

## **California Apiary Inspection and Pest Exclusion Activity Report 2022/2023 Import Season**

### **Background**

Millions of colonies of live honey bees (*Apis mellifera*) are trucked into California each year. Most honey bees are brought into the state to facilitate crop pollination – most notably almonds. Importations typically begin in September, as the weather cools in northern states and concludes by early March. At the conclusion of the pollination season in California, the bees are typically moved to other states to pollinate other crops or produce honey.

The migratory nature of beekeeping as well as the environments where bee colonies are placed (usually in orchards or pastures) places them at high risk for becoming infested with invasive pests which may hitchhike to and cause infestations in new places. In fact, of the 992 interceptions of actionable invasive species taken from commercial shipments at California Border Protection Stations (BPS) in the 2022/23 apiary import season, 139 interceptions came from bee colonies. This number, representing 14 percent of all interceptions, makes bee colonies one of the highest risk pathways for introducing invasive pests into California.

Due to the high pest introduction risk, bee colonies are subject to inspection not only prior to entering the state, but also at destination by county agricultural commissioners.

### **Data Sources and Parameters**

This report analyzes inspection and pest find data pertaining to live honey bees moved into California during the 2022/2023 apiary import season (September 1, 2022 through March 15, 2023). The data used for this report was generated at California's Border Protection Stations (BPS) via the Pest Exclusion Information Management (PEIM) system including Warning Notices, Rejection Notices, and Pest Damage Reports issued. When relevant, 2021/2022 statistics are included for comparison purposes.

## Importations

The data below represents all apiary shipments entering through BPS. A shipment is defined as any amount of bee colonies transported by a single truck. Total imported shipments increased by 1.37% in the 2021/22 season as compared to the 2020/21 season.

|                          | 2021/22 | 2022/23 | INCREASE/DECREASE |
|--------------------------|---------|---------|-------------------|
| <b>SHIPMENTS</b>         | 4,979   | 4,658   | -321              |
| <b>COLONIES (HIVES)*</b> | 2.05M   | 1.90M   | -131,931          |

