



Agricultural Refrigerated Truck Quarterly

a quarterly publication of the Agricultural Marketing Service

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FEATURE ARTICLE

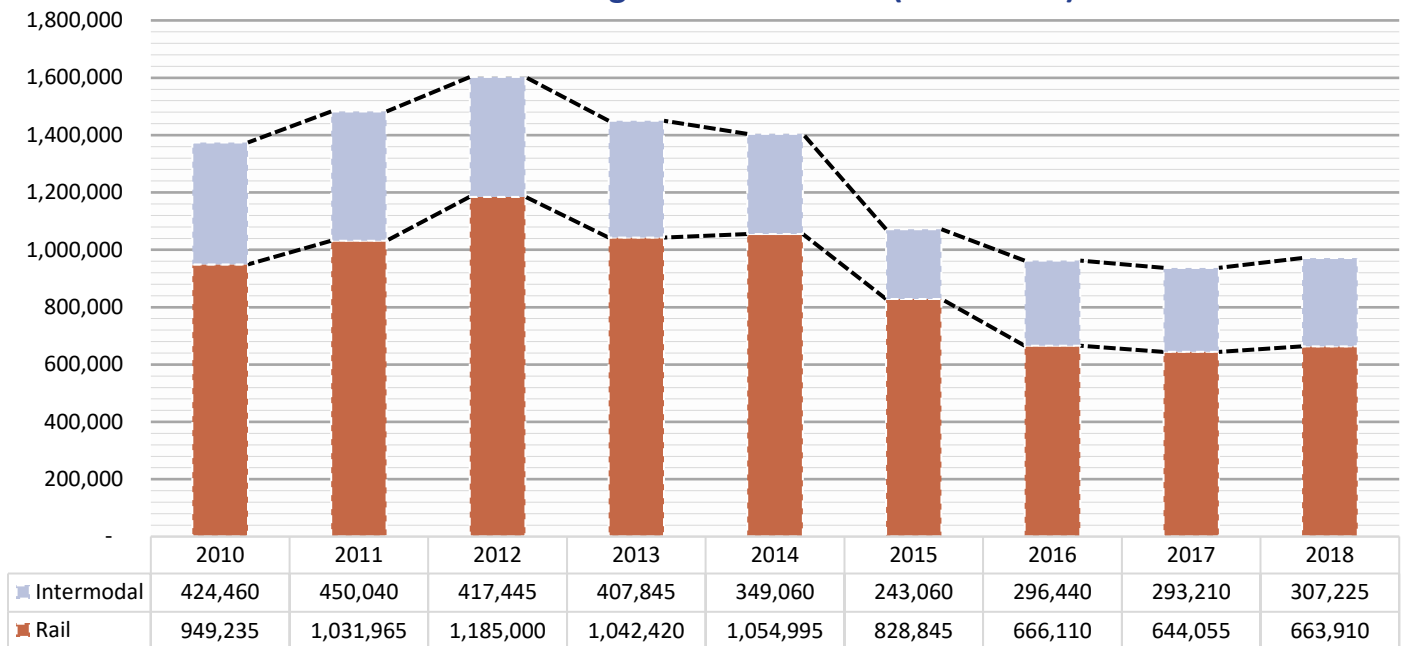
Overview of Intermodal and Rail Shipments from California and the Pacific Northwest in 2018

In 2018, reported¹ refrigerated shipments (truck + rail + intermodal) of fruits and vegetables from California and the Pacific Northwest (PNW)² were up 21 percent, a sharp increase from the previous year. The gains were largely due to increased shipments via truck, but rail and intermodal shipments also saw improvements from 2017. Recent changes in refrigerated shipment volumes may be partially attributable to increased fuel prices during the year and the advent of new technologies in the industry. This article examines short-term and long-term trends affecting refrigerated shipments of fresh fruit and vegetables by intermodal and rail, including industry and regional highlights.

Developments in Refrigerated Service for Intermodal and Rail

Despite a recent downward trend, combined rail and intermodal shipments of fruits and vegetables from California and the PNW increased 4 percent (33,870 short tons) in 2018 from the previous year. Between 2012 and 2017, combined shipments declined every year, with a 42 percent decrease over the five-year period. However, in 2018, rail and intermodal shipments increased 19,855 tons and 14,015 tons, respectively, from the previous year.

California and Pacific Northwest Refrigerated Intermodal and Rail Shipments of Fresh Fruits and Vegetables: 2010-18 (Short Tons)



Source: AMS Transportation Services Division analysis of AMS Specialty Crops Program Market News data

1. Truck shipments for all commodities and origins are not available. Those obtainable are reported but should not be interpreted as representing complete movements of a commodity. Rail and intermodal shipments are reported by rail carriers that issue the initial line-haul revenue waybills. Rail shipments are those moving in refrigerated railcars. Intermodal shipments include those moving in refrigerated trailer-on-flat-car and refrigerated container-on-flat-car.

2. Idaho, Oregon, and Washington



AGRICULTURAL REFRIGERATED TRUCK QUARTERLY

Quarter 1, 2019

Recent technological advancements in rail and intermodal refrigerated transport have improved efficiency and reduced input costs. Companies, such as Union Pacific (UP), have been upgrading outdated capital stocks with more efficient, environmentally-friendly alternatives. In 2018, UP announced that it would add 1,000 to 1,600 high-tech refrigerated boxcars, marking the largest capital investment in company history, according to Progressive Railroading.

In intermodal transport, companies are making similar capital investments in new technology. Infinity Transportation Logistics reports their new refrigerated containers offer 20 to 30 percent better thermal efficiency, 45 percent lower environmental impact, and increased cargo storage. Furthermore, companies are reducing administrative costs using technology, such as blockchain, which allows them to track shipments more effectively than in the past. According to a report from DC Velocity, blockchain reduces companies' reliance on paper, which in turn reduces labor inputs and prevents human error, such as lost documentation.

In addition to technological innovation, high diesel prices may partially explain the increase in rail and intermodal refrigerated transport. According to the U.S. Energy Information Administration, the average diesel price in the U.S. increased 20 percent in 2018 from the previous year, from \$2.65 to \$3.18. Such an increase may have incentivized some shippers to substitute truck transportation with modes such as rail or intermodal. However, despite rising diesel prices, truck rates fell in the fourth quarter of 2018. During that same period, refrigerated transport by truck in California and the PNW grew faster than rail or intermodal, up 15 percent from 2017. Truck availability improved in the third quarter of 2018 but tightened in the fourth quarter, primarily between adequate and shortage. Improved technology and changes in demand for fruits and vegetables may explain increased refrigerated truck volumes.

Regional Highlights

California

Rail and intermodal play a vital role in transporting perishable goods from California, the largest producer of fruits and vegetables in the United States.

In 2018, rail and intermodal shipments of fresh fruits and vegetables originating in California increased 7 percent, from 2017. More specifically, shipments of carrots and dry onions increased steeply, by 45 percent (30,745 tons) and 71 percent (16,315 tons), respectively. Shipments of apples and avocados, saw large proportional increases, rising 955 percent (3,820 tons) and 513 percent (4,645 tons) respectively.



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Fresh Fruit and Vegetable Rail and Intermodal Shipments Originated in California during 2017 and 2018 (short tons)

| Commodity | Rail | | | | Intermodal | | | |
|-----------------------|----------------|----------------|---------------|-----------|----------------|----------------|---------------|-----------|
| | Volume | | Change | | Volume | | Change | |
| | 2017 | 2018 | Tons | % | 2017 | 2018 | Tons | % |
| APPLES | - | 450 | 450 | - | 400 | 3,770 | 3,370 | 843% |
| APRICOTS | - | - | - | - | - | 40 | 40 | - |
| ARTICHOKES | - | - | - | - | 25 | - | (25) | - |
| AVOCADOS | - | - | - | - | 905 | 5,550 | 4,645 | 513% |
| BROCCOLI | 4,210 | 2,250 | (1,960) | -47% | 12,085 | 15,135 | 3,050 | 25% |
| CANTALOUPS | 8,450 | 2,280 | (6,170) | -73% | 7,260 | 6,525 | (735) | -10% |
| CARROTS | 54,770 | 83,740 | 28,970 | 53% | 13,210 | 14,985 | 1,775 | 13% |
| CAULIFLOWER | - | - | - | - | 5,720 | 8,340 | 2,620 | 46% |
| CELERY | 17,190 | 14,985 | (2,205) | -13% | 35,385 | 40,200 | 4,815 | 14% |
| GRAPEFRUIT | 240 | 320 | 80 | 33% | 1,265 | 1,180 | (85) | -7% |
| GRAPES | 1,470 | 3,530 | 2,060 | 140% | 15,940 | 15,770 | (170) | -1% |
| GRAPES-MIXED JUICE | - | - | - | - | 540 | 220 | (320) | -59% |
| HONEYDEWS | 4,215 | 1,775 | (2,440) | -58% | 3,160 | 3,420 | 260 | 8% |
| LEMONS | 870 | 2,750 | 1,880 | 216% | 12,115 | 11,545 | (570) | -5% |
| LETTUCE, ICEBERG | 75 | - | (75) | - | 52,480 | 52,140 | (340) | -1% |
| LETTUCE, PROCESSED | - | - | - | - | 25 | - | (25) | - |
| LETTUCE, ROMAINE | - | - | - | - | 33,000 | 30,760 | (2,240) | -7% |
| LETTUCE-OTHER | - | - | - | - | 2,225 | 2,365 | 140 | 6% |
| NECTARINES | 2,270 | 205 | (2,065) | -91% | 2,825 | 3,340 | 515 | 18% |
| ONIONS DRY | 15,045 | 30,900 | 15,855 | 105% | 7,940 | 8,400 | 460 | 6% |
| ORANGES | 53,300 | 51,375 | (1,925) | -4% | 38,370 | 36,040 | (2,330) | -6% |
| PEACHES | 5,385 | 960 | (4,425) | -82% | 2,300 | 2,555 | 255 | 11% |
| PEARS | 10,255 | 80 | (10,175) | -99% | 1,140 | 930 | (210) | -18% |
| PEPPERS, BELL TYPE | - | - | - | - | 4,780 | 4,900 | 120 | 3% |
| PLUMS | 3,235 | - | (3,235) | - | 640 | 365 | (275) | -43% |
| POMEGRANATES | - | 165 | 165 | - | 40 | 20 | (20) | -50% |
| POTATOES | 14,200 | 11,895 | (2,305) | -16% | 2,405 | 4,440 | 2,035 | 85% |
| SWEET POTATOES | 500 | 3,500 | 3,000 | 600% | 4,080 | 4,860 | 780 | 19% |
| TOMATOES | - | - | - | - | 3,020 | 3,185 | 165 | 5% |
| WATERMELONS | - | - | - | - | 20 | - | (20) | - |
| WATERMELONS, SEEDLESS | 55 | - | (55) | - | 1,260 | 1,780 | 520 | 41% |
| Total | 195,735 | 211,160 | 15,425 | 8% | 264,560 | 282,760 | 18,200 | 7% |

Source: AMS Transportation Services Division analysis of AMS Specialty Crops Program Market News data



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A 2018 study³ of perishable goods transport in California found that replacing reefer trucks with rail could reduce emissions, limit damage to roads, and prevent injury from truck crashes. The state has an especially large volume of refrigerated trucks as a result of its extensive fruit and vegetable production.

Pacific Northwest

Shipments of fresh fruits and vegetables from the PNW via rail increased 1 percent in 2018 from the previous year, while intermodal shipments decreased by 15 percent. In 2018, Union Pacific committed to a \$15 million investment in a Cold Connect expansion in Washington. Similarly, Infinity Transportation Logistics, which operates in the PNW, pledged to update their intermodal container fleet with more energy-efficient containers.

Combined Rail and Intermodal shipments of potatoes originating in the PNW increased 6 percent (12,475 tons) from 2017 to 2018. Shipments of dry onions increased 15 percent (19,770 tons) while apples decreased 26 percent (32,640 tons).

Fresh Fruit and Vegetable Rail and Intermodal Shipments Originated in the Pacific Northwest during 2017 and 2018 (short tons)

| Commodity | Rail | | | | Intermodal | | | |
|---------------|----------------|----------------|--------------|-----------|---------------|---------------|----------------|-------------|
| | Volume | | Change | | Volume | | Change | |
| | 2017 | 2018 | Tons | % | 2017 | 2018 | Tons | % |
| APPLES | 114,550 | 86,725 | (27,825) | -24% | 13,180 | 8,365 | (4,815) | -37% |
| ONIONS DRY | 130,310 | 150,125 | 19,815 | 15% | 1,985 | 1,940 | (45) | -2% |
| PEARS | 330 | 385 | 55 | 17% | 2,045 | 2,125 | 80 | 4% |
| POTATOES | 203,005 | 214,885 | 11,880 | 6% | 11,440 | 12,035 | 595 | 5% |
| POTATOES-SEED | 125 | 630 | 505 | 404% | - | - | - | - |
| Total | 448,320 | 452,750 | 4,430 | 1% | 28,650 | 24,465 | (4,185) | -15% |

Source: AMS Transportation Services Division analysis of AMS Specialty Crops Program Market News data

Conclusion

Though trucks remain the most common mode of refrigerated transportation, rail and intermodal shipments may become more cost competitive, as industry technology progresses. Rail and intermodal offer advantages over trucking with respect to capacity and environmental impact, but trucking offers substantial flexibility in terms of time and location. Fuel prices represent another factor that affects modal share for shippers with both alternatives.

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3. Seeherman, Joshua, Karen Trapenberg Frick, Juan Caicedo, and Mark Hansen. Back on track? Reassessing rail transport for California's perishable produce. UC Berkeley. University of California, Agriculture and Natural Resources. California Agriculture 72(4):200-203. December 17, 2018. Web. <http://calag.ucanr.edu/Archive/?article=ca.2018a0036>.



