evidence to reject the claim that the response distributions are equal between employers and workers. In contrast, 8 of the wage rate tests reject the null hypotheses, meaning there is sufficient evidence to reject the claim that the response distributions are equal between employers and workers.

<sup>5</sup> For more information see: Hollander, M. & Wolfe, D. (1973), "Nonparametric Statistical Methods". New York: John Wiley & Sons. Pages 115–120

**Figure 8.** Comparison of 2020 employer and worker harvesting wage rates and wage structures

Washington state, 2021

Source: Employment Security Department/DATA, 2020 Agricultural Wage and Practices Employer Survey

Commodity wage structure	P Value	Results	Employer median	Worker median
Apples, Ambrosia, per lug-bin	0.725554	Fail to reject null	\$28.00	\$28.00
Apples, Braeburn, per lug-bin	0.000006	Reject null	\$22.00	\$26.00
Apples, Cosmic Crisp, per hour	0.428225	Fail to reject null	\$16.00	\$15.83
Apples, Cosmic Crisp, per lug-bin	0.522295	Fail to reject null	\$32.00	\$30.00
Apples, Cripps Pink, per lug-bin	0.038573	Fail to reject null	\$30.00	\$30.00
Apples, Envy, per lug-bin	0.056379	Fail to reject null	\$30.00	\$30.00
Apples, Fuji, per hour	0.005570	Reject null	\$15.00	\$15.44
Apples, Fuji, per lug-bin	0.000000	Reject null	\$28.92	\$30.00
Apples, Gala, per hour	0.736721	Fail to reject null	\$15.00	\$15.80
Apples, Gala, per lug-bin	0.334741	Fail to reject null	\$28.00	\$28.00
Apples, Granny Smith, per hour	0.228242	Fail to reject null	\$15.00	\$15.69
Apples, Granny Smith, per lug-bin	0.000008	Reject null	\$26.00	\$28.00
Apples, Honeycrisp, per hour	0.927405	Fail to reject null	\$15.83	\$15.83
Apples, Honeycrisp, per lug-bin	0.000000	Reject null	\$30.00	\$37.00
Apples, Jazz, per lug-bin	0.462863	Fail to reject null	\$25.00	\$32.00
Apples, Red Delicious, per lug-bin	0.490109	Fail to reject null	\$22.00	\$22.75
Apples, Sugarbee, per hour	0.000000	Reject null	\$15.83	\$15.00
Apples, Sugarbee, per lug-bin	0.208827	Fail to reject null	\$30.00	\$38.00
Cherries, Red, per hour	0.223897	Fail to reject null	\$15.83	\$15.00
Cherries, Red, per lug-bin	0.000059	Reject null	\$4.25	\$4.00
Cherries, Yellow, per hour	0.128540	Fail to reject null	\$15.83	\$15.00
Cherries, Yellow, per lug-bin	0.000000	Reject null	\$5.50	\$6.00

### Apple and cherry employment practices comparison

For employment practices, DATA calculated the percent of workers reporting a provision of family housing, experience requirements and minimum productivity standards. DATA held this percent to the same standards as the employer responses and determined if it fit either the double-majority rule or the 33 percent indicative of a normal and common practice. *Figure 9*, *Figure 10* and *Figure 11* detail the percent of employers reporting and workers reporting to have indicated employment practices. Additionally, none of the worker or employer responses for employment practices were high enough to claim a prevailing practice or a practice normal and common.

