

# U.S. Economic Impact Fresh Produce & Floral Industries

AUGUST 2022





IFPA is the largest industry association representing the interests, individuals, and organizations across the global supply chain of all sizes and specialties. The organization is positioned to serve as a resource and partner for the media, policymakers, and change leaders who are invested in the solutions the industry has the power to provide.





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# Foreword

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IFPA commissioned Kleinhenz & Associates to provide a comprehensive overview of the economic and employment impact represented by the entire fresh produce and floral supply chains. The fresh produce and floral industries encompass a diverse range of activities and products that extends beyond farmers and producers to include employment in marketing and distribution, retail establishments, and food services. Utilizing government and industry data, and paired with IMPLAN, a most-advanced economic impact modeling application, this report demonstrates that an estimated 2.2 million total jobs are supported by the fresh produce and floral industries, which includes the indirect and induced impacts of the direct employment.

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Fresh produce & floral support  
**2.2 million total jobs,**  
**\$120.1 billion in labor income.**

After consultation with advisory economists at IMPLAN, as well as input from industry experts, it was determined that using the 2019 IMPLAN data and model would be best to represent the industry. In 2019, the industry was operating at a normal, pre-COVID pace with typical buying and selling channels and a direct employment level estimated to be 1,166,616 jobs.

While the most current IMPLAN data available for the entire economy is from 2020, taking measure of the industry's economic footprint in that timeframe would yield an abnormal result and not represent strengths found in a normal economy. The industry was reeling from the effects of the COVID pandemic and its employment dropped 3.6 percent to 1,126,277 jobs. Like other segments of the economy, normal industry supply chains, as well as distribution channels, were severely disrupted. Supply channels for restaurants found virtually no markets, while supply channels for groceries were overwhelmed. Trucking and container transportation were at a premium which affected the industry along with the entire economy.

For the first six months of 2022, the industry demonstrated signs of recovery. Employment in the first half of 2022 is nearly identical to employment in the first half of 2019, differing by less than 1 percent. This difference from a modeling perspective indicates that the economic estimates using the



2019 model data may be largely reflective of the 2022 industry economy. By comparison, employment levels for the first six months of 2020 and 2021 are 2.9 and 3.2 percent below 2019 employment levels, respectively.

The estimated economic impact of the industry on the U.S. economy is represented in 2022 dollars. This ensures that the results reflect the growth in wages and output (sales) over the three years since 2019. The adjusted results do not capture the full inflation as witnessed in 2022 but do provide a best approximation of industry impacts.

## Fresh Produce and Floral Industries Share of BLS-reported Employment

To conduct a thorough economic analysis, a clear definition of the industry is required. The overall industrial sphere for fresh flowers and produce was analyzed and expanded from previous efforts to provide a more comprehensive view of all the products and services that define today's industry. This effort resulted in determining a total direct employment. The employment definition provides a complete picture of the scope and scale of industry supply chains using employment figures compiled from a variety of data sources. Employment estimates are full-time equivalent jobs. The Bureau of Labor Statistics (BLS) Quarterly Census of Employment and Wages (QCEW) were used to obtain 2019 base industry employment.

In the North American Industry Classification System (NAICS), the fresh produce and floral supply industry is defined by the NAICS codes.

### NAICS Codes that Include Fresh Produce and Floral Supply Industry-relevant Employment

Wholesale and Retail			
<b>42448</b>	Fruit and vegetable wholesalers	<b>44523</b>	Fruit and vegetable markets
<b>42493</b>	Nursery stock and florists' supplies wholesalers	<b>4452</b>	Retail grocery stores (produce section)
Food Service			
<b>71</b>	Arts and entertainment (food service portion)	<b>72</b>	Accommodations, food services, and restaurants (food service portion)
Production			
<b>1112</b>	Vegetable production (farm)	<b>1113</b>	Fruit production (farm)
<b>1114</b>	Floriculture production and greenhouse nursery (farm)	<b>115115</b>	Support for crops (labor contractors/crew leaders)



## FOREWORD

After identifying the proper NAICS codes to use as a base, the appropriate portion of each QCEW industry sector to include as industry employment was discerned. Estimated portions were based on secondary data and industry expert estimates. Estimates of self-employment as well as exempted workers (from unemployment insurance) were made using secondary data. In the case of food services, BLS occupational matrices were employed to provide a baseline estimate of food-related workers. Several sources of information were employed to gather data on production workers. Sources include the 2017 US Agricultural Census; USDA Economic Research Service Vegetable and Pulse articles; farm labor articles published by the Wilson Center; National Agricultural Statistical Services (NASS) data found across annual yearbook reports on fruits and vegetables and in USDA Economic Research Articles; and correspondence and interviews carried out with multiple USDA officials. Such sources of information provided estimates of undocumented, and therefore under-counted, workers as well as information regarding the number of workers credited with providing fresh fruits and vegetables.