QUARTERLY OVERVIEW

Fruit and Vegetable Shipments

During the first quarter of 2019, reported U.S. truck shipments of fresh produce were 9.6 million tons, 13 percent higher than the previous quarter, and 2 percent higher than the same quarter last year.

Shipments from Mexico were the highest in the first quarter, totaling 3.03 million tons and accounting for 32 percent of the total reported shipments of fresh fruits and vegetables. Movements from California totaled 2.17 million tons, representing 23 percent of the reported total. Shipments from the Pacific Northwest totaled 1.86 million tons, representing 19 percent of the reported shipments.

These top five commodities accounted for 39 percent of the reported truck movements during the first quarter of 2019:

- Potatoes (11 percent)
- Oranges (9 percent)
- Apples (9 percent)
- Onions, dry (6 percent)
- Tangerines (4 percent)

Truck Rates

The table below provides a snapshot of quarterly truck rates for U.S. produce shipments over four mileage categories—0-500, 501-1,500, 1,501-2,500, and 2,501+ miles. Please note the U.S. average truck rates provided below were calculated using weighted regional rates and volumes.

Average U.S. Truck Rates for Selected Routes between 501 and 1500 miles (\$/Mile)

| | 0-500 miles | 501-1,500 miles | 1,501-2,500 miles | 2,501+ miles |
|--|-------------|-----------------|-------------------|--------------|
| Q1 2018 | 2.83 | 2.82 | 2.68 | 1.30 |
| Q2 2018 | 4.36 | 2.99 | 2.50 | 1.26 |
| Q3 2018 | 5.14 | 2.74 | 2.72 | 1.62 |
| Q4 2018 | 3.35 | 2.84 | 2.67 | 1.54 |
| Q1 2019 | 2.90 | 2.59 | 2.46 | 1.28 |
| Q1 Change from Previous Quarter | -13% | -9% | -8% | -17% |
| Q1 Change from Same Quarter Last Year | 3% | -8% | -8% | -1% |

Source: AMS Transportation Services Division analysis of AMS Specialty Crops Program Market News data.

Note: "n/a" indicates rates not available.

Diesel Fuel

During the first quarter 2019, the U.S. diesel fuel price averaged \$3.02 per gallon—8 percent lower than the previous quarter, but 0.01 percent higher than the same quarter last year.



REGULATORY NEWS AND UPDATES

Motor Carrier Safety Advisory Committee Discusses Automated Driving Systems

On September 30 and October 1, 2019, the federal advisory [Motor Carrier Safety Advisory Committee](#) discussed Automated Driving Systems (ADS) for commercial vehicles. The [committee](#) was asked to provide the Federal Motor Carrier Safety Administration (FMCSA) with recommendations on regulatory provisions, workforce issues, and other concerns for a potential rulemaking. As part of the preparations for ADS, the U.S. Department of Transportation released [Preparing for the Future of Transportation, Automated Vehicles 3.0](#). Comments can be viewed at docket number [DOT-OST-2018-0149](#).

Public Listening Sessions on Flexibility within the Hours of Service of Drivers

FMCSA held [public listening sessions](#) on the [proposed rulemaking](#) to provide flexibility within the hours of service of drivers. The webcast listening sessions, held in Washington, DC on September 17, 2019 and in Dallas, Texas on August 23, 2019, were transcribed and can be viewed at docket number [FMCSA-2018-0248](#).

The flexibility proposed includes: (1) allowing the 30-minute rest break to be satisfied by a driver using on duty, not driving status; (2) modifying the split sleeper berth exception to allow a driver to spend a minimum of 7 hours in the berth combined with a minimum 2-hour off-duty period, provided the combined periods total 10 hours (rather than the current 8 hour/2 hour split); (3) allowing one off-duty break of at least 30 minutes, but not more than three hours, that would pause a truck driver's 14-hour driving window; (4) extending by two hours the time driving is permitted to account for adverse conditions; and (5) lengthening the short-haul drivers' maximum on-duty period from 12 to 14 hours and extending the distance limit from 100 to 150 air miles.

The American Trucking Associations [requested](#) a 30-day day extension of the comment period that was scheduled to end on October 7. The Commercial Vehicle Safety Alliance [requested](#) a 45-day extension. FMCSA granted a two-week extension to October 21.

Proposed Extension of Compliance Date for States' Query of the Drug and Alcohol Clearinghouse

On September 6, 2016, FMCSA, [proposed](#) to extend the compliance date, from January 6, 2020 to January 6, 2023, for States to utilize the [Commercial Driver's License \(CDL\) Drug and Alcohol Clearinghouse](#) to check drivers' records for violations of drug and alcohol tests. FMCSA will utilize the additional time to issue a rulemaking to address the concerns of the [American Association of Motor Vehicle Administrators](#). Beginning January 6, 2020, States may voluntarily utilize the Clearinghouse prior to issuing, renewing, upgrading, or transferring a CDL. Comments can be viewed at docket number [FMCSA-2019-0120](#).

Public Meeting on the Electronic Logging Device Technical Specifications

On September 6, 2019, FMCSA hosted a [public meeting](#) in Washington, DC for Electronic Logging Device (ELD) [manufacturers](#) on [Appendix A to Subpart B of Part 395](#)—Functional Specifications for All Electronic Logging Devices (ELDs). Topics included the data transfer process and mandatory transition to ELDs (by December 16, 2019) of motor carriers using automatic onboard recording devices. Comments can be viewed at docket number [FMCSA-2010-0167](#).

Update on Driver Detention Impacts on Safety and Productivity

On September 4, the American Transportation Research Institute released an update showing an increase in the [Driver Detention Impacts on Safety and Productivity](#) from 2014 to 2018. Drivers, paid by the mile and limited to 14 hours on-duty time by FMCSA [hours of service rules](#), lose income while



waiting to load and unload at shipper and receiver facilities. The analysis found, “In the 2018 dataset, over a third of the respondents (36.5%) who operate refrigerated trailers (reefer) indicated experiencing delays of four or more hours.” The report will supplement FMCSA’s June 10, 2019 [request](#) for data on driver detention during loading and unloading and the impact of such delays on safety. Comments can be viewed at docket number [FMCSA-2019-0054](#).

Misclassifying Workers as Independent Contractors Does Not Violate the National Labor Relations Act

Many truck drivers prefer to work as independent contractors for employers, while many other truck drivers complain they have been misclassified as independent contractors by their employers, and denied employer provided benefits and legal protections. The classification issue has been the subject of driver protests, litigation, court rulings, regulations, and legislation over many years, especially in [California](#).

On August 29, 2019, “The National Labor Relations Board [held](#) that employers do not violate the National Labor Relations Act (NLRA) solely by misclassifying employees as independent contractors. The Board majority held that an employer’s communication to its workers of its opinion that they are independent contractors does not, standing alone, violate the NLRA if that opinion turns out to be mistaken. According to the decision, such communication does not inherently threaten those employees with termination or other adverse action if they engage in activities protected by the NLRA, nor does it communicate that it would be futile for them to engage in such activities.”

Fees for the Unified Carrier Registration Plan and Agreement to be Reduced

On August 27, 2019, FMCSA [proposed](#) to reduce the “annual registration fees States collect from motor carriers, motor private carriers of property, brokers, freight forwarders, and leasing companies for the Unified Carrier Registration (UCR) Plan and Agreement for the 2020, 2021, and subsequent

registration years. The proposed fees for the 2020 registration year would be reduced below the 2018 registration fee level that was in effect by approximately 12.82 percent to ensure that fee revenues do not exceed the statutory maximum, and to account for the various excess funds held in the depository.” Comments can be viewed at docket number [FMCSA-2019-0066](#).

Cost of Congestion to Trucking in the 2019 Urban Mobility Report

On August 22, 2019, Texas A&M Transportation Institute (TTI) released the [2019 Urban Mobility Report](#) which included the section entitled “What are the impacts of congestion on trucking and trucking on congestion?” The report found that the cost of congestion to trucking 2017 dollars is \$20.5 billion in “wasted time and fuel.” Trucks accounted for 12 percent of the total cost of vehicle congestion (\$166 billion), but only 7 percent of the total vehicle traffic volume.

FMCSA to Operate a Streamlined Crash Preventability Determination Program

On August 5, 2019, FMCSA provided [notice](#) of a streamlined crash preventability determination program, to remove crashes found to be not preventable from the Safety Measurement System prioritization algorithm; make appropriate notations in the Pre-Employment Screening Program; and review the preventability of additional types of crashes. Comments can be viewed at docket number [FMCSA-2014-0177](#).



PROTECTING PERISHABLE FOODS DURING TRANSPORT BY TRUCK AND RAIL (SUMMARY)

This is a summary of “Protecting Perishable Foods During Transport by Truck and Rail” by Jeffrey K. Brecht and Steven A. Sargent, Professors, Horticultural Sciences Department, University of Florida, Gainesville, FL; Patrick E. Brecht, President, PEB Commodities, Inc., Petaluma, CA; Jorge Saenz, President, Wireless Data Solutions, Weston, FL; and Leonard Rodowick, Strategic Relations – Food Safety & OEM, Thermo King Corporation, Nixa, MO. The University of Florida, Institute of Food and Agricultural Sciences Extension (UF/IFAS Extension) report received funding from USDA’s Agricultural Marketing Service (AMS) through cooperative agreement number 17-TMTSD-FL-0007. The views and opinions expressed in the UF/IFAS Extension report are those of the authors and do not necessarily reflect the policies and opinions of the U.S. Department of Agriculture. The full report is available at: <https://edis.ifas.ufl.edu/pdffiles/HS/HS132800.pdf>.

The issuance of the Food and Drug Administration (FDA) Food Safety Modernization Act (FSMA) Final Rule on Sanitary Transportation of Human and Animal Food led to a request by the authors to revise USDA AMS Agriculture Handbook No. 669, “Protecting Perishable Foods During Transport by Truck,” last revised in 1995. The initial 1987 edition of Handbook 669 superseded Handbook No. 105, “Protecting Perishable Foods During Transport by Motortruck,” revised in 1970, after its initial publication in 1956.

“These handbooks have been extremely popular, and tens of thousands of copies have been distributed worldwide. The importance of protecting perishable foods from loss of quality during transport has long been recognized... Thus, an updated version of this handbook has been long overdue, addressing both the advances in technology and the importance of food safety considerations in the transport of perishable foods.”¹

“Many individuals and organizations provided information or other assistance in revising this handbook. Special recognition goes to the University of Florida, Institute of Food and Agricultural Science, Communications Office, for formatting the handbook and for preparing the illustrations. We appreciate the suggestions offered by those with whom we discussed this publication. A great deal of the information on recommended handling requirements for fresh fruits and vegetables is from the recently updated USDA Handbook No. 66, “The Commercial Storage of Fruits, Vegetables, and Florist and Nursery Stocks.”² The Agricultural Research Service updated USDA Handbook No. 66 found at <https://www.ars.usda.gov/ARSUserFiles/oc/np/CommercialStorage/CommercialStorage.pdf>.

The report discusses the following topics, with additional information in the appendices: Important Factors in Protection of Perishable Foods; Preparation for Loading; Loading and Unloading Considerations; Loading (Stowage) Patterns; Individual Commodity Requirements; Regulatory Considerations for Truck Construction Materials, Cleaning Compounds, and Sanitation; and Food Safety Considerations for Transporting Perishable Foods by Truck.

“This updated edition reflects the dynamic changes and innovations in the handling and transportation of perishable foods. Some of these include improved insulation and air movement, microprocessors for more efficient refrigeration, expert systems to control the transport environment and conserve fuel energy, and the use of telematics to monitor and control the performance of refrigerated vehicles during transit. This edition includes descriptions and recommendations for food transported over the road and by rail in marine containers, as well as in railcars.”³

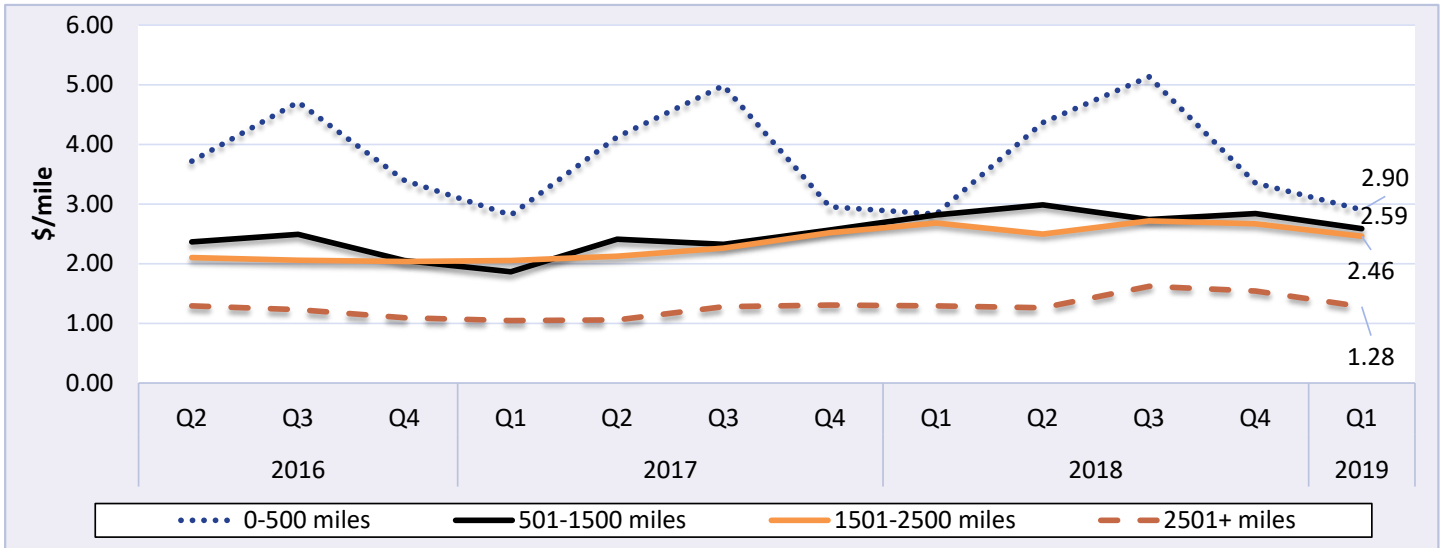
1, 2, 3 Brecht, Jeffrey K., Steven A. Sargent, Patrick E. Brecht, Jorge Saenz, and Leonard Rodowick. Protecting Perishable Foods During Transport by Truck or Rail, Preface, p. ix, HS1328, Horticultural Sciences Department, University of Florida/Institute of Food and Agricultural Sciences Extension, April 2019. Web. <https://edis.ifas.ufl.edu/pdffiles/HS/HS132800.pdf>.