\*Estimate based on a historical average of 411 hives per shipment

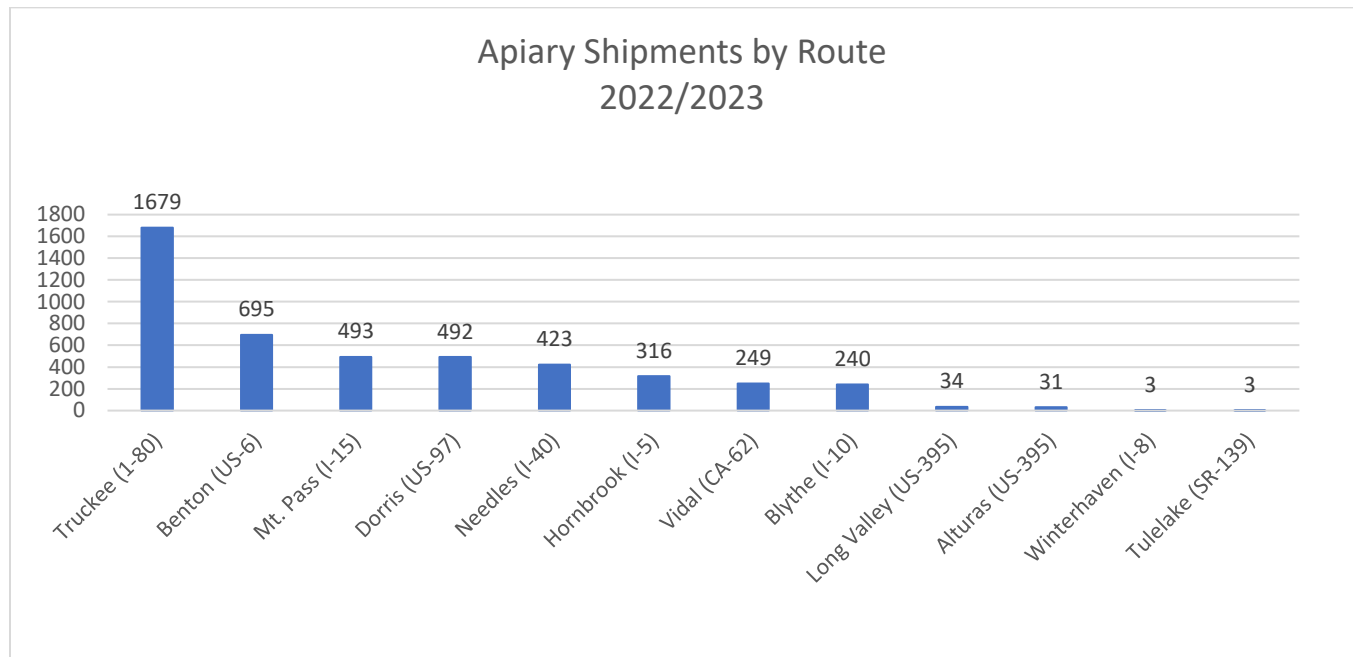
## Importations by Origin

During the 2022/23 season, shipments entered through BPS from 39 states. The table below details the origins of shipments from the top 20 states. More than 38 percent of the shipments in the 2021/22 season arrived from either Idaho or North Dakota.

| Origin State | 2021/22      | 2022/23      | Change      | % Change      |
|--------------|--------------|--------------|-------------|---------------|
| ID           | 1109         | 1047         | -62         | -5.59%        |
| ND           | 705          | 728          | 23          | 3.26%         |
| FL           | 487          | 321          | -166        | -34.09%       |
| OR           | 445          | 416          | -29         | -6.52%        |
| WA           | 414          | 405          | -9          | -2.17%        |
| TX           | 239          | 215          | -24         | -10.04%       |
| SD           | 227          | 326          | 99          | 43.61%        |
| MT           | 221          | 236          | 15          | 6.79%         |
| MN           | 182          | 160          | -22         | -12.09%       |
| UT           | 129          | 121          | -8          | -6.20%        |
| GA           | 124          | 98           | -26         | -20.97%       |
| MI           | 92           | 49           | -43         | -46.74%       |
| WY           | 75           | 60           | -15         | -20.00%       |
| CO           | 67           | 50           | -17         | -25.37%       |
| NE           | 65           | 76           | 11          | 16.92%        |
| AZ           | 62           | 40           | -22         | -35.48%       |
| OK           | 50           | 42           | -8          | -16.00%       |
| WI           | 46           | 54           | 8           | 17.39%        |
| LA           | 46           | 36           | -10         | -21.74%       |
| NV           | 34           | 50           | 16          | 47.06%        |
| Other        | 156          | 128          | -28         | -17.95%       |
| <b>Total</b> | <b>4,975</b> | <b>4,658</b> | <b>-317</b> | <b>-6.37%</b> |

### Importations by Route

During the 2022/23 season, shipments of live bees entered through 12 of CDFA's 16 BPS. Consistent with past years, the Truckee BPS, located on Interstate 80, was by far the most utilized route in terms of volume – receiving 1,679 or 36% of all shipments.



### Inspections/Pest Finds

Except for shipments participating in the North Dakota and Idaho Origin Inspection Programs (see page 6), all shipments were inspected for hitchhiking pests at the BPS during the 2022/23 shipping season.

#### Summary of Pest Finds

The table below summarizes pest finds at all BPS. The term “pests found” equates to one or more species of viable organisms found during inspection. During the 2022/23 season, pest finds occurred on 1.93% of incoming shipments. This represents a decrease in the percentage of pest infested shipments of 0.82% as compared to the 2020/21 season.

|                                        | 2021/22 | 2022/23 | Change |
|----------------------------------------|---------|---------|--------|
| <i>Shipments with No Pests Found</i>   | 4,883   | 4,540   | -343   |
| <i>Shipments with Pests Found</i>      | 96      | 118     | 22     |
| <i>Total Shipments</i>                 | 4,979   | 4,658   | -321   |
| <i>% of shipments with Pests Found</i> | 1.93%   | 2.53%   | 0.61%  |

### Disposition of Pest Infested Shipments by State

When pest organisms are found infesting a shipment, the pest is tentatively identified via digital imaging by scientists at CDFA's Plant Pest Diagnostics Lab. If the organism is identified as being state actionable (i.e., a pest being regulated by state quarantine laws), the infestation must be removed or the shipment returned out of state. The pest *Aethina tumida*, or small hive beetle (SHB), is not regulated at the state level but is of concern to certain counties. Shipments infested with SHB may be allowed into certain counties per county policy.