**Figure 9.** Comparison of 2020 employer and worker family housing responses\*

Washington state, 2021

Source: Employment Security Department/DATA, 2020 Agricultural Wage and Practices Employer Survey

Commodity	Housing	Housing cost (per week)	Percent workers reporting	Percent employers reporting
Apples	No	N/A	96.39%	83.87%
Apples	Yes	\$0	1.68%	10.89%
Cherries	No	N/A	93.02%	88.66%
Cherries	Yes	\$0	3.38%	10.31%

\*N/A means not applicable

**Figure 10.** Comparison of 2020 employer and worker experience requirement responses

Washington state, 2021

Source: Employment Security Department/DATA, 2020 Agricultural Wage and Practices Employer Survey

Commodity	Experience (months)	Percent workers reporting	Percent employers reporting
Apples	0	90.61%	78.57%
Apples	1	5.19%	14.29%
Cherries	0	89.17%	64.71%
Cherries	1	6.88%	23.53%

**Figure 11.** Comparison of 2020 employer and worker productivity responses\*

Washington state, 2021

Source: Employment Security Department/DATA, 2020 Agricultural Wage and Practices Employer Survey

Commodity	Productivity	Standard	Productivity unit	Productivity frequency	Percent workers reporting	Percent employers reporting
Apples	N/A	N/A	N/A	N/A	74.78%	87.50%
Apples	Yes	5	Bin	Per day	5.41%	1.61%
Apples	Yes	3	Bin	Per day	3.57%	2.02%
Cherries	N/A	N/A	N/A	N/A	88.03%	85.57%

\*N/A means not applicable

# Appendices

## Appendix 1: Prevailing wage rate finding process

### Prevailing wage finding process

ETA Handbook 385 provides guidelines for determining the prevailing wage in each agricultural activity or occupation. According to federal guidelines and found in *Appendix figure A1-1*, the suggested sample size in terms of the percentage of total domestic employment decreases as the level of total domestic employment in each activity increases.

**Appendix figure A1-1.** U.S. Department of Labor prevailing wage rate threshold requirements  
Washington state, 2021

Source: U.S. Department of Labor, Employment and Training Administration, Handbook No. 385: p. I-114

Level of estimated employment in commodity activity area	Percent needed to make a determination
100 – 349	100%
350 – 499	60%
500 – 799	50%
800 – 999	40%
1,000 – 1,249	35%
1,250 – 1,599	30%
1,600 – 2,099	25%
2,100 – 2,999	20%
3,000 or more	15%

After collecting wage information for agricultural commodities and activities, DATA calculates the prevailing wage rate according to one of two rules. The first is the 40 percent rule, which states that if there is one pay rate paid to 40 percent or more of domestic seasonal employment for a given commodity activity, then that rate becomes the prevailing wage. If two separate wage rates are paid to 40 percent of domestic seasonal employment for a given commodity activity, then both are considered prevailing.

The second is the 51 percent rule. This rule requires arraying wage rates in descending order and counting the cumulative level of domestic seasonal employment, until 51 percent of domestic seasonal employment is covered. If there is not a single unit of payment (e.g., hour, bin) SESAs are to determine which payment unit is applicable to the largest level of employment and then determine the prevailing wage rate according to either the 40 percent rule or the 51 percent rule.

As required by USDOL, DATA identified the prevailing wage rates based on responses to the 2020 employer survey according to federal guidelines contained in ETA Handbook 385. Because a raking algorithm was used to estimate the level of total domestic seasonal employment, the total estimated level of domestic seasonal employment was used to identify and establish the prevailing wage rates.



## Appendix 2: Estimating prevailing or normal and common practices

Per ETA Handbook 398, SESAs are required to determine the conditions of employment for U.S. seasonal workers in each agricultural activity surveyed. This portion of the survey is to ensure employers who hire foreign workers, “conform the job offer to conditions and standards which are ‘prevailing,’ ‘normal,’ or ‘common’ practices or standards of other employers who hire U.S. workers in the same area and in the same occupation” (ETA Handbook 398, p. II-5).

The concept of a “prevailing practice” has a specific quantitative threshold. If at least 50 percent of all employers who also employ at least 50 percent of all U.S. workers in a given activity engage in a practice, then it is prevailing.<sup>6</sup> This is referred to as the “double-majority” rule. The following practices are subject to the prevailing threshold:

1. The provision of family housing
2. Transportation and subsistence costs
3. Frequency of payment

However, the quantitative threshold for normal and common standards is not specified in ETA Handbook 398. Instead, normal and common are defined as:

...situations which may be less than prevailing, but which clearly are not unusual or rare. The degree to which a practice is engaged in (or a benefit is provided) should be determined to be close to what is viewed (and measured) as “prevailing,” but the degree by which the practice or benefit is measured and degree of proof needed to establish its acceptability for H-2A purposes is not as formal or stringent as “prevailing” calls for (ETA Handbook 398, p. II-7).