NATIONAL SUMMARY

Truck Rates

Figure 1: Average Truck Rates for Selected Routes (\$/Mile)



Source: AMS Transportation Services Division analysis of AMS Specialty Crops Program Market News data

Table 1: Average U.S. Truck Rates for Selected Routes between 501 and 1500 miles (\$/Mile)

| | 1st Qtr | 2nd Qtr | 3rd Qtr | 4th Qtr | *Annual |
|-------------|---------|---------|---------|---------|---------|
| 2019 | 2.59 | | | | 2.59 |
| 2018 | 2.82 | 2.99 | 2.74 | 2.84 | 2.85 |
| 2017 | 1.86 | 2.41 | 2.33 | 2.56 | 2.29 |
| 2016 | 2.22 | 2.37 | 2.49 | 2.06 | 2.28 |
| 2015 | 2.47 | 2.63 | 2.59 | 2.36 | 2.51 |
| 2014 | 2.32 | 2.67 | 2.64 | 2.49 | 2.53 |
| 2013 | 2.24 | 2.60 | 2.62 | 2.31 | 2.44 |
| 2012 | 2.10 | 2.54 | 2.45 | 2.29 | 2.35 |
| 2011 | 2.02 | 2.60 | 2.77 | 2.26 | 2.41 |
| 2010 | 1.82 | 2.21 | 2.33 | 1.94 | 2.08 |
| 2009 | 1.85 | 1.99 | 2.02 | 1.86 | 1.93 |
| 2008 | 2.02 | 2.56 | 2.77 | 2.24 | 2.40 |
| 2007 | 1.89 | 2.23 | 2.25 | 2.03 | 2.10 |

Source: AMS Transportation Services Division analysis of AMS Specialty Crops Program Market News data.

Note: "n/a" indicates rates not available.



AGRICULTURAL REFRIGERATED TRUCK QUARTERLY

Quarter 1, 2019

Table 2: Quarterly Rates for Key Origins by Month; 501-1500 miles (\$/Mile)

| Origin | 1st Quarter 2019 | | | 4th Quarter 2018 | | |
|----------------|------------------|----------|-------|------------------|----------|----------|
| | January | February | March | October | November | December |
| Arizona | 3.80 | 3.21 | 3.18 | n/a | 3.91 | 4.16 |
| California | 2.77 | 2.47 | 2.43 | 3.09 | 3.40 | 3.10 |
| Florida | 2.21 | 2.40 | 2.22 | 1.67 | 2.11 | 2.31 |
| Great Lakes | 3.62 | 3.62 | 3.57 | 3.61 | 3.51 | 3.58 |
| Mexico-Arizona | 2.59 | 2.46 | 2.49 | 1.93 | 2.69 | 2.62 |
| Mexico-Texas | 2.54 | 2.30 | 2.48 | 2.20 | 2.33 | 2.53 |
| New York | 2.92 | 2.92 | 2.73 | 2.92 | 2.92 | 2.92 |
| Other | 2.90 | 2.92 | 2.89 | 2.60 | 2.92 | 2.96 |
| PNW | 2.41 | 2.23 | 2.07 | 2.22 | 2.58 | 2.65 |
| Southeast | 3.99 | 3.99 | 3.99 | 6.65 | 3.99 | 3.99 |
| Texas | 2.67 | 2.42 | 2.61 | 2.44 | 2.53 | 2.67 |

Source: AMS Transportation Services Division analysis of AMS Specialty Crops Program Market News data.

Note: "n/a" indicates rates not available.

Note: The rates for 8 long-haul fruit and vegetable truck corridors are included in the national rate, weighted by commodity and origin volume.

Truck Rates for Selected Routes

Table 3: Origin-Destination Truck Rates for Selected Routes, 1st Quarter 2019 (\$/Mile)

| Origin | Destination | | | | | | | | | |
|----------------|-------------|-----------|--------|---------|--------|-------------|-------|----------|--------------|---------|
| | Atlanta | Baltimore | Boston | Chicago | Dallas | Los Angeles | Miami | New York | Philadelphia | Seattle |
| Arizona | 2.84 | 2.76 | 2.65 | 2.59 | 3.43 | n/a | 2.71 | 2.82 | 2.81 | n/a |
| California | 2.48 | 2.50 | 2.44 | 2.16 | 2.66 | n/a | 2.54 | 2.51 | 2.50 | 2.30 |
| Florida | 2.48 | 2.20 | 2.46 | 1.76 | n/a | n/a | 2.93 | 2.50 | 2.30 | n/a |
| Great Lakes | 3.40 | 3.49 | 3.70 | 4.03 | 2.93 | n/a | 3.05 | 3.99 | 3.81 | n/a |
| Mexico-Arizona | 2.41 | n/a | n/a | 2.08 | 2.60 | 2.44 | 2.32 | 2.36 | 2.32 | n/a |
| Mexico-Texas | 2.59 | 2.51 | 2.42 | 2.31 | 2.81 | 2.07 | 2.39 | 2.57 | 2.48 | 2.27 |
| New York | 2.82 | 5.00 | 9.69 | 3.27 | n/a | n/a | 2.49 | 10.15 | 6.82 | n/a |
| Other | 2.94 | 3.29 | 3.49 | 2.62 | 3.88 | 1.91 | 2.78 | 3.22 | 3.08 | n/a |
| PNW | 2.55 | 2.50 | 2.47 | 2.55 | 2.29 | 2.25 | 2.49 | 2.64 | 2.55 | 8.05 |
| Southeast | 5.63 | 6.06 | 4.39 | 3.53 | n/a | n/a | 3.25 | 4.81 | 5.23 | n/a |
| Texas | 2.81 | 2.61 | 2.52 | 2.42 | 3.26 | 2.18 | 2.50 | 2.71 | 2.60 | 2.35 |

Source: AMS Transportation Services Division analysis of AMS Specialty Crops Program Market News data.

Note: "n/a" indicates rates not available



AGRICULTURAL REFRIGERATED TRUCK QUARTERLY

Quarter 1, 2019

Table 4: Origin-Destination Truck Rates for Selected Routes, 1st Quarter 2019 (\$/Truck)

| Origin | Destination | | | | | | | | | |
|----------------|-------------|-----------|--------|---------|--------|-------------|-------|----------|--------------|---------|
| | Atlanta | Baltimore | Boston | Chicago | Dallas | Los Angeles | Miami | New York | Philadelphia | Seattle |
| Arizona | 5,115 | 6,331 | 7,015 | 4,527 | 3,635 | n/a | 6,665 | 6,792 | 6,581 | n/a |
| California | 5,530 | 6,743 | 7,408 | 4,508 | 3,928 | n/a | 7,092 | 7,113 | 6,914 | 2,986 |
| Florida | 1,248 | 2,173 | 3,361 | 2,171 | n/a | n/a | 704 | 2,885 | 2,465 | n/a |
| Great Lakes | 3,434 | 3,952 | 4,139 | 1,420 | 3,262 | n/a | 5,062 | 4,019 | 3,671 | n/a |
| Mexico-Arizona | 4,346 | n/a | n/a | 3,746 | 2,546 | 1,365 | 5,281 | 5,904 | 5,562 | n/a |
| Mexico-Texas | 2,977 | 4,485 | 5,335 | 3,296 | 1,404 | 3,315 | 3,650 | 5,142 | 4,704 | 5,454 |
| New York | 2,823 | 1,650 | 1,949 | 2,750 | n/a | n/a | 3,604 | 1,763 | 1,569 | n/a |
| Other | 2,693 | 4,149 | 4,118 | 2,232 | 2,138 | 2,093 | 5,522 | 4,092 | 3,741 | n/a |
| PNW | 5,657 | 6,120 | 6,744 | 4,509 | 4,144 | 2,232 | 7,173 | 6,670 | 6,367 | 1,127 |
| Southeast | 2,250 | 2,000 | 3,250 | 3,000 | n/a | n/a | 2,500 | 2,500 | 2,250 | n/a |
| Texas | 2,977 | 4,485 | 5,335 | 3,296 | 1,404 | 3,315 | 3,650 | 5,142 | 4,735 | 5,454 |

Source: AMS Transportation Services Division analysis of AMS Specialty Crops Program Market News data.

Note: "n/a" indicates rates not available

U.S. Diesel Fuel Prices

The diesel fuel price provides a proxy for trends in U.S. truck rates. Diesel fuel is a significant component underlying truck rates.

Figure 2: U.S. Average On-Highway Diesel Fuel Prices



Source: AMS Transportation Services Division analysis of Energy Information Administration/U.S. Department of Energy data.



AGRICULTURAL REFRIGERATED TRUCK QUARTERLY

Quarter 1, 2019

Table 5: Average Diesel Fuel Prices (All Types)

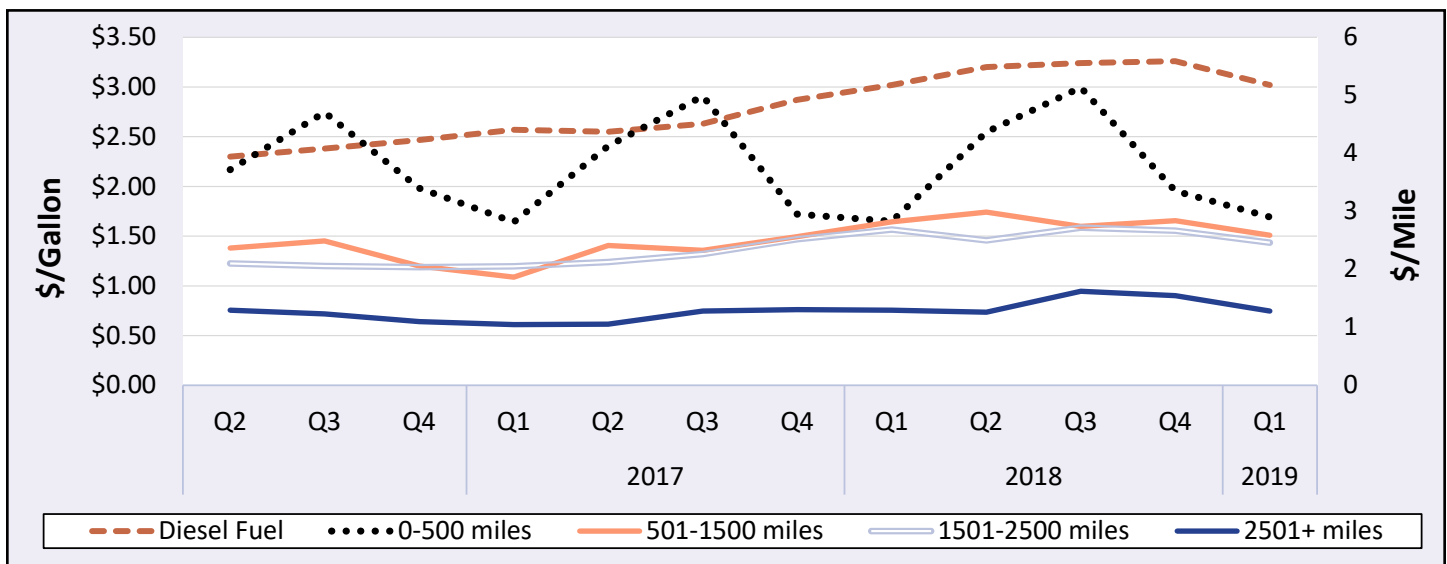
| Location | 1st Quarter 2019 Price \$/Gallon | Change From Last Quarter | Change From Same Quarter Last Year |
|------------------|-------------------------------------|-----------------------------|---------------------------------------|
| East Coast | 3.08 | -0.20 | 0.02 |
| New England | 3.19 | -0.14 | 0.07 |
| Central Atlantic | 3.26 | -0.18 | 0.01 |
| Lower Atlantic | 2.93 | -0.21 | 0.02 |
| Midwest | 2.91 | -0.28 | -0.05 |
| Gulf Coast | 2.82 | -0.21 | 0.01 |
| Rocky Mountain | 2.93 | -0.38 | -0.02 |
| West Coast | 3.48 | -0.27 | 0.07 |
| California | 3.76 | -0.23 | 0.10 |
| U.S. | 3.02 | -0.25 | 0.00 |

Source: AMS Transportation Services Division analysis of Energy Information Administration/U.S. Department of Energy data.

Relationship Between Diesel Fuel and Truck Rates

The diesel fuel price provides a proxy for trends in U.S. truck rates. Diesel fuel is a significant expense for fruit and vegetable movements.

Figure 3: U.S. Average On-Highway Diesel Fuel Prices and Truck Rates



Sources: AMS Transportation Services Division analysis of AMS Specialty Crops Program Market News data and Energy Information Administration/U.S. Department of Energy data.