A desegregation of the business lines into sub-sector employment was required to match industry codes used in the IMPLAN model. Production employment, for example, is broken down into four components of Vegetable and Melon Farming, Fruit Farming, Floriculture, and Farm Labor.

### Fresh Produce and Floral Supply Employment by IMPLAN Industries

	IMPLAN Industries	2019	2021 (most current)
Wholesale	Grocery And Related Product	100,149	91,464
	Floral Merchant	22,635	22,258
Retail	Grocers	314,927	320,330
Production	Vegetable And Melon Farming	143,416	139,773
	Fruit Farming	309,757	300,402
	Floriculture Production	41,827	41,024
	Farm Labor	127,606	123,898
Food Services	Entertainment, Museums, Etc.	2,805	2,278
	Restaurants, Accommodations	103,495	88,665
	<b>Total</b>	<b>1,166,616</b>	<b>1,130,092</b>





# Executive Summary

The U.S. fresh produce and floral industries support jobs in every state and encompass a diverse range of activities and products that extends beyond farmers and producers, including marketing and distribution, retail, and food services.

Combining direct and secondary spending, the fresh produce and floral industries' operations supported 2.2 million full-time and part-time jobs, provided \$120.1 billion in labor income (including wages and salaries, benefits, and proprietors' income), and added \$339.4 billion to the national output in 2022. In addition, federal, state, and local taxes generated by the industries, and the spin-off industry sales the activity generates, total \$43.7 billion per year.

Nearly 1.2 million jobs are directly tied to the industries' 2022 operations. The absolute number of employees involved in the fresh produce and floral industries has declined by 4 percent over the past five years – from 1.18 million workers in 2017 to 1.13 million in 2021.

Examining total employment in detail shows over 600,000 jobs, or 54 percent of the industries, are workers in the production sector. Wholesale and retail employment, which includes a variety of fresh fruit and floral operations, reached 434,000 and accounts for 38 percent of the industries. The smallest employment within the industries is the food service sector.

The portion of the fresh produce and floral industries represented by floral firms accounts for 92,176 direct jobs, or 8 percent within the industry, and generates an additional 117,093 indirect and induced jobs for a total economy-wide job count of 209,269. Due to industry employment and its economic impacts, total wages amount to \$12.5 billion per year on economy-wide sales of \$38.2 billion. Of the \$38.2 billion, \$14.9 billion are floral industry direct sales.

The largest employer of the fresh produce and floral industries is the fruit and vegetable sector with 1,074,441 workers or 92 percent of the industry employment. Counting the direct, indirect, and induced impacts, the fruits and vegetable sector's total employment impact on the national economy in 2022 amounted to 2,025,335 full-time and part-time jobs and accounted for \$301.2 billion in annual sales and total wages of \$107.7 billion.

The industries' economic impact reaches all 50 states and the District of Columbia. The impact varies from state to state, depending on factors such as each state's industry mix, wage structure, spending and saving patterns, and connections to other economies. Twenty-nine states have more than 10,000 jobs attributable to the industry; only ten states have less than 4,000.







# Fresh Produce & Floral Industries

## Seasonality

During the fourth quarter of 2021, industry employment totaled 1.1 million people. There is notable seasonality to total industry employment by about 10 percent during the peak third quarter of the year. However, the annual employment average has remained relatively consistent since 2019, fluctuating between 1.1 million and 1.2 million workers.