When setting the quantitative threshold for normal and common practices or benefits, USDOL’s Regional Administrators (RAs) use their discretion. The following practices are subject to the “normal and common” threshold:

1. Minimum productivity standards
2. Provision of tools and equipment
3. Occupational qualifications (e.g., experience requirements)
4. Positive recruitment of U.S. Nationals.

SESAs do not use the same sampling universe for every practice surveyed to make a prevailing or normal and common determination. Of the practices listed previously, SESAs are required to survey both H-2A and non-H-2A employers about the following:

1. Provision of tools and equipment
2. Provision of family housing
3. Frequency of payment

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<sup>6</sup> Regulatory definitions, see: 20 CFR 655.103(b) and 20 CFR 655.1300(c).

SESAs are required to survey only non-H-2A employers concerning the following practices:<sup>7</sup>

1. Transportation and subsistence costs
2. Positive recruitment of U.S. Nationals
3. Occupational qualifications

The employers to be surveyed and the threshold to be used are less clear for productivity standards. Additional guidance from USDOL led us to survey both H-2A and non-H-2A employers, and to apply the “normal and common” threshold, for productivity standards.

### **Prevailing practices**

According to USDOL guidance, a practice or standard must apply to half of all employers who also hire half of all workers in our sample in order to be considered prevailing (the double-majority rule). The only practice or benefit included in the 2020 survey that is subject to the prevailing threshold is the provision of family housing. For our prevailing practice recommendations, we used the same sample size rules used to estimate prevailing wages.

### *Family housing*

DATA, following guidance from USDOL, surveyed for all family housing offered and the cost associated on a weekly basis. ETA Handbook 398 states:

In arriving at a determination as to whether the provision of family housing is a prevailing practice, RAs and SESAs must look beyond the threshold question on the basic availability of housing which is suitable for families. They must also determine whether it is the active practice of employers to offer this housing as a benefit to migrant workers who need and request it.

### *Transportation and subsistence costs and frequency of payments*

ESD did not include questions about transportation and subsistence costs on the 2019 or 2020 survey. ETA Handbook 398 states the following about transportation and subsistence costs:

H-2A employers must offer to advance transportation and subsistence costs (or otherwise provide them) to U.S. workers when it is the prevailing practice of non-H-2A employers in the area and occupation to do so (or when transportation is advanced for H-2A workers) (ETA Handbook 398 p. II-10).

In addition, 20 CFR 655.1305(e)5 states:

During the period of employment that is the subject of the labor certification application, the employer will... Provide transportation in compliance with all applicable Federal, State or local laws and regulations between the worker’s living quarters (i.e., housing provided by the employer under 20 CFR 655.104(d)) and the employer’s worksite without cost to the worker.

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<sup>7</sup> For more information, see: 20 CFR 655.122, § 655.150-158, and § 655.1305.

It is our understanding that the language in ETA Handbook 398 and 20 CFR 655.1305 require employers to provide advance transportation and subsistence costs.<sup>8</sup> Therefore, we did not survey employers about the advancement of transportation or subsistence costs in the 2018 survey.

DATA also did not include questions related to the frequency of payment on the 2019 or 2020 survey. According to 20 CFR 655.122(m):

The employer must state in the job offer the frequency with which the worker will be paid, which may be at least twice monthly or according to the prevailing practice in the area of intended employment, whichever is more frequent.

Due to the language included in the regulation, making reference to a minimum requirement of twice a month, DATA decided to not include questions, beginning on the 2018 survey, related to the frequency of payment.

### **Normal and common practices**

There is no quantitative threshold for normal or common practices specified in ETA Handbook 398. As a result, we followed advice received in an email communication, dated January 5, 2016, with the CNPC to arrive at our normal and common practices recommendations for minimum productivity standards and experience requirements.