AGRICULTURAL REFRIGERATED TRUCK QUARTERLY

Quarter 1, 2019

Table 6: Average Diesel Fuel Prices and Truck Rates

| Year | Quarter | Diesel Fuel (\$/gallon) | Truck Rates (\$/mile) 501-1500 miles | % Change From | | | |
|-------------|----------|-------------------------|--------------------------------------|---------------|-------|-----------|-------|
| | | | | Last Quarter | | Last Year | |
| | | | | Diesel | Truck | Diesel | Truck |
| 2016 | 2 | 2.30 | 2.37 | 11% | 7% | -19% | -10% |
| | 3 | 2.38 | 2.49 | 4% | 5% | -29% | -10% |
| | 4 | 2.47 | 2.06 | 4% | -17% | -32% | -6% |
| 2017 | 1 | 2.57 | 1.86 | 4% | -9% | -31% | -2% |
| | 2 | 2.55 | 2.41 | -1% | 29% | 11% | 2% |
| | 3 | 2.63 | 2.33 | 3% | -4% | 10% | -7% |
| 2018 | 4 | 2.87 | 2.56 | 9% | 10% | 16% | 25% |
| | 1 | 3.02 | 2.82 | 5% | 10% | 18% | 51% |
| | 2 | 3.20 | 2.99 | 6% | 6% | 25% | 24% |
| 2019 | 3 | 3.24 | 2.74 | 1% | -8% | 23% | 18% |
| | 4 | 3.26 | 2.84 | 1% | 4% | 14% | 11% |
| | 1 | 3.02 | 2.59 | -8% | -9% | 0% | -8% |

Sources: AMS Transportation Services Division analysis of AMS Specialty Crops Program Market News data and Energy Information Administration/U.S. Department of Energy data.



AGRICULTURAL REFRIGERATED TRUCK QUARTERLY

Quarter 1, 2019

Quarterly Truck Availability

Table 7: U.S. Fresh Fruit and Vegetable Truck Availability

| Truck availability legend | | | | | | | | | | | | | | | |
|---|---|------------|-------------------|------|------|------|------------|------|------|------|-----|------|------|------|--|
| 1=Surplus | 2=Slight surplus | 3=Adequate | 4=Slight shortage | | | | 5=Shortage | | | | | | | | |
| CALIFORNIA, CENTRAL, AND WESTERN ARIZONA | Commodity | 1/1 | 1/8 | 1/15 | 1/22 | 1/29 | 2/5 | 2/12 | 2/19 | 2/26 | 3/5 | 3/12 | 3/19 | 3/26 | |
| Kern District California | Carrots, Grapes | 4 | 3 | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | |
| Oxnard District California | Celery, Cilantro, Kale, Leaf Lettuce, Parsley, Strawberries | 4 | 3 | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | |
| Santa Maria California | Celery, Strawberries, Broccoli, Cauliflower | 4 | 3 | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | |
| South District California | Avocados, Citrus | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | | |
| Western Arizona | Celery, Leaf Lettuce, Broccoli, Cauliflower, Iceberg Lettuce, Romaine | 4 | 3 | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | |
| Salinas-Watsonville California | Broccoli, Cauliflower | | | | | | | | | | | | 3 | 3 | |
| Central San Joaquin Valley California | Leaf Lettuce, Iceberg Lettuce, Romaine | | | | | | | | | | | | | 3 | |
| FLORIDA | Commodity | 1/1 | 1/8 | 1/15 | 1/22 | 1/29 | 2/5 | 2/12 | 2/19 | 2/26 | 3/5 | 3/12 | 3/19 | 3/26 | |
| Central & South Florida | Berries, Mixed Vegetables, Tomatoes | 4 | 2 | 2 | 2 | 2 | 4 | 3 | 2 | 2 | 3 | 2 | 2 | 2 | |
| Florida | Potatoes | | | | | | | 3 | 3 | 3 | 3 | 3 | 3 | 3 | |
| South Florida | Melons | | | | | | | | | | | 3 | 3 | 3 | |
| GREAT LAKE (MI & WI) | Commodity | 1/1 | 1/8 | 1/15 | 1/22 | 1/29 | 2/5 | 2/12 | 2/19 | 2/26 | 3/5 | 3/12 | 3/19 | 3/26 | |
| Central Wisconsin | Onions, Potatoes | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | |
| Michigan | Apples | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | |
| MEXICO BORDER CROSSINGS | Commodity | 1/1 | 1/8 | 1/15 | 1/22 | 1/29 | 2/5 | 2/12 | 2/19 | 2/26 | 3/5 | 3/12 | 3/19 | 3/26 | |
| Mexico Crossings Through Nogales, Arizona | Mixed Vegetables, Beans, Cucumbers, Eggplant, Melons, Peppers, Squash | 5 | 1 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 3 | 3 | 3 | |
| Mexico Crossings Through Texas | Limes, Tomatoes, Broccoli, Mixed Fruits, Vegetables | 4 | 3 | 3 | 3 | 3 | 1 | 1 | 1 | 1 | 1 | 3 | 3 | 2 | |

Source: AMS Transportation Services Division analysis of AMS Specialty Crops Program Market News data
 Note: Empty cells were not reported.



AGRICULTURAL REFRIGERATED TRUCK QUARTERLY

Quarter 1, 2019

Table 7, continued: U.S. Fresh Fruit and Vegetable Truck Availability

| Truck availability legend | | | | | | | | | | | | | | | |
|--|---|------------|-------------------|------------|------|------|-----|------|------|------|-----|------|------|------|--|
| 1=Surplus | 2=Slight surplus | 3=Adequate | 4=Slight shortage | 5=Shortage | | | | | | | | | | | |
| PACIFIC NORTHWEST (ID, OR, & WA) | Commodity | 1/1 | 1/8 | 1/15 | 1/22 | 1/29 | 2/5 | 2/12 | 2/19 | 2/26 | 3/5 | 3/12 | 3/19 | 3/26 | |
| Columbia Basin Washington | Onions, Potatoes | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | |
| Idaho And Malheur County, Oregon | Onions | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | |
| Upper Valley, Twin Falls-Burley District Idaho | Potatoes | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | |
| Yakima Valley & Wenatchee District Washington | Apples, Pears | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | |
| SOUTHEAST (GA, SC, & NC) | Commodity | 1/1 | 1/8 | 1/15 | 1/22 | 1/29 | 2/5 | 2/12 | 2/19 | 2/26 | 3/5 | 3/12 | 3/19 | 3/26 | |
| Eastern North Carolina | Sweet Potatoes | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 3 | 3 | 3 | |
| TEXAS AND OKLAHOMA | Commodity | 1/1 | 1/8 | 1/15 | 1/22 | 1/29 | 2/5 | 2/12 | 2/19 | 2/26 | 3/5 | 3/12 | 3/19 | 3/26 | |
| Lower Rio Grande Valley, Texas | Cabbage, Oranges, Grapefruit, Onions, Oranges | 4 | 3 | 3 | 3 | 3 | 1 | 1 | 1 | 1 | 1 | 3 | 3 | 2 | |

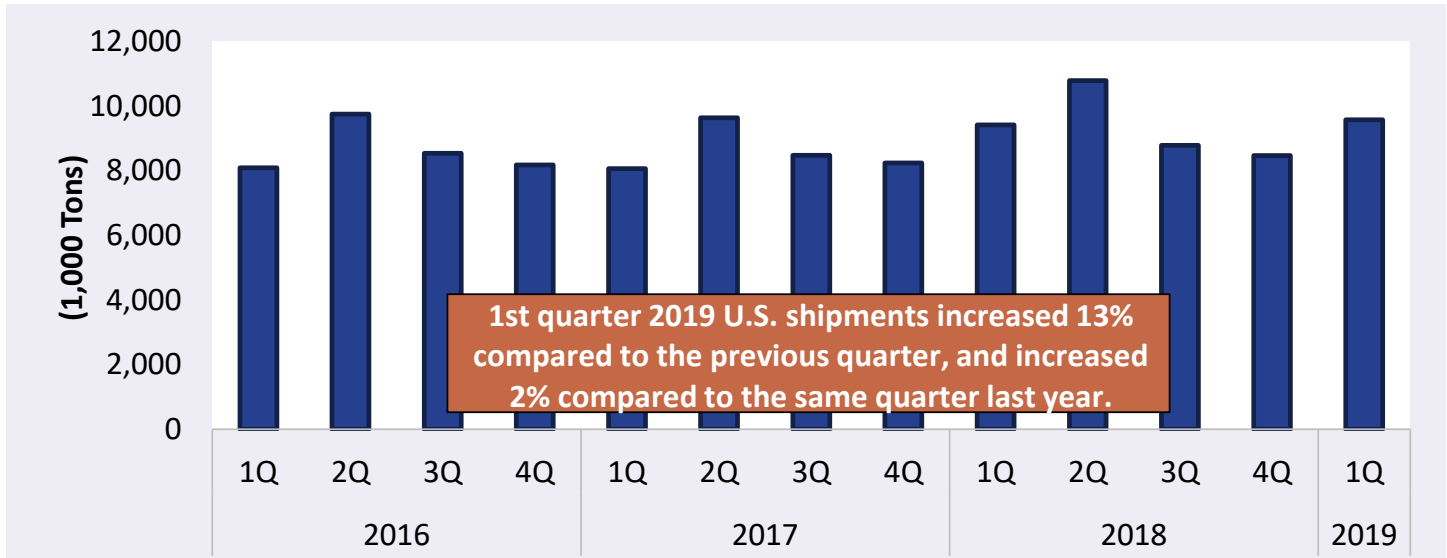
Source: AMS Transportation Services Division analysis of AMS Specialty Crops Program Market News data

Note: Empty cells were not reported.



Reported U.S. Shipments

Figure 4: Reported U.S. Fruit and Vegetable Shipments (1,000 Tons)



Source: AMS Transportation Services Division analysis of AMS Specialty Crops Program Market News data

Table 8: Reported U.S. Fruit and Vegetable Shipments (1,000 Tons)

| Year | 1st Quarter | 2nd Quarter | 3rd Quarter | 4th Quarter | Annual |
|------|-------------|-------------|-------------|-------------|--------|
| 2019 | 9,580 | - | - | - | 9,580 |
| 2018 | 9,419 | 10,795 | 8,789 | 8,474 | 37,478 |
| 2017 | 8,072 | 9,642 | 8,479 | 8,241 | 34,433 |
| 2016 | 8,094 | 9,761 | 8,541 | 8,188 | 34,583 |
| 2015 | 8,118 | 9,630 | 8,324 | 7,771 | 33,842 |
| 2014 | 7,733 | 9,139 | 8,080 | 7,725 | 32,677 |
| 2013 | 7,451 | 8,972 | 7,762 | 6,546 | 30,731 |
| 2012 | 7,577 | 9,008 | 7,774 | 7,532 | 31,890 |
| 2011 | 7,007 | 8,981 | 7,887 | 7,988 | 31,863 |
| 2010 | 7,065 | 8,881 | 7,985 | 7,522 | 31,454 |
| 2009 | 7,158 | 8,728 | 7,990 | 7,270 | 31,147 |
| 2008 | 7,059 | 8,666 | 7,426 | 6,904 | 30,057 |
| 2007 | 6,959 | 8,585 | 7,475 | 7,099 | 30,118 |
| 2006 | 6,335 | 8,400 | 7,854 | 6,960 | 29,550 |
| 2005 | 6,877 | 8,324 | 7,737 | 7,387 | 30,325 |
| 2004 | 6,867 | 8,331 | 6,876 | 6,732 | 28,807 |
| 2003 | 6,824 | 8,013 | 7,043 | 6,684 | 28,564 |

Source: AMS Transportation Services Division analysis of AMS Specialty Crops Program Market News data



Reported Shipments by Selected Commodities

Table 9: Reported Top 10 Commodity Shipments (1,000 Tons)

| Commodity | 1st Quarter 2019 | Previous Quarter | Same Quarter Last Year | Current Quarter as % change from Previous Quarter | Current Quarter as % change from Same Quarter Last Year |
|------------------|------------------|------------------|------------------------|---|---|
| Potatoes | 1,065 | 1,134 | 1,118 | -6% | -5% |
| Oranges | 857 | 441 | 856 | 94% | 0% |
| Apples | 848 | 805 | 914 | 5% | -7% |
| Onions Dry | 584 | 579 | 571 | 1% | 2% |
| Tangerines | 422 | 18 | 331 | 2,252% | 27% |
| Tomatoes | 383 | 341 | 433 | 12% | -12% |
| Avocados | 338 | 260 | 299 | 30% | 13% |
| Lemons | 333 | 225 | 173 | 48% | 93% |
| Lettuce, Iceberg | 328 | 326 | 298 | 1% | 10% |
| Lettuce, Romaine | 306 | 266 | 294 | 15% | 4% |

Source: AMS Transportation Services Division analysis of AMS Specialty Crops Program Market News data



REGIONAL MARKETS

Mexico

Volume

During the first quarter of 2019, total reported shipments of fruits and vegetables from Mexico were 3.03 million tons, 21 percent more than the same quarter last year. The sum of the top five commodities increased 0.3 percent from last year. Decreases in cucumbers, tomatoes, and peppers offset increases in avocado and plum tomato shipments.

Rates

Truck rates for shipments between 501 and 1,500 miles from the Arizona border crossings averaged \$2.52 per mile, up 2 percent from last quarter, but 14 percent lower than the same quarter last year. Rates for shipments between 501 and 1,500 miles from the Texas border crossings averaged \$2.45 per mile, up 4 percent from the previous quarter, but 17 percent lower than the same quarter last year.