## Fresh Produce and Floral Industries Employment by Quarter, 2019–2021

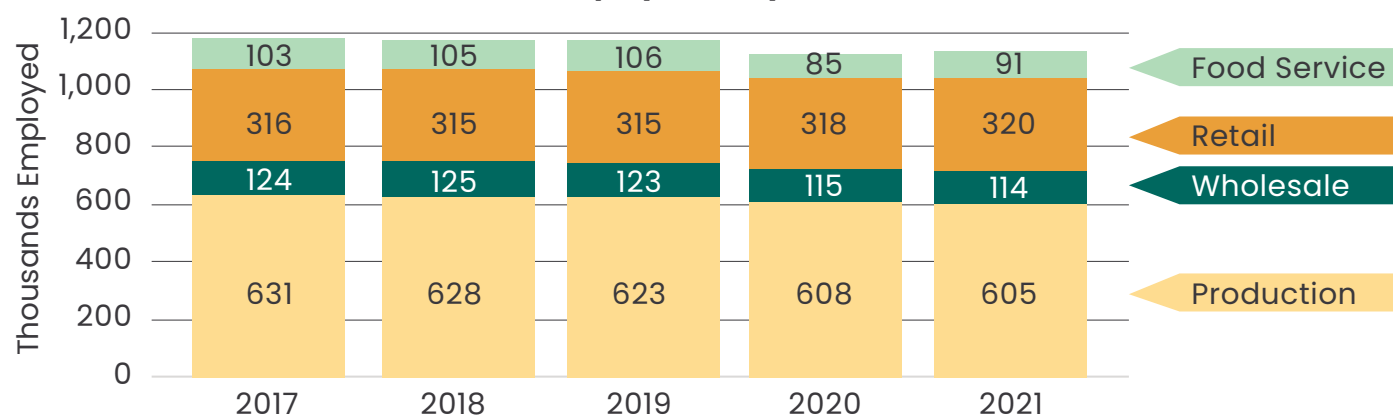
Industry Employment			
2019	Q1	1,084,420	
	Q2	1,189,354	
	Q3	1,234,078	
	Q4	1,158,613	
2020	Q1	1,086,041	
	Q2	1,121,453	
	Q3	1,179,893	
	Q4	1,117,721	
2021	Q1	1,055,581	
	Q2	1,145,135	
	Q3	1,190,502	
	Q4	1,128,889	

## Employment by Business Sector

When segmented along business sectors, production firms employ the most workers. 605,000 employees, or 54 percent of all employees, were employed on farms growing fruits, vegetables, and flowers in 2021. There is a minimal decline in jobs between 2017 and 2021, with perhaps the exception of the food service business sector. Food service went from employing 103,000 industry workers in 2017 to employing only 91,000 workers in 2021, a 12.0 percent reduction in jobs for that business line.



### Fresh Produce and Floral Industries Employment by Business Sector, 2017 – 2021



This provides an industry comparison as to the relative magnitude of employment within the fresh produce and floral supply industries versus select 4-digit food production and manufacturing industries.

### Comparative Magnitude of Direct Employment, 2019

Sector	Employment
<b>Fresh Produce and Floral Supply Industry Total</b>	<b>1,166,617</b>
<b>Fruits and Vegetables Production</b>	<b>580,779</b>
Bakeries and Tortilla Manufacturing	313,653
<b>Fruit and Vegetable Retail</b>	<b>287,213</b>
Beverage Manufacturing	276,512
<b>Fruit and Vegetable Preserving and Specialty</b>	<b>173,033</b>
Cattle Ranching and Farming	159,312
Dairy Product Manufacturing	152,761
<b>Fruits and Vegetables Food Service</b>	<b>106,300</b>
<b>Fruits and Vegetables Wholesale</b>	<b>100,149</b>
Sugar and Confectionery Product Manufacturing	76,589
Poultry and Egg Production	45,973
<b>Floral Production</b>	<b>41,827</b>
Agricultural Chemical Manufacturing	36,053
<b>Floral Retail</b>	<b>27,714</b>
<b>Floral Wholesale</b>	<b>22,635</b>

Source: Bureau of Labor Statistics, Quarterly Census of Employment and Wages (QCEW)





# National Economic Impact

## Total Economic Impact

The total economic impact measured includes:

- the direct impact (the jobs, labor income, and output within the U.S. fresh produce and floral industries)
- the indirect impact (the jobs, labor income, and output occurring in other industries due to the fresh produce and floral supply industries' purchases of inputs)
- the induced impact (the jobs, labor income, and output resulting from household spending of income earned either directly or indirectly from the industries' economic activities).