According to this guidance, at least 33 percent of employers in a sample must report engaging in a practice before the practice is considered “normal and common.” However, DATA received no instruction regarding the percentage of employers who must use a specific standard (e.g., 4 bins/day, or 3 months of experience) in order to determine maximum allowable standards in H-2A job orders. As a result, DATA decided that the next step should be to determine the most common quantifiable standard reported.

### **Minimum productivity standards**

For all commodity-activities with a sufficient sample size to report findings, DATA did not have any occurrences by commodity-activity where minimum productivity standards were normal and common, as the majority of the employers either skipped the question or answered “no.”

### **Experience requirements**

ETA Handbook 398 states that experience requirements (occupational qualifications) are subject to the normal and common threshold.

In determining the appropriateness of occupational qualification, the regional office should consider normal, accepted practice of non-H-2A employers in the same or comparable occupations and crops as a first step (ETA Handbook 398, pp. II-13 – II 14).

### **Reference checks**

As of April 2020, there have been no requirements or guidelines that require a normal and common practice determination for employee references. DATA was notified that USDOL previously challenged employers on the reference requirement issue and lost the case before an administrative law judge. The decision indicated that, if experience requirements are deemed “normal and

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<sup>8</sup> In addition, see: 20 CFR 655.122.

common,” the USDOL must allow employers to require a reference in their job orders when they choose to do so. Although DATA collected information on reference checks for the 2015 survey iteration, given the administrative law judge decision that employers must be allowed to require references when they chose to, DATA did not include the question for the 2019 or 2020 surveys.

### Provision of tools and the positive recruitment of U.S. Nationals

DATA did not include questions about the provision of tools on the 2020 survey. ETA Handbook 398 states the following about the provision of tools:

Normally, employers must provide, without charge, all tools, supplies and equipment to the workers, if they are required to perform the tasks described in the job offer ... Absent a specific, justifiable, approved request from an employer, the RA must require that employers provide necessary tools, supplies and equipment without charge to the worker (ETA Handbook 398 pp. II-9).

In addition, 20 CFR 655.122(f) states that, “The employer must provide to the worker, without charge or deposit charge, all tools, supplies and equipment required to perform the duties assigned.”

DATA also did not include questions on the 2019 or 2020 surveys related to the positive recruitment of U.S. Nationals. Since the majority of employers report bypassing the ARS for the recruitment of domestic workers, almost all job orders received in the state of Washington go through the H-2A system. We know that the recruitment of U.S. Nationals is a requirement of the H-2A system. Therefore, we did not survey employers about the positive recruitment of U.S. Nationals.

## Appendix 3: Supplemental data

**Appendix figure A3-1.** 2020 employment estimates by commodity-activity that did not meet USDOL thresholds Washington state, 2021

Source: Employment Security Department/DATA, 2020 Agricultural Wage and Practice Employer Survey

Commodity	Activity	Total reported employment	Total estimated employment	USDOL percent threshold	Determination threshold	Determination
Apples	Graft tie-up	(D)	(D)	(D)	(D)	No
Apples	Missing	(D)	(D)	(D)	(D)	No
Apples	Packing	(D)	(D)	(D)	(D)	No
Apples	Spraying	(D)	(D)	(D)	(D)	No
Apples	Thinning	2,272	16,512	15%	14%	No
Apples, Cripps Pink	Pruning	293	1,663	25%	18%	No
Apples, Fuji	Harvesting	1,673	15,250	15%	11%	No
Apples, Fuji	Pruning	485	4,262	15%	11%	No
Apples, Fuji	Thinning	569	5,351	15%	11%	No
Apples, Gala	Harvesting	3,235	35,219	15%	9%	No
Apples, Gala	Pruning	859	8,028	15%	11%	No
Apples, Gala	Thinning	1,112	11,807	15%	9%	No