Truck Overview

Diesel fuel prices for border crossings from Arizona averaged \$3.13 per gallon, 10 percent lower than the previous quarter, but 1 percent higher than the same period last year. Diesel fuel prices for border crossings from Texas averaged \$2.82 per gallon, 7 percent lower than the previous quarter, but 0.4 percent higher than the same quarter last year. On average, shippers reported adequate to slight surplus truck availability conditions at Arizona Border crossings throughout the quarter. At Texas border crossings, shippers reported adequate conditions in January followed by surplus and slight surplus conditions in February and March.

Table 10: Reported Top Five Commodities Shipped from Mexico (1,000 tons)

| Commodity | 1st Quarter 2019 | Share of Mexico Total | Previous Quarter | Same Quarter Last Year | Current Quarter as % change from: | |
|---------------------|------------------|-----------------------|------------------|------------------------|-----------------------------------|--------------------|
| | | | | | Previous Qtr | Same Qtr Last Year |
| Avocados | 334 | 11% | 249 | 276 | 34% | 21% |
| Cucumbers | 255 | 8% | 216 | 260 | 18% | -2% |
| Tomatoes | 238 | 8% | 167 | 276 | 43% | -14% |
| Peppers, Bell Type | 217 | 7% | 112 | 230 | 93% | -6% |
| Tomatoes, Plum Type | 211 | 7% | 124 | 209 | 70% | 1% |
| Top 5 Total | 1,254 | 41% | 869 | 1,251 | 44% | 0% |
| Mexico Total | 3,029 | 100% | 2,232 | 3,059 | 36% | -1% |

Source: AMS Transportation Services Division analysis of AMS Specialty Crops Program Market News data.
 “-” indicates no reported shipments during the quarter.



AGRICULTURAL REFRIGERATED TRUCK QUARTERLY

Quarter 1, 2019

Table 11: Mexico Truck Overview (Availability Rating: 1=Surplus to 5=Shortage)

| Region/Reporting District | Availability Rating, 1=Surplus to 5=Shortage | | | |
|---|--|----------|-------|-------------|
| | January | February | March | 1st Quarter |
| Mexico Crossings Through Nogales, Arizona | 3.00 | 2.75 | 3.00 | 2.92 |
| Mexico Crossings Through Texas | 3.16 | 1.00 | 2.25 | 2.14 |
| Regional Average Availability | 3.08 | 1.88 | 2.63 | 2.53 |
| Diesel Fuel Price, through Arizona(\$/gallon) | 3.13 | 3.10 | 3.15 | 3.13 |
| Diesel Fuel Price, through Texas (\$/gallon) | 2.80 | 2.80 | 2.87 | 2.82 |

Source: AMS Transportation Services Division analysis of AMS Specialty Crops Program Market News data.

"-" indicates no reported shipments during the quarter.

Table 12: Top 5 Commodities Shipped to U.S. from Mexico by State of Entry (1,000 tons)

| Texas | | California | | Arizona | | New Mexico | |
|-------------------------|------------------|-------------------------|------------------|-------------------------|------------------|-------------------------|------------------|
| Commodity | 1st Quarter 2019 | Commodity | 1st Quarter 2019 | Commodity | 1st Quarter 2019 | Commodity | 1st Quarter 2019 |
| Avocados | 327 | Asparagus | 52 | Cucumbers | 168 | Peppers, Other | 9 |
| Tomatoes | 133 | Onions Green | 37 | Squash | 166 | Misc Tropical | 3 |
| Limes | 125 | Misc Tropical | 33 | Peppers, Bell Type | 151 | Corn-Sweet | 0.5 |
| Cucumbers | 80 | Strawberries | 29 | Tomatoes, Plum Type | 128 | Onions Dry | 0 |
| Strawberries | 79 | Brussels Sprouts | 20 | Tomatoes | 103 | | |
| Mexico through TX Total | 1522 | Mexico through CA Total | 392 | Mexico through AR Total | 1103 | Mexico through NM Total | 12 |

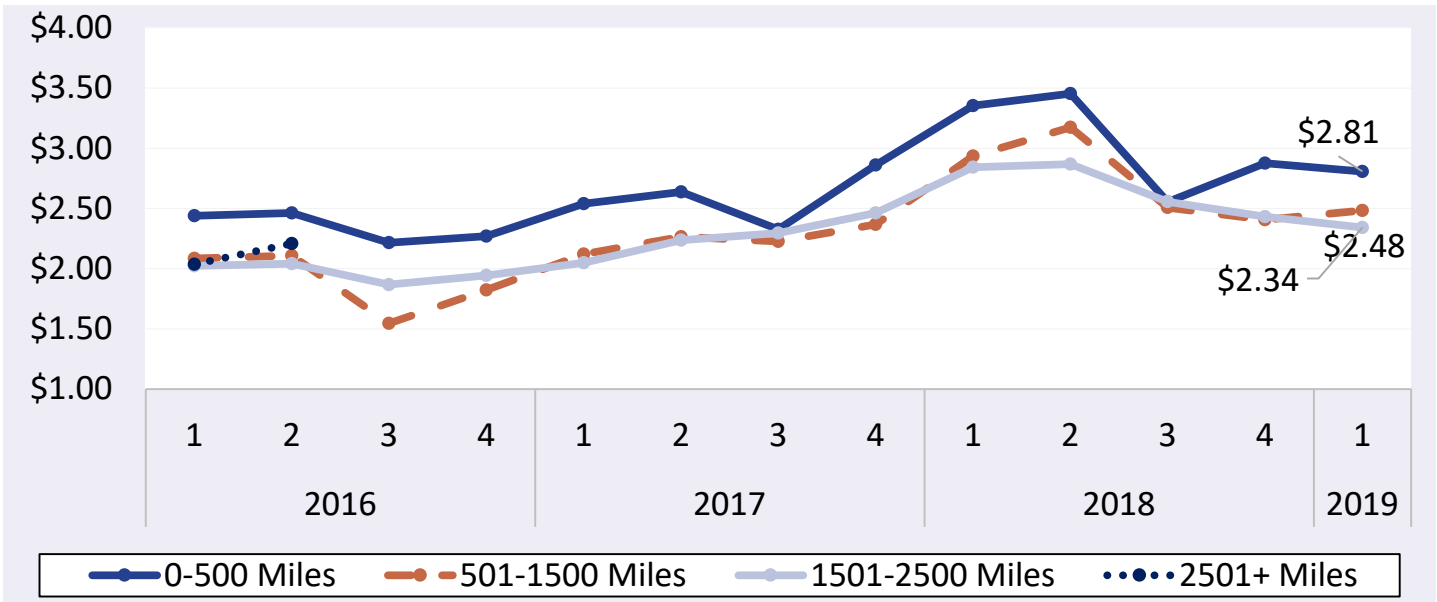
Source: AMS Transportation Services Division analysis of AMS Specialty Crops Program Market News data.



AGRICULTURAL REFRIGERATED TRUCK QUARTERLY

Quarter 1, 2019

Figure 5: Mexico Truck Rates (\$/Mile by Distance Traveled)

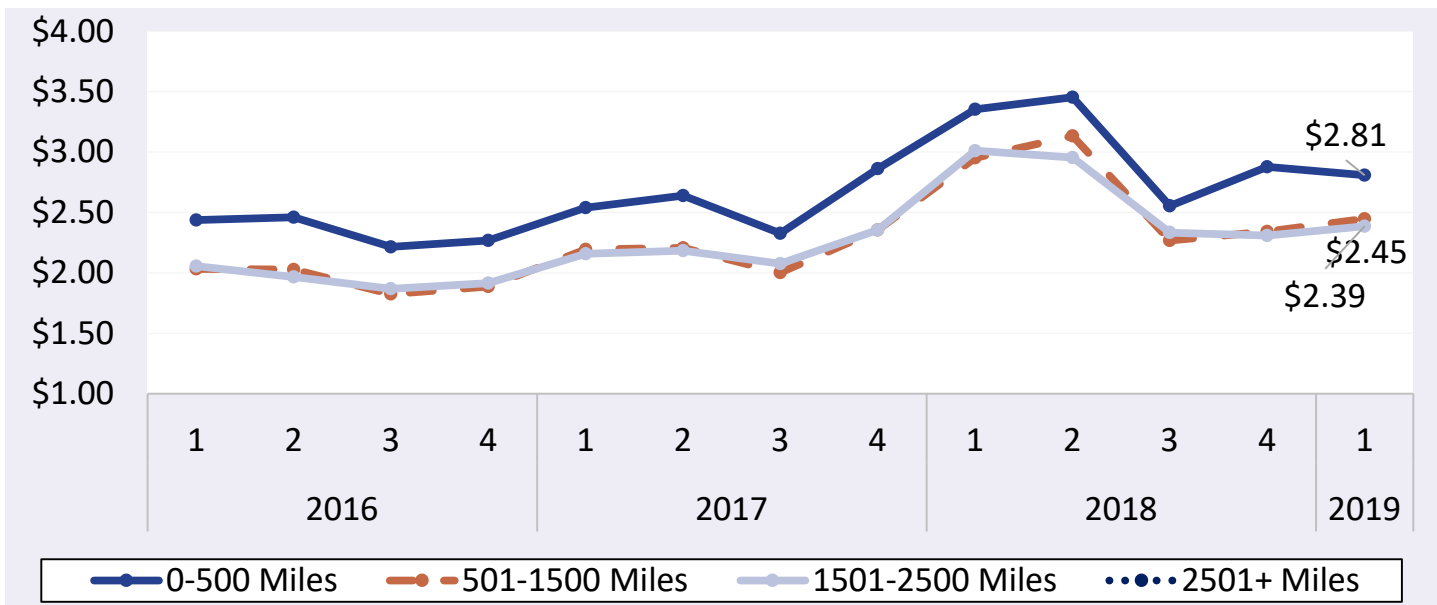


Source: AMS Transportation Services Division analysis of AMS Specialty Crops Program Market News data.

"-" indicates no reported shipments during the quarter.

Gaps in the chart lines are the result of quarters with no reported data for the region.

Figure 6: Mexico through Texas Truck Rates (\$/Mile by Distance Traveled)



Source: AMS Transportation Services Division analysis of AMS Specialty Crops Program Market News data.

"-" indicates no reported shipments during the quarter.

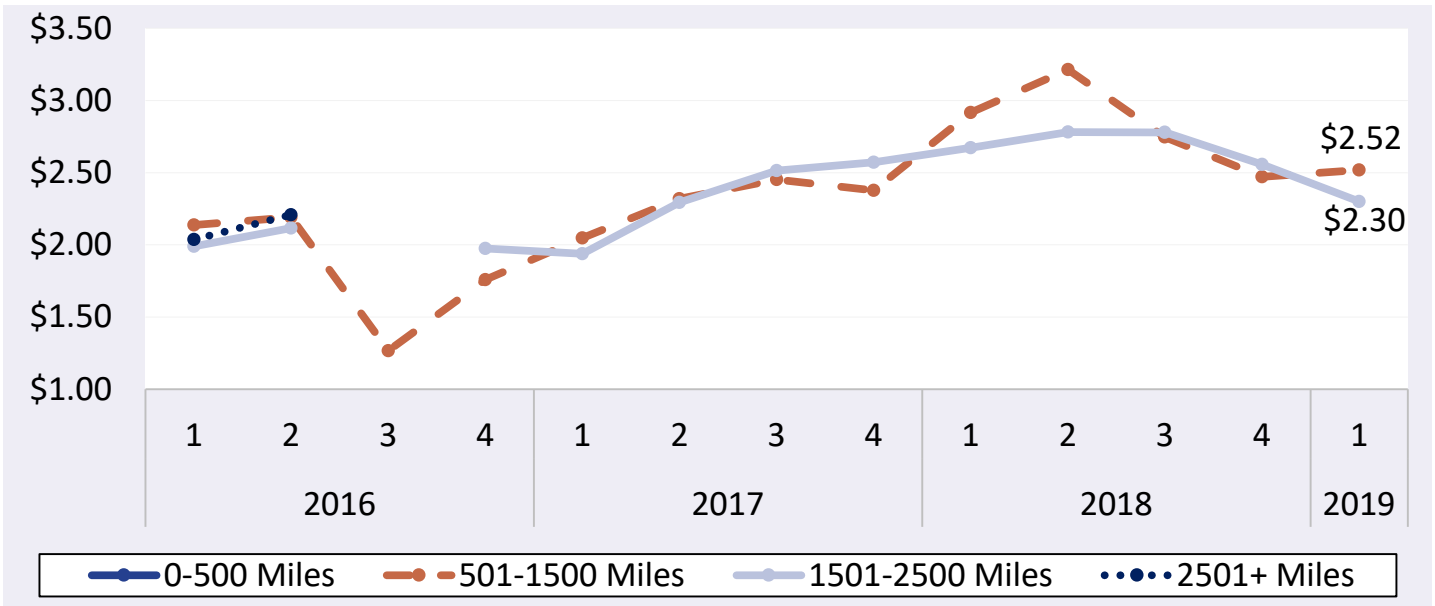
Data for each mileage category is not reported for every region every quarter, sometimes resulting in data gaps for certain quarters.