In this analysis, the change of output, jobs, and wage income is determined by the change in employment required to meet the final demand for the fresh produce and floral supply industries businesses. (See Appendix for more details)

Kleinhenz & Associates estimates that at the national level, combining all spending, the operations of the fresh produce and floral industries supported 2.2 million full-time and part-time jobs, provided \$120.1 billion in labor income (including wages and salaries, benefits, and proprietors' income), and added \$339 billion to the national output in 2022. The \$339 billion reflects the impact of direct sales of the U.S. fresh produce and floral industries, the economic impact of suppliers that support the food and agriculture industries, as well as that of downstream industries that are supported by the spending of those directly employed by the fresh produce and floral industry and by those employed by firms dependent on those industries.

In addition, federal, state, and local taxes generated by the industries, and the spin-off industry sales their activity generates, total \$43.7 billion per year.

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The produce & floral industries added **\$339 billion** to the national output in 2022.

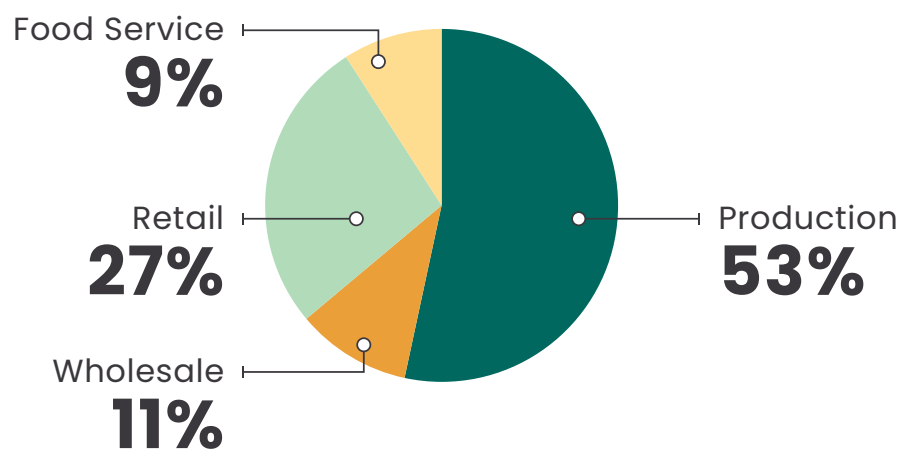


## Fresh Produce and Floral Supply Industry Economic Impact by Business Line, 2019 (2022\$)

Wages and output are in millions of dollars

	Production	Wholesale	Retail	Food Service	Total Produce & Floral Industries Economic Impact
<b>Employment</b>					
Direct Employment	622,606	122,784	314,927	106,300	1,166,617
Total Employment	1,158,003	371,902	529,740	174,959	2,234,604
<b>Wages</b>					
Direct Wages	\$26,364	\$10,339	\$12,274	\$3,462	\$52,439
Total Wages	\$58,584	\$27,452	\$26,024	\$8,078	\$120,138
<b>Output (Sales)</b>					
Direct Output	\$66,412	\$29,695	\$26,623	\$9,165	\$131,895
Total Output	\$164,060	\$80,576	\$70,679	\$24,050	\$339,365
<b>Tax Revenues</b>					
Tax Total	\$19,325	\$10,424	\$10,672	\$3,249	\$43,670

## U.S. Fresh Produce and Floral Industries Employment Shares by Business Sector, 2019





## NATIONAL ECONOMIC IMPACT

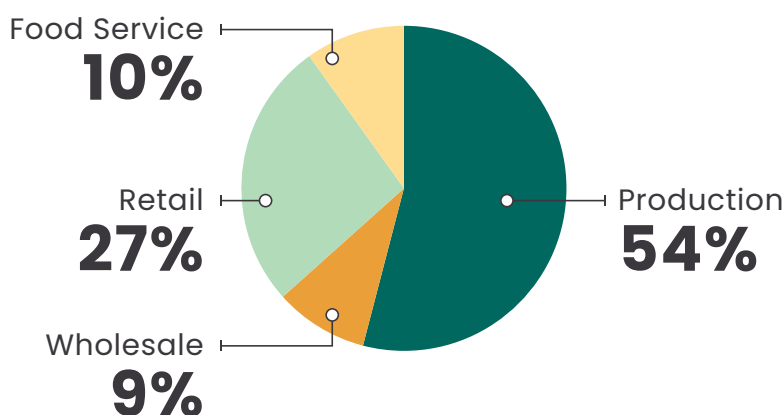
### Fruit and Vegetable Industry

Counting the direct, indirect, and induced impacts, the fruits and vegetable industry total employment impact on the national economy in 2022 amounted to 2,025,335 full-time and part-time jobs, and accounted for \$301.2 billion in annual sales. The estimated direct employment of fruit and vegetable production firms within the industry is 580,779 jobs. By including indirect and induced effects, the production sector generates further impacts of 494,802 jobs for a total economy-wide job impact of 1,075,581 jobs that earn \$54.5 billion in wages per year. Federal, state, and local taxes generated by the fresh produce and floral supply industry, and the spin off industry sales its activity generates, total \$38.1 billion per year.