Commodity	Activity	Total reported employment	Total estimated employment	USDOL percent threshold	Determination threshold	Determination
Apples, Honeycrisp	Spraying	(D)	(D)	(D)	(D)	No
Berries	Move cranberries off field and process	(D)	(D)	(D)	(D)	No
Berries	Packing	321	969	40%	33%	No
Berries, Blueberries	Packing	58	213	100%	27%	No
Berries, Raspberries	Packing	275	1,323	30%	21%	No
Berries, Raspberries	Pruning	150	1,094	35%	14%	No
Cherries	Checking	(D)	(D)	(D)	(D)	No
Cherries	Don't know	(D)	(D)	(D)	(D)	No
Cherries	Fruit checker	(D)	(D)	(D)	(D)	No
Cherries	Missing	(D)	(D)	(D)	(D)	No
Cherries	Thinning	73	323	100%	23%	No
Cherries	Variety	(D)	(D)	(D)	(D)	No
Cherries, Dark Red	Don't know	(D)	(D)	(D)	(D)	No
Cherries, Dark Red	Missing	(D)	(D)	(D)	(D)	No
Cherries, Dark Red	Thinning	(D)	(D)	(D)	(D)	No
Cherries, Dark Red	Variety	(D)	(D)	(D)	(D)	No
Cherries, Lapin	Pruning	152	1,098	35%	14%	No
Cherries, Lapin	Thinning	(D)	(D)	(D)	(D)	No
Cherries, Rainier	Don't know	(D)	(D)	(D)	(D)	No
Cherries, Rainier	Harvesting	1,769	16,986	15%	10%	No
Cherries, Rainier	Missing	(D)	(D)	(D)	(D)	No
Cherries, Rainier	Pruning	244	2,130	20%	11%	No
Cherries, Rainier	Thinning	(D)	(D)	(D)	(D)	No
Cherries, Red	Checking	(D)	(D)	(D)	(D)	No
Cherries, Red	Don't know	(D)	(D)	(D)	(D)	No
Cherries, Red	Harvesting	3,301	23,736	15%	14%	No
Cherries, Red	Pruning	422	2,875	20%	15%	No
Cherries, Red	Thinning	(D)	(D)	(D)	(D)	No
Cherries, Skeena	Checking	(D)	(D)	(D)	(D)	No

Commodity	Activity	Total reported employment	Total estimated employment	USDOL percent threshold	Determination threshold	Determination
Cherries, Skeena	Harvesting	1,020	8,356	15%	12%	No
Cherries, Skeena	Pruning	163	1,487	30%	11%	No
Cherries, Skeena	Thinning	(D)	(D)	(D)	(D)	No
Cherries, Sweetheart	Checking	(D)	(D)	(D)	(D)	No
Cherries, Sweetheart	Pruning	186	1,031	35%	18%	No
Cherries, Sweetheart	Thinning	(D)	(D)	(D)	(D)	No
Cherries, Yellow	Don't know	(D)	(D)	(D)	(D)	No
Cherries, Yellow	Harvesting	1,956	18,331	15%	11%	No
Cherries, Yellow	Missing	(D)	(D)	(D)	(D)	No
Cherries, Yellow	Pruning	264	2,256	20%	12%	No
Cherries, Yellow	Thinning	(D)	(D)	(D)	(D)	No
Pears	Don't know	(D)	(D)	(D)	(D)	No
Pears	Harvesting	2,702	21,263	15%	13%	No
Pears	Thinning	370	4,054	15%	9%	No
Pears, Bartlett	Harvesting	1,967	19,488	15%	10%	No
Pears, Bartlett	Pruning	452	3,151	15%	14%	No
Pears, Bartlett	Thinning	246	1,291	30%	19%	No
Pears, Danjou	Don't know	(D)	(D)	(D)	(D)	No
Pears, Danjou	Harvesting	1,365	13,194	15%	10%	No
Pears, Danjou	Pruning	375	2,741	20%	14%	No
Pears, Danjou	Thinning	141	3,538	15%	4%	No

\*(D) indicates data has been suppressed due to non-disclosure policies and regulations set at both the state and federal level.