AGRICULTURAL REFRIGERATED TRUCK QUARTERLY

Quarter 1, 2019

Figure 7: Mexico through Arizona Truck Rates (\$/Mile by Distance Traveled)

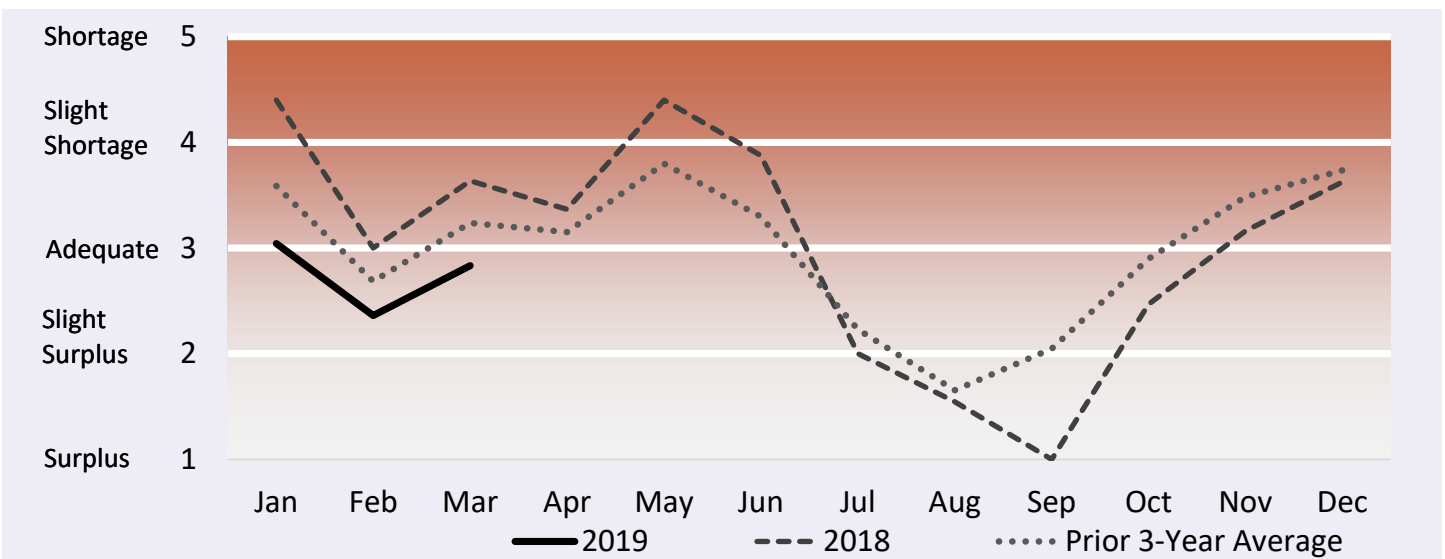


Source: AMS Transportation Services Division analysis of AMS Specialty Crops Program Market News data.

"-" indicates no reported shipments during the quarter.

Gaps in the chart lines are the result of quarters with no reported data for the region.

Figure 8: Refrigerated Truck Availability Monthly Ratings for Mexico



Source: AMS Transportation Services Division analysis of AMS Specialty Crops Program Market News data.

"-" indicates no reported shipments during the quarter.

Gaps in the chart lines are the result of quarters with no reported data for the region.



California

Volume

Total reported shipments of fruits and vegetables from California during the first quarter of 2019 were 2.17 million tons, an 11 percent increase from the same quarter last year. The sum of the top five commodities increased 20 percent from the same quarter last year. Shipments of citrus fruits claimed the top three slots including oranges, tangerines, and lemons. Together, these three commodities represented 70 percent of reported shipments from California during the quarter.

Rates

The quarterly average truck rate for shipments between 501 and 1,500 miles was \$2.59 per mile, 19 percent lower than the previous quarter, and 13 percent lower than the same quarter last year.

Truck Overview

Diesel fuel prices averaged \$3.76 per gallon, 6 percent lower than the previous quarter, but 3 percent higher than the same period last year. On average, shippers reported adequate truck availability in all California districts throughout the quarter. In February, all reporting districts reported slight surplus availability conditions.

Table 13: Reported Top Five Commodities Shipped from California (1,000 tons)

| Commodity | 1st Quarter 2019 | Share of California Total | Previous Quarter | Same Quarter Last Year | Current Quarter as % change from: | |
|-------------------------|------------------|---------------------------|------------------|------------------------|-----------------------------------|--------------------|
| | | | | | Previous Qtr | Same Qtr Last Year |
| Oranges | 790 | 36% | 377 | 765 | 110% | 3% |
| Tangerines | 410 | 19% | 9 | 323 | 4296% | 27% |
| Lemons | 330 | 15% | 214 | 172 | 54% | 92% |
| Celery | 110 | 5% | 211 | 109 | -48% | 1% |
| Carrots | 100 | 5% | 108 | 77 | -7% | 30% |
| Top 5 Total | 1,740 | 80% | 920 | 1,446 | 89% | 20% |
| California Total | 2,170 | 100% | 2,333 | 1,957 | -7% | 11% |

Source: AMS Transportation Services Division analysis of AMS Specialty Crops Program Market News data.

"-" indicates no reported shipments during the quarter.



AGRICULTURAL REFRIGERATED TRUCK QUARTERLY

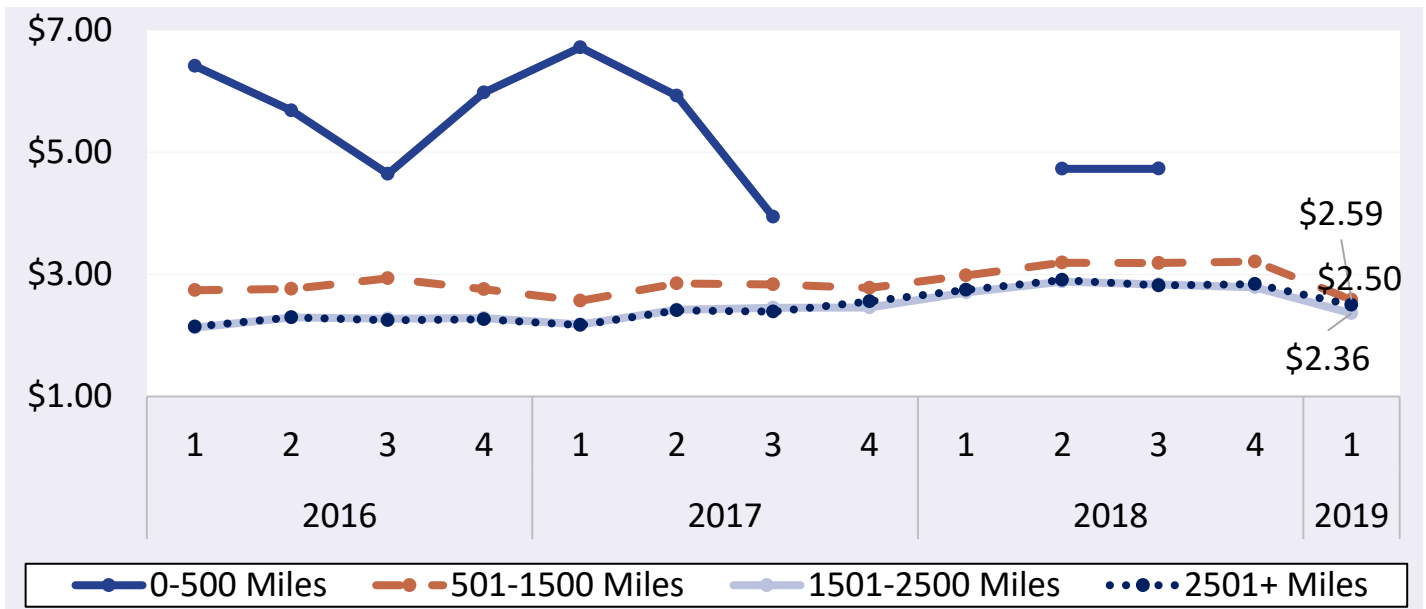
Quarter 1, 2019

Table 14: California Truck Overview (Availability Rating: 1=Surplus to 5=Shortage)

| Region/Reporting District | Availability Rating, 1=Surplus to 5=Shortage | | | |
|---------------------------------------|--|-------------|-------------|-------------|
| | January | February | March | 1st Quarter |
| Central San Joaquin Valley California | n/a | n/a | 3.00 | 3.00 |
| Kern District, California | 3.20 | 2.00 | 3.00 | 2.73 |
| Oxnard District California | 3.20 | 2.00 | 3.00 | 2.73 |
| Salinas-Watsonville, California | n/a | n/a | 3.00 | 3.00 |
| Santa Maria, California | 3.20 | 2.00 | 3.00 | 2.73 |
| South District, California | 3.00 | 2.00 | 2.00 | 2.33 |
| Regional Average Availability | 3.15 | 2.00 | 2.83 | 2.66 |
| Diesel Fuel Price (\$/gallon) | 3.75 | 3.73 | 3.79 | 3.76 |

Source: AMS Transportation Services Division analysis of AMS Specialty Crops Program Market News data.
 “-” indicates no reported shipments during the quarter.

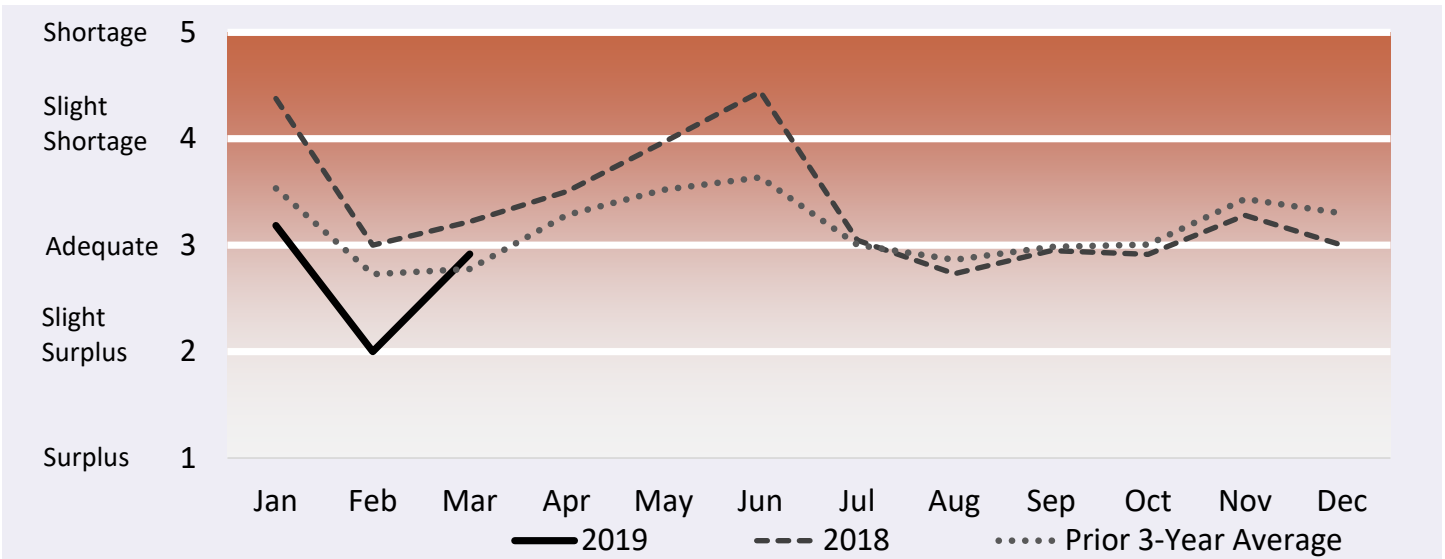
Figure 9: California Truck Rates (\$/Mile by Distance Traveled)



Source: AMS Transportation Services Division analysis of AMS Specialty Crops Program Market News data.
 “-” indicates no reported shipments during the quarter.
 Gaps in the chart lines are the result of quarters with no reported data for the region.



Figure 10: Refrigerated Truck Availability Monthly Ratings for California



Source: AMS Transportation Services Division analysis of AMS Specialty Crops Program Market News data.

"-" indicates no reported shipments during the quarter.

Gaps in the chart lines are the result of quarters with no reported data for the region.



Pacific Northwest

Volume

Total reported shipments of fruits and vegetables from the Pacific Northwest (PNW) during the first quarter of 2019 were 1.86 million tons, an increase of 1 percent from the same quarter last year. Changes in volume varied among the top five commodities. Shipments of apples, potatoes, and rhubarb fell while dry onion and pear shipments increased.

Rates

The quarterly average truck rate for shipments between 501 and 1,500 miles was \$2.25 per mile, 9 percent lower than the previous quarter, and 5 percent lower than the same quarter last year.

Truck Overview

Diesel fuel prices averaged \$3.13 per gallon, 10 percent lower than last quarter, but 1 percent higher than the same period last year. Across the board, shippers reported adequate truck availability in each reporting region in the PNW.

Table 15: Reported Top Five Commodities Shipped from the PNW (1,000 tons)

| Commodity | 1st Quarter 2019 | Share of PNW Total | Previous Quarter | Same Quarter Last Year | Current Quarter as % change from: | |
|--------------------|------------------|--------------------|------------------|------------------------|-----------------------------------|--------------------|
| | | | | | Previous Qtr | Same Qtr Last Year |
| Apples | 722 | 39% | 635 | 806 | 14% | -10% |
| Potatoes | 522 | 28% | 542 | 554 | -4% | -6% |
| Onions Dry | 464 | 25% | 463 | 364 | 0% | 28% |
| Pears | 155 | 8% | 167 | 119 | -8% | 30% |
| Rhubarb | 0.1 | 0% | 0 | 0 | - | -21% |
| Top 5 Total | 1,863 | 100% | 1,807 | 1,842 | 3% | 1% |
| PNW Total | 1,863 | 100% | 1,809 | 1,842 | 3% | 1% |

Source: AMS Transportation Services Division analysis of AMS Specialty Crops Program Market News data.

"-" indicates no reported shipments during the quarter.