The table below details the disposition of all pest infested shipments for the 2022/23 season. See footnotes for additional detail.

| Origin State | All Rejections Due to Pest Finds | Allowed Entry           |                          |             |                       | Returned Out of State (5) |
|--------------|----------------------------------|-------------------------|--------------------------|-------------|-----------------------|---------------------------|
|              |                                  | Non-Actionable Pest (1) | SHB Accepting County (2) | Cleaned (3) | Ant-Free Protocol (4) |                           |
| CO           | 2                                | 1                       | 0                        | 0           | 0                     | 1                         |
| FL           | 64                               | 18                      | 7                        | 23          | 1                     | 15                        |
| GA           | 7                                | 0                       | 1                        | 6           | 0                     | 0                         |
| IN           | 1                                | 0                       | 1                        | 0           | 0                     | 0                         |
| LA           | 6                                | 1                       | 2                        | 3           | 0                     | 0                         |
| MI           | 1                                | 0                       | 0                        | 1           | 0                     | 0                         |
| MN           | 2                                | 2                       | 0                        | 0           | 0                     | 0                         |
| MS           | 1                                | 1                       | 0                        | 0           | 0                     | 0                         |
| ND           | 3                                | 1                       | 1                        | 1           | 0                     | 0                         |
| NE           | 1                                | 1                       | 0                        | 0           | 0                     | 0                         |
| OK           | 3                                | 0                       | 0                        | 3           | 0                     | 0                         |
| SC           | 1                                | 1                       | 0                        | 0           | 0                     | 0                         |
| SD           | 1                                | 0                       | 0                        | 1           | 0                     | 0                         |
| TX           | 22                               | 1                       | 1                        | 18          |                       | 2                         |
| UT           | 1                                | 1                       | 0                        | 0           | 0                     | 0                         |
| WI           | 2                                | 0                       | 0                        | 2           | 0                     | 0                         |
| Total        | 118                              | 28                      | 13                       | 58          | 1                     | 18                        |

(1) Pest identified as non-actionable. Shipment allowed entry.

(2) Pest identified as small hive beetle and allowed entry per county policy.

(3) Pest identified as actionable and mitigated by cleaning. Allowed entry after re-inspection.

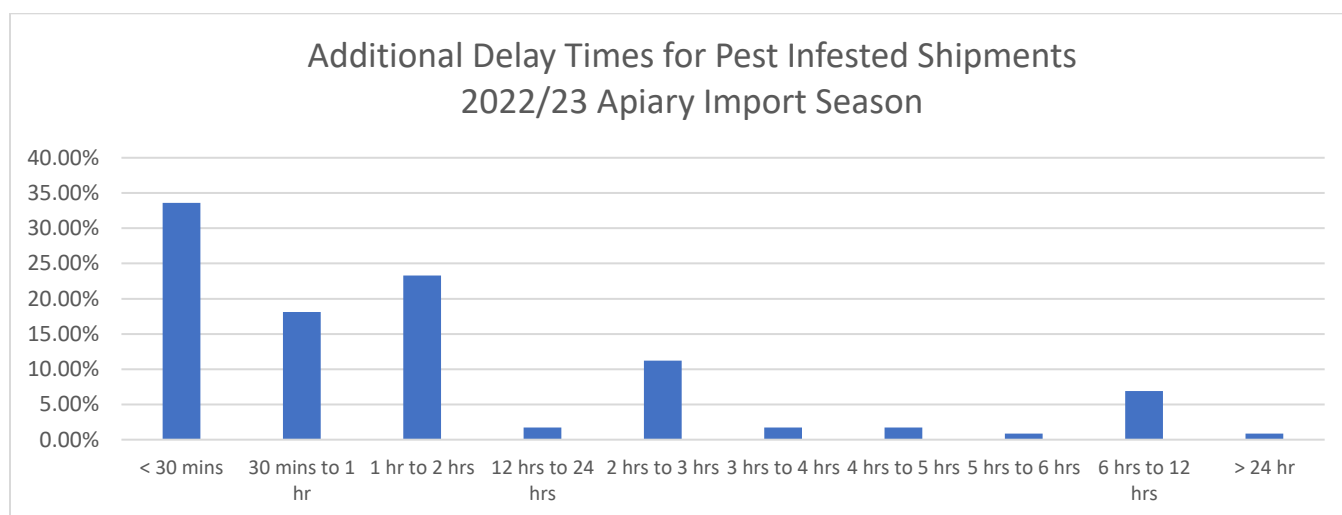
(4) Shipment pre-inspected under Ant-free Certification Program (see page 6 and 7), pest identified as actionable worker ants but within tolerance. Shipment allowed entry.

(5) Pest identified as actionable and pest could not be mitigated by cleaning or driver declined to attempt to mitigate by cleaning. Shipment refused entry and returned out of state.