### Fruits and Vegetables Industry Economic Impact by Business Sector, 2019 (2022\$)

	Production	Wholesale	Retail	Food Service	Total Fruit & Vegetable Industry Economic Impact
<b>Employment</b>					
Direct Employment	580,779	100,149	287,213	106,300	1,074,441
Total Employment	1,075,581	291,673	483,123	174,959	2,025,335
<b>Wages – million \$ –</b>					
Direct Wages	\$24,686	\$8,258	\$11,194	\$3,462	\$47,600
Total Wages	\$54,462	\$21,413	\$23,734	\$8,078	\$107,687
<b>Output (Sales) – million \$ –</b>					
Direct Output	\$61,861	\$21,682	\$24,280	\$9,165	\$116,988
Total Output	\$151,883	\$60,804	\$64,459	\$24,050	\$301,196
<b>Tax Revenues – million \$ –</b>					
Tax Total	\$17,927	\$7,228	\$9,733	\$3,249	\$38,138

### U.S. Fruits and Vegetables Employment Shares by Business Sector, 2019



## The Floral Industry

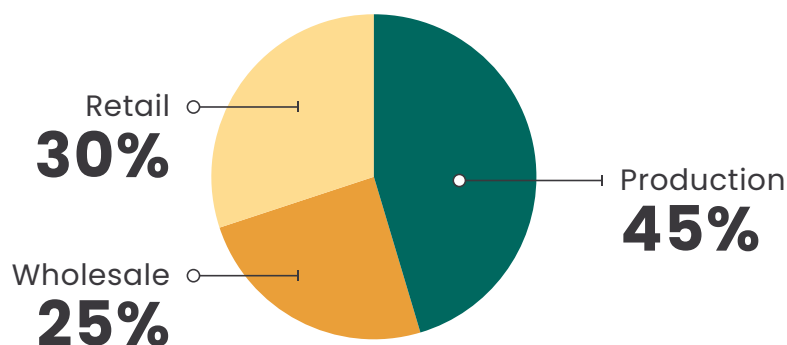
The Floral Industry accounts for 92,176 direct jobs within the industry and an additional 117,093 indirect and induced jobs to generate a total economy-wide job count of 209,269. Production of flowers requires 41,827 direct jobs and generates 82,422 jobs economy-wide. Within the floral supply sub-sector, direct production accounts for 45 percent of jobs, direct wholesale accounts for 25 percent of jobs, and direct retail accounts for 30 percent of jobs.

Due to industry employment and its economic impacts, total wages amount to \$12.5 billion per year on economy-wide sales of \$38.2 billion. Of the \$38.2 billion, \$14.9 billion are floral industry direct sales. Federal, state, and local taxes generated by the industry, and the spin off industry sales its activity generates, total \$5.5 billion per year.

### Floral Supply Industry Economic Impact by Business Sector, 2019 (2022\$)

	Production	Wholesale	Retail	Floral Industry Economic Impact
<b>Employment</b>				
Direct Employment	41,827	22,635	27,714	92,176
Total Employment	82,422	80,229	46,617	209,269
<b>Wages – million \$ –</b>				
Direct Wages	\$1,678	\$2,081	\$1,080	\$4,839
Total Wages	\$4,122	\$6,039	\$2,290	\$12,451
<b>Output (Sales) – million \$ –</b>				
Direct Output	\$4,551	\$8,013	\$2,343	\$14,907
Total Output	\$12,178	\$19,772	\$6,220	\$38,169
<b>Tax Revenues – million \$ –</b>				
Tax Total	\$1,397	\$3,196	\$939	\$5,532