AGRICULTURAL REFRIGERATED TRUCK QUARTERLY

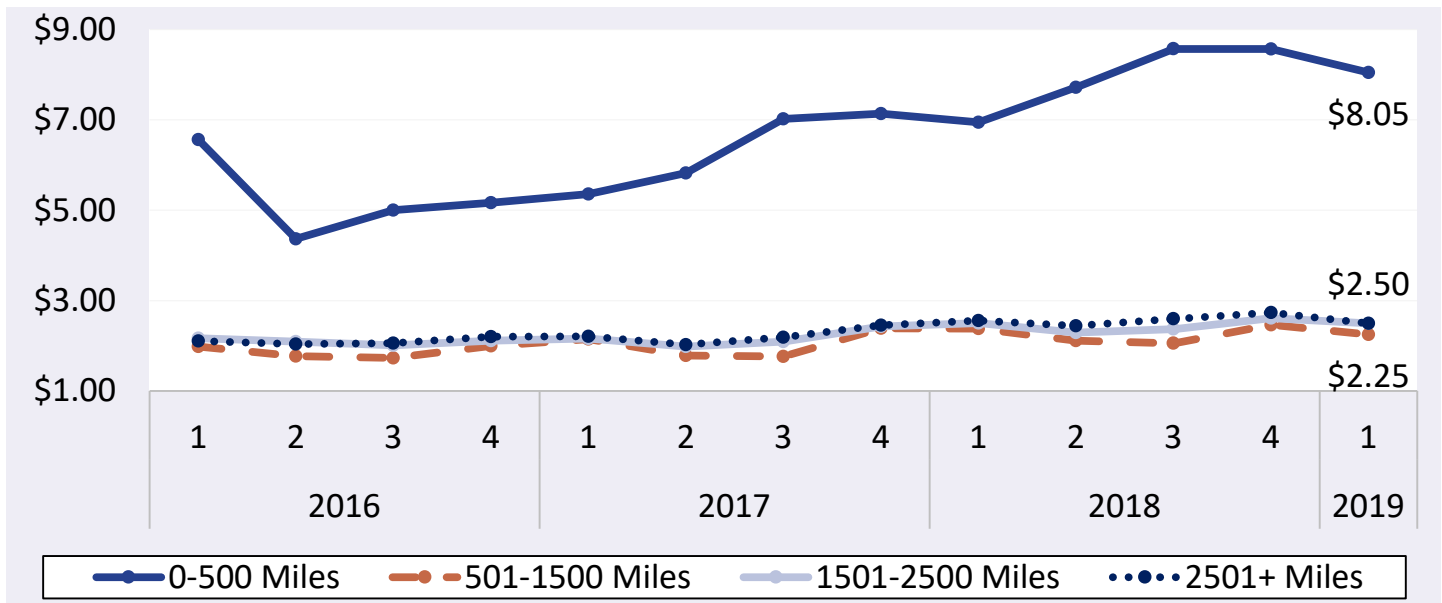
Quarter 1, 2019

Table 16: PNW Truck Overview (Availability Rating: 1=Surplus to 5=Shortage)

| Region/Reporting District | Availability Rating, 1=Surplus to 5=Shortage | | | |
|---|--|-------------|-------------|-------------|
| | January | February | March | 1st Quarter |
| Columbia Basin, Washington | 3.00 | 3.00 | 3.00 | 3.00 |
| Idaho And Malheur County, Oregon | 3.00 | 3.00 | 3.00 | 3.00 |
| Upper Valley, Twin Falls-Burley District, Idaho | 3.00 | 3.00 | 3.00 | 3.00 |
| Yakima Valley & Wenatchee District, Washington | 3.00 | 3.00 | 3.00 | 3.00 |
| Regional Average Availability | 3.00 | 3.00 | 3.00 | 3.00 |
| Diesel Fuel Price (\$/gallon) | 3.13 | 3.10 | 3.15 | 3.13 |

Source: AMS Transportation Services Division analysis of AMS Specialty Crops Program Market News data.
 “-” indicates no reported shipments during the quarter.

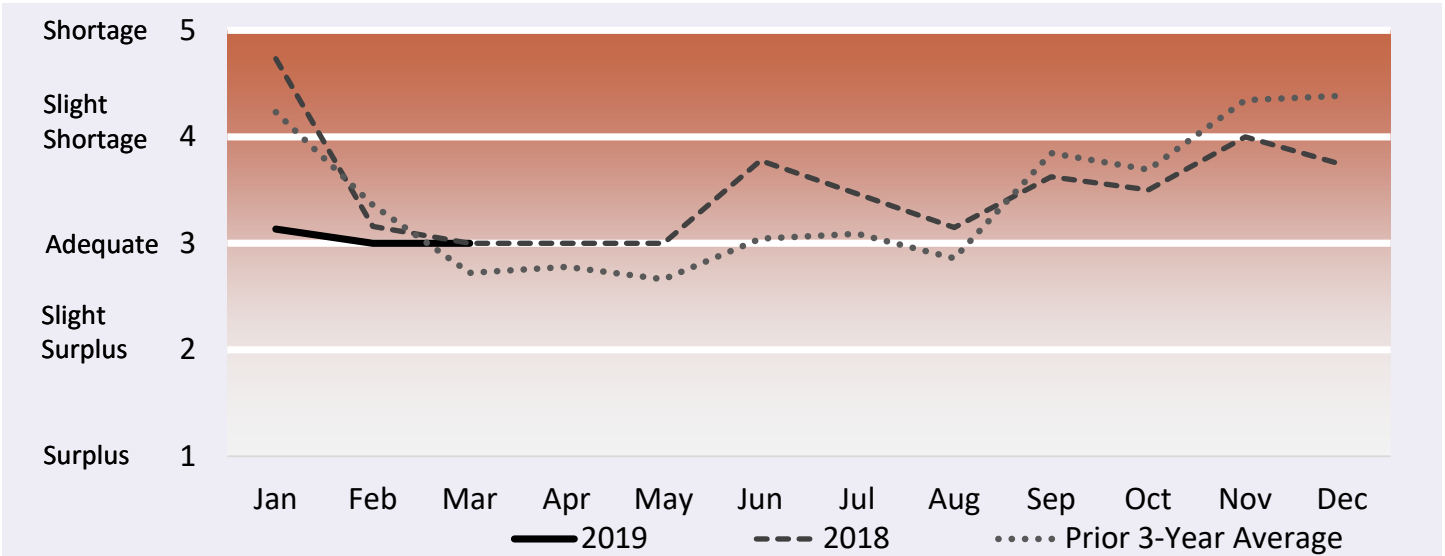
Figure 11: PNW Truck Rates (\$/Mile by Distance Traveled)



Source: AMS Transportation Services Division analysis of AMS Specialty Crops Program Market News data.
 “-” indicates no reported shipments during the quarter.
 Gaps in the chart lines are the result of quarters with no reported data for the region.



Figure 12: Refrigerated Truck Availability Monthly Ratings for the PNW



Source: AMS Transportation Services Division analysis of AMS Specialty Crops Program Market News data.

"-" indicates no reported shipments during the quarter.

Gaps in the chart lines are the result of quarters with no reported data for the region.



Arizona

Volume

During the first quarter of 2019, total reported shipments of fruits and vegetables from Arizona were 830 thousand tons, up 10 percent from the same quarter last year. The sum of the top five commodities increased 9 percent from the same quarter last year. Decreases in processed lettuce and celery shipments could not offset strong increases in iceberg lettuce, romaine lettuce, and broccoli shipments which were up 16, 8, and 35 percent, respectively.

Rates

The quarterly average truck rate for shipments between 501 and 1,500 miles was \$3.43 per mile, 15 percent lower than the previous quarter, but 10 percent higher than the same quarter last year.

Truck Overview

Diesel fuel prices averaged \$3.13 per gallon, 10 percent lower than the previous quarter, but 1 percent higher than the same period last year. Shippers in Arizona reported adequate truck availability in January and March, and slight surplus conditions in February.

Table 17: Reported Top Five Commodities Shipped from Arizona (1,000 tons)

| Commodity | 1st Quarter 2019 | Share of Arizona Total | Previous Quarter | Same Quarter Last Year | Current Quarter as % change from: | |
|---------------------------|------------------|------------------------|------------------|------------------------|-----------------------------------|--------------------|
| | | | | | Previous Qtr | Same Qtr Last Year |
| Lettuce, Iceberg | 256 | 31% | 149 | 221 | 71% | 16% |
| Lettuce, Romaine | 240 | 29% | 119 | 221 | 102% | 8% |
| Lettuce, Processed | 108 | 13% | 67 | 114 | 62% | -5% |
| Celery | 39 | 5% | 6 | 39 | 585% | -1% |
| Broccoli | 37 | 5% | 19 | 28 | 99% | 35% |
| Top 5 Total | 680 | 82% | 359 | 623 | 89% | 9% |
| Arizona Total | 830 | 100% | 479 | 756 | 73% | 10% |

Source: AMS Transportation Services Division analysis of AMS Specialty Crops Program Market News data.

"-" indicates no reported shipments during the quarter.



AGRICULTURAL REFRIGERATED TRUCK QUARTERLY

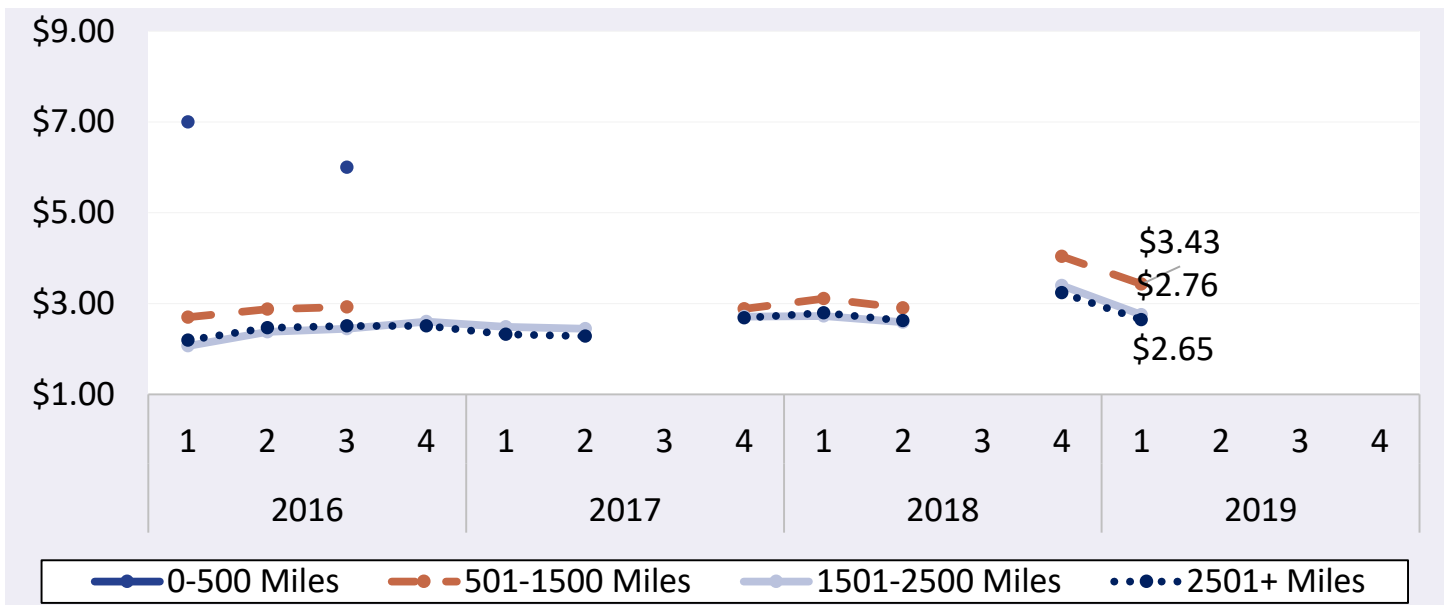
Quarter 1, 2019

Table 18: Arizona Truck Overview (Availability Rating: 1=Surplus to 5=Shortage)

| Region/Reporting District | Availability Rating, 1=Surplus to 5=Shortage | | | |
|-------------------------------|--|----------|-------|-------------|
| | January | February | March | 1st Quarter |
| Western Arizona | 3.20 | 2.00 | 3.00 | 2.73 |
| Regional Average Availability | 3.20 | 2.00 | 3.00 | 2.73 |
| Diesel Fuel Price (\$/gallon) | 3.13 | 3.10 | 3.15 | 3.13 |

Source: AMS Transportation Services Division analysis of AMS Specialty Crops Program Market News data.
 “-” indicates no reported shipments during the quarter.