### U.S. Floral Employment Shares by Business Sector, 2019





## NATIONAL ECONOMIC IMPACT

### By State

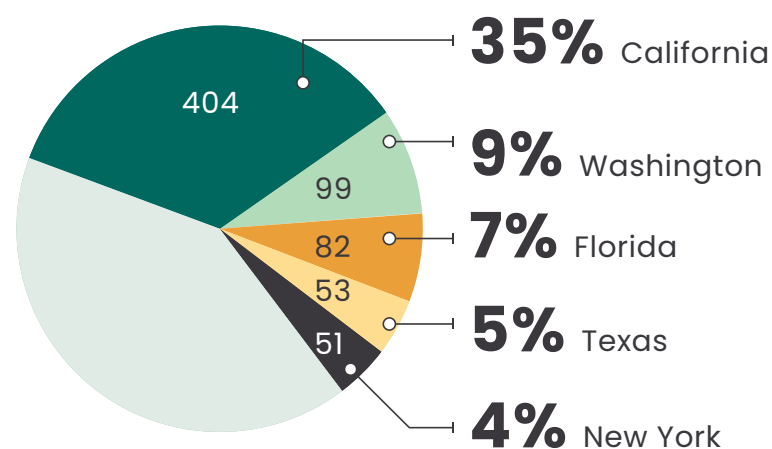
The industries' economic impact reaches all 50 states and the District of Columbia. The impact varies from state to state, depending on factors such as each state's industry mix, wage structure, spending and saving patterns, and connections to other economies. The state-level impact presented below reflects the industries' operational impacts.

Twenty-nine states have more than 10,000 jobs attributable to the industry; only ten states have less than 4,000.

The state of California holds the highest concentration of fresh produce and floral employment at 404,468 employees, representing 35 percent of the industries employment nationwide. Washington and Florida are distant second and third with 99,320 and 82,013 industry employees. The top five states are home to 59 percent of all industry employees.

California holds the highest concentration of fresh produce and floral employment, representing **35% of the industry employment.**

Distribution of Fresh Produce and Floral Supply Industry Employment by State (in thousands)



“ The fresh produce & floral industries support **more jobs** than most sectors of perishables including cattle ranching & farming, dairy manufacturing, and poultry & egg production.





## NATIONAL ECONOMIC IMPACT

### Fresh Produce and Floral Supply Industry Economic Impact by State, 2019 (2022\$)

		Direct Employment	Total Employment	Direct Output	Total Output
1	California	404,468	676,332	\$50,649,754,732	\$96,936,790,632
2	Washington	99,320	145,247	\$9,365,657,846	\$16,677,799,898
3	Florida	82,013	169,196	\$10,237,910,147	\$25,209,083,585
4	Texas	52,944	87,679	\$5,591,004,064	\$11,435,832,733
5	New York	50,802	69,356	\$4,860,533,240	\$8,595,850,555
6	Oregon	34,162	50,310	\$2,957,970,540	\$5,313,301,896
7	Pennsylvania	30,549	47,738	\$2,934,871,172	\$5,798,804,547
8	Georgia	24,899	44,422	\$3,102,159,191	\$6,120,061,040
9	Michigan	28,678	43,648	\$2,529,674,292	\$4,831,881,731
10	Arizona	23,388	42,945	\$3,009,350,777	\$6,038,802,834
11	New Jersey	26,871	41,444	\$2,999,094,804	\$5,606,326,883
12	Illinois	23,694	38,583	\$2,707,140,937	\$5,439,381,152
13	North Carolina	21,538	36,635	\$2,307,576,557	\$4,650,015,945
14	Ohio	21,687	33,116	\$1,900,692,147	\$3,788,068,969
15	Massachusetts	20,279	29,629	\$1,859,094,177	\$3,599,713,667
16	Colorado	12,756	21,602	\$1,454,862,031	\$2,896,824,542
17	Wisconsin	14,670	21,423	\$1,283,412,371	\$2,345,972,567
18	Virginia	15,200	21,387	\$1,277,710,993	\$2,334,175,092
19	Maryland	12,836	19,830	\$1,488,095,019	\$2,726,588,888
20	Idaho	10,523	19,170	\$1,610,167,554	\$2,812,554,736
21	Minnesota	11,469	19,028	\$1,376,561,653	\$2,702,286,277
22	Tennessee	10,558	16,417	\$1,049,592,928	\$2,015,149,429
23	South Carolina	10,083	15,343	\$957,561,273	\$1,705,346,256
24	Indiana	9,570	14,206	\$864,530,003	\$1,610,206,811
25	Missouri	8,734	13,268	\$802,451,145	\$1,540,738,806
26	Hawaii	8,121	11,050	\$619,649,034	\$1,089,637,631