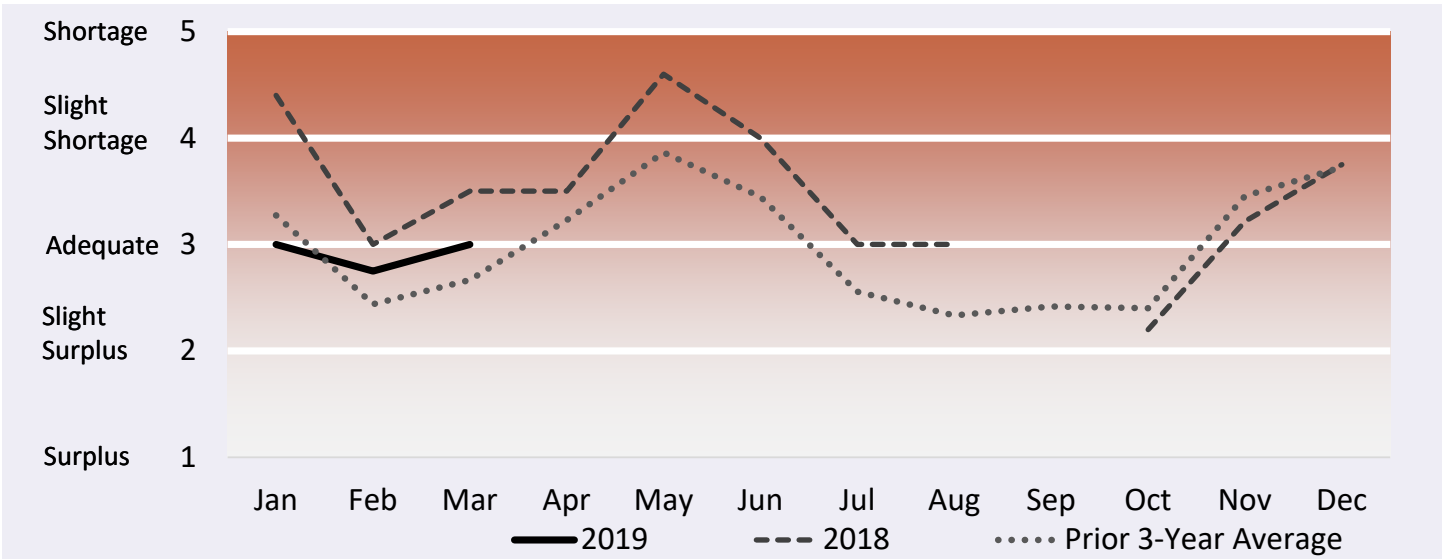
Figure 13: Arizona Truck Rates (\$/Mile by Distance Traveled)



Source: AMS Transportation Services Division analysis of AMS Specialty Crops Program Market News data.
 “-” indicates no reported shipments during the quarter.
 Gaps in the chart lines are the result of quarters with no reported data for the region.



Figure 14: Refrigerated Truck Availability Monthly Ratings for Arizona



Source: AMS Transportation Services Division analysis of AMS Specialty Crops Program Market News data.
 “-” indicates no reported shipments during the quarter.
 Gaps in the chart lines are the result of quarters with no reported data for the region.



Florida

Volume

Total reported shipments of fruits and vegetables from Florida during the first quarter of 2019 were 707 thousand tons, down 2 percent from the same quarter last year. The sum of the top five commodities also decreased 8 percent from the same quarter last year. Four of the top five commodities including tomatoes (down 8 percent), strawberries (down 20 percent), sweet corn (down 10 percent), and cabbage (down 2 percent) decreased compared with the previous year. However, shipments of potatoes increased 16 percent.

Rates

The quarterly average truck rate for shipments between 501 and 1,500 miles was \$2.28 per mile, 6 percent higher than the previous quarter, but 13 percent lower than the same quarter last year.

Truck Overview

Diesel fuel prices averaged \$2.93 per gallon, 7 percent lower than the previous quarter, but 1 percent higher than the same period last year. On average, shippers in Florida reported slight surplus conditions throughout the quarter.

Table 19: Reported Top Five Commodities Shipped from Florida (1,000 tons)

| Commodity | 1st Quarter 2019 | Share of Florida Total | Previous Quarter | Same Quarter Last Year | Current Quarter as % change from: | |
|----------------------|------------------|------------------------|------------------|------------------------|-----------------------------------|--------------------|
| | | | | | Previous Qtr | Same Qtr Last Year |
| Tomatoes | 129 | 18% | 110 | 140 | 17% | -8% |
| Strawberries | 83 | 12% | 13 | 104 | 522% | -20% |
| Corn-Sweet | 68 | 10% | 28 | 75 | 139% | -10% |
| Cabbage | 63 | 9% | - | 64 | - | -2% |
| Potatoes | 47 | 7% | 0 | 41 | - | 16% |
| Top 5 Total | 389 | 55% | 151 | 424 | 157% | -8% |
| Florida Total | 707 | 100% | 371 | 719 | 91% | -2% |

Source: AMS Transportation Services Division analysis of AMS Specialty Crops Program Market News data. “-” indicates no reported shipments during the quarter.



AGRICULTURAL REFRIGERATED TRUCK QUARTERLY

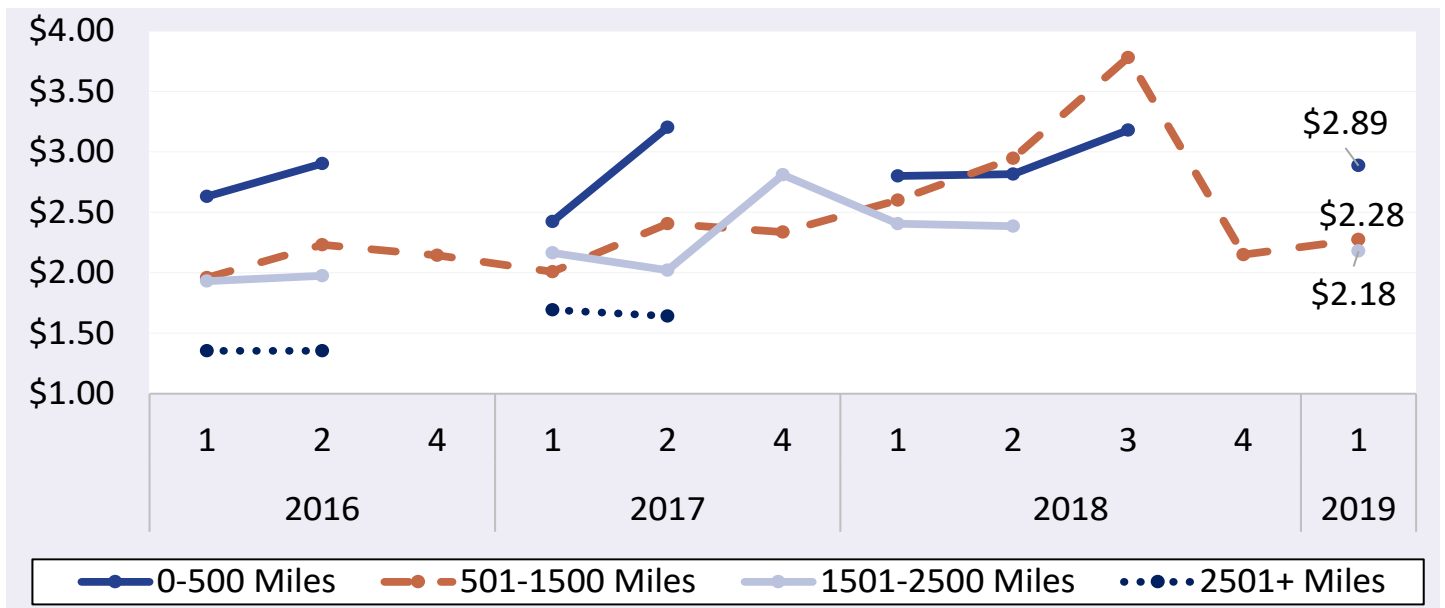
Quarter 1, 2019

Table 20: Florida Truck Overview (Availability Rating: 1=Surplus to 5=Shortage)

| Region/Reporting District | Availability Rating, 1=Surplus to 5=Shortage | | | |
|-------------------------------|--|----------|-------|-------------|
| | January | February | March | 1st Quarter |
| Central & South Florida | 2.40 | 2.75 | 2.25 | 2.47 |
| Regional Average Availability | 2.40 | 2.75 | 2.25 | 2.47 |
| Diesel Fuel Price (\$/gallon) | 2.90 | 2.91 | 2.99 | 2.93 |

Source: AMS Transportation Services Division analysis of AMS Specialty Crops Program Market News data.
 “-” indicates no reported shipments during the quarter.

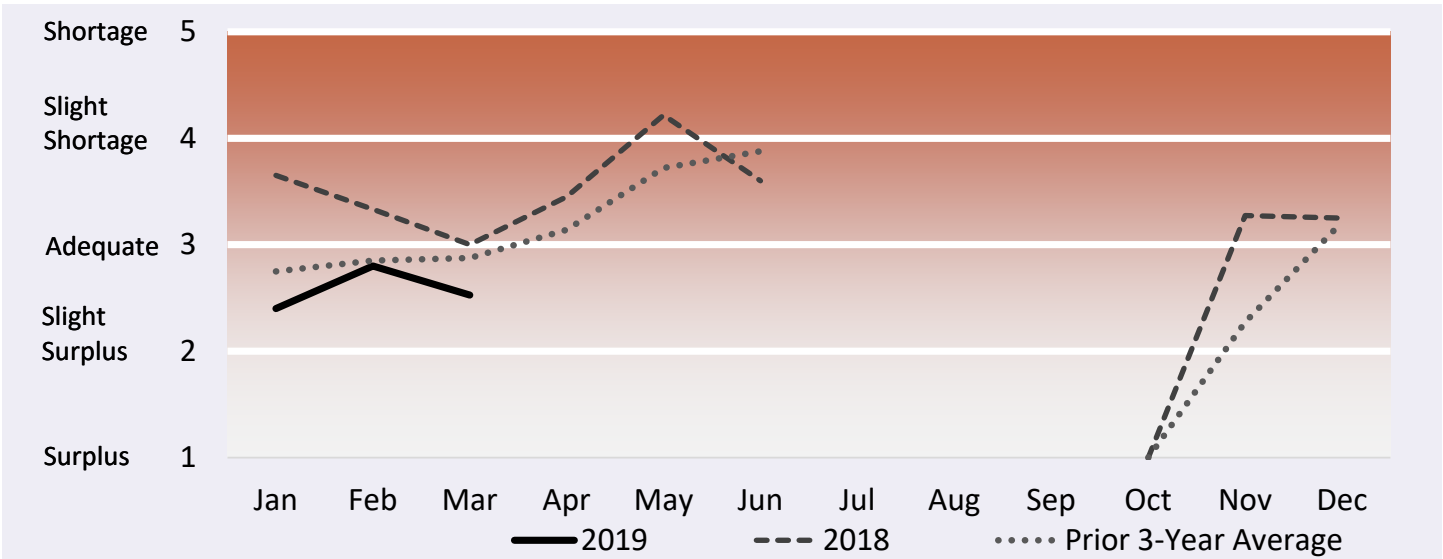
Figure 15: Florida Truck Rates (\$/Mile by Distance Traveled)



Source: AMS Transportation Services Division analysis of AMS Specialty Crops Program Market News data.
 “-” indicates no reported shipments during the quarter.
 Gaps in the chart lines are the result of quarters with no reported data for the region.



Figure 16: Refrigerated Truck Availability Monthly Ratings for Florida



Source: AMS Transportation Services Division analysis of AMS Specialty Crops Program Market News data.
 “-” indicates no reported shipments during the quarter.
 Gaps in the chart lines are the result of quarters with no reported data for the region.



TERMS AND REFERENCES

Data Sources

This information is compiled from the weekly Specialty Crops Truck Rate Report by USDA, Agricultural Marketing Service (AMS), Specialty Crops Program, Market News Division. The website is:

<https://www.marketnews.usda.gov/mnp/fv-home>.

Regional Markets

For the regional markets, some States are grouped into producing regions. The Pacific Northwest region includes Idaho, Oregon, and Washington. The Great Lakes region includes Michigan, Minnesota, and Wisconsin. The Southeast region includes North Carolina, South Carolina and Georgia.

Shipment Volumes

Truck shipments for all commodities and origins are not available. Those obtainable are reported, but should not be interpreted as representing complete movements of a commodity. Truck shipments from all States are collected at shipping points and include both interstate and intrastate movements. They are obtained from various sources, including Federal marketing orders, administrative committees, Federal State Inspection Service, and shippers. Volume amounts are represented in 10,000 pound units, or 1,000 10-lb packages but are converted to 1,000 tons for this report. Mexican border crossings through Arizona and Texas data is obtained from the Department of Homeland Security (DHS), U.S. Customs and Border and Protection (CBP) through USDA, AMS, Market News.

Rates

This information is compiled from the weekly Specialty Crops Truck Rate Report. Rates quoted represent open (spot) market rates that shippers or receivers pay depending on basis of sale, per load, including truck brokers fees for shipments in truck load volume to a single destination. Extra charges for delivery to terminal markets, multipickup and multidrop shipments are not included unless otherwise stated. Rates are based on the most usual loads in 48-53 foot trailers from the origin shipping area to the destination receiving city. In areas where rates are based on package rates, per load rates were derived by multiplying the package rate by the number of packages in the most usual load in a 48-53 foot trailer. Slightly cheaper rates will be reported during Quarters 2 and 3 as about 50 percent of onion shipments from California are hauled on open flatbed trailers. During Quarter 3, less than 20 percent of onions hauled from Washington, Idaho, and Oregon are on open flatbeds.

Regional Rates

Rate data for 10 destination markets are used to calculate average origin regional rates.

National Rates

The national rates reflect the average of the regional rates, separated by mileage category and weighted by volume between origin and destination.



CONTACT INFORMATION

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Related Websites

USDA's Agricultural Transportation Open Data Platform

<https://agtransport.usda.gov/>

Specialty Crops Program

<http://www.ams.usda.gov/about-ams/programs-offices/specialty-crops-program>

Specialty Crops Truck Rate Report

<http://www.ams.usda.gov/market-news/fruits-vegetables>

Economic Research Service Vegetable and Pulses

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National Agricultural Statistics Service, Crops

http://www.nass.usda.gov/Statistics_by_Subject/index.php?sector=CROPS

Refrigerated Truck Quarterly Datasets

<https://www.ams.usda.gov/services/transportation-analysis/agricultural-refrigerated-truck-quarterly-datasets>

Protecting Perishable Foods During Transport by Truck and Rail

<https://edis.ifas.ufl.edu/pdffiles/HS/HS132800.pdf>

Preferred Citation

U.S. Department of Agriculture, Agricultural Marketing Service. Agricultural Refrigerated Truck Quarterly Report. November 2019. Web. <<http://dx.doi.org/10.9752/TS051.11-2019>>

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