		Direct Employment	Total Employment	Direct Output	Total Output
27	Connecticut	7,430	10,691	\$751,690,601	\$1,365,408,625
28	Kentucky	6,777	10,264	\$671,999,331	\$1,211,916,847
29	Louisiana	6,792	10,087	\$664,456,919	\$1,174,977,421
30	Iowa	6,735	9,883	\$685,848,325	\$1,197,443,600
31	Nevada	6,258	9,720	\$773,311,986	\$1,350,925,379
32	Alabama	6,202	9,018	\$555,761,148	\$982,503,450
33	New Mexico	6,352	8,394	\$497,409,874	\$792,056,841
34	Utah	5,201	8,116	\$504,515,965	\$969,586,232
35	Maine	5,486	8,076	\$438,977,500	\$789,397,705
36	Oklahoma	4,123	6,342	\$411,193,038	\$759,359,163
37	Kansas	4,141	6,019	\$410,133,042	\$724,293,993
38	Mississippi	3,826	5,528	\$343,439,231	\$587,256,659
39	Nebraska	3,449	5,361	\$353,992,548	\$631,804,872
40	New Hampshire	4,010	5,361	\$288,233,068	\$519,722,752
41	Arkansas	3,394	4,881	\$310,484,477	\$538,589,065
42	Rhode Island	2,269	3,288	\$212,582,427	\$381,351,348
43	West Virginia	2,556	3,218	\$173,283,989	\$270,532,860
44	North Dakota	2,108	3,141	\$267,730,151	\$441,661,454
45	Vermont	2,237	3,123	\$197,946,267	\$329,504,531
46	Delaware	1,831	2,715	\$179,750,508	\$325,131,410
47	Montana	1,660	2,367	\$132,279,820	\$238,402,004
48	South Dakota	1,260	1,684	\$100,220,057	\$169,772,701
49	District of Columbia	1,193	1,379	\$116,295,262	\$158,499,077
50	Alaska	788	1,031	\$61,523,400	\$102,632,149
51	Wyoming	731	923	\$57,267,274	\$87,951,478





# Appendix

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## Use of IMPLAN

IMPLAN provides a highly accurate and adaptable model for its users. The IMPLAN database contains county, state, and federal economic statistics, which are specialized by region. IMPLAN accounts closely follow the accounting conventions used in the “Input-Output Study of the U.S. Economy” by the U.S. Bureau of Economic Analysis.

The IMPLAN model uses input-output accounting that describes commodity flows from producers to intermediate and final consumers. The total industry purchases of commodities, services, employment compensation, value added, and imports are equal to the value of the commodities produced. Purchases for final use (final demand) drive the model. Industries produce goods and services for final demand and purchase goods and services from other producers. These other producers, in turn, purchase goods and services. This buying of goods and services (indirect purchases) continues until leakages from the region (imports and value added) stop the cycle. These indirect and induced effects (the effects of household spending) can be mathematically derived. The resulting sets of multipliers describe the change of output for each and every regional industry caused by a one dollar change in final demand for any given industry.

In this analysis, the change of output, jobs, and wage income is determined by the change in employment required to meet the final demand for the fresh produce and floral supply industry businesses. A multi-regional I-O model was created for each of the 50 states, plus the District of Columbia, using the 2019 model data (multipliers). Industry employment levels for each of nine IMPLAN sectors were entered into the model as stimulus. Trade benefits are captured between the selected state and the other 50 regions.

While the employment and multipliers reflect the 2019 economy, the wages and sales figures are stated in 2022 dollars using the IMPLAN price adjustment factors. By default, economic impacts are reported in model year dollars (2019) and it is handy to be able to report the results in current year dollars (2022). The BLS produces time-series of output estimates for its Employment Growth Model. These outputs are projected in real and nominal dollars and these projections are the basis for estimates of IMPLAN price adjustment indexes. The output inflators are specific to each industry and are applied automatically to the IMPLAN estimates generated by the 2019 base model. IMPLAN provides output by industry as well as final demand estimates for the years 2019 through 2021. Although results for this report are presented in 2022 these estimates do not capture the full inflation witnessed in 2022 but serve to approximate the current size the fresh produce and floral supply industry benefits.











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