### Delay of Pest-Infested Shipments

Shipments infested with hitchhiking pests are subject to additional delays while pests are identified and, if necessary, cleaning of the shipment is attempted. The graph below represents approximate delay times for pest infested shipments during the 2022/23 season based on time in and time out data collected on Rejection Notices.

This graph does not account for normal delays for all shipments due to inspection and given traffic flow at time of entry. On average, pest infested shipments were delayed two hours and nineteen minutes longer than shipments with no pest finds. Most pest-infested shipments (51.72%) had an additional delay of under one hour.



### Actionable Pests

A total of 139 actionable pests were intercepted on incoming shipments of bee colonies in the 2022/23 season. Because often a single shipment may be infested with more than one actionable pest, it is difficult to make a direct correlation between the number of actionable pests detected and the number of shipments inspected with currently available data. Although actionable pest finds were reduced in the 2022/23 season, the information demonstrates the continued high pest risk, both in terms of pest numbers and pest variety, presented by incoming apiary shipments.

| Pest                  | 2021/22 Occurrences | 2022/23 Occurrences | Decrease or Increase |
|-----------------------|---------------------|---------------------|----------------------|
| Small Hive Beetle     | 32                  | 34                  | 2                    |
| Carpenter Ants        | 63                  | 25                  | -38                  |
| Bagworm Moths         | 18                  | 33                  | 15                   |
| Red Imported Fire Ant | 10                  | 26                  | 16                   |
| Other Ants            | 5                   | 12                  | 7                    |
| Weeds                 | 5                   | 1                   | -4                   |
| Termites              | 3                   | 0                   | -3                   |
| Other Pests           | 7                   | 8                   | 1                    |
| Total                 | 143                 | 139                 | -4                   |

## Pre-Entry Certification

### Origin Inspection Program

The Origin Inspection Program for apiary shipments began as a pilot project in North Dakota for the 2018/19 season. Under this voluntary program, bee colonies are inspected for invasive pests at origin in lieu of inspecting them at the California border. The goal of the program is to minimize delays and the risk of rejection for bee shipments entering from states that present a low pest risk, while improving safety conditions, reducing workload, and easing traffic congestion at the BPS.

As a safeguard, shipments entering under this program continue to be subject to inspection by county agricultural commissioners at destination. However, to date, no actionable pests have been intercepted by counties from shipments inspected at origin.

After a successful partnership with North Dakota in 2018/19, the program was expanded to include Idaho in 2019/20 and Montana in 2022/23. As indicated by the table below, 834 shipments were inspected at origin in the 2022/23 season. This represents a 8.59% increase from 768 shipments in the 2021/22 season. This trend of increased participation demonstrates beekeepers feel this program is of benefit.

| State            | Total Apiary Shipments | Shipments Inspected at Origin | Percent of shipments Inspected at Origin |
|------------------|------------------------|-------------------------------|------------------------------------------|
| 2022/2023 Season |                        |                               |                                          |
| Idaho            | 1052                   | 625                           | 59.41%                                   |
| North Dakota     | 734                    | 166                           | 22.62%                                   |
| Montana          | 236                    | 37                            | 15.68%                                   |
| 2021/2022 Season |                        |                               |                                          |
| Idaho            | 1109                   | 602                           | 54.28%                                   |
| North Dakota     | 705                    | 166                           | 23.55%                                   |

### Ant-Free Certification Program

There are currently 18 states eligible to participate in the Ant-free Certification Program: Arkansas, Florida, Georgia, Kansas, Louisiana, Maryland, Michigan, Mississippi, Nevada, North Carolina, Oklahoma, Pennsylvania, South Carolina, Tennessee, Utah, Vermont, West Virginia, and Wisconsin.

This program differs from the Origin Inspection Program outlined above in that shipments entering under this program are still inspected upon entry at the BPS. However, shipments certified as being “ant-free” have mitigations in place at origin to prevent introduction of ant colonies and are given the advantage of having a tolerance of up to 5 worker ants being found during BPS inspection without rejection.

In the 2022/23 shipping season, 815 shipments arrived from eligible states. Of these, 313 (38.40%) were certified by 16 of the 18 participating eligible states (no certificates were received from two eligible states). Of the shipments from participating states, pests were found on 7.17% the non-certified shipments vs pest finds on 7.99% of the certified shipments. The table on the following page details these statistics.

**Summary of Shipments Entering under Ant-Free Certification  
2022/2023 Season**

| State        | Non-Certified Shipments |             |                 |                 | Certified Shipments |             |                 |                 |
|--------------|-------------------------|-------------|-----------------|-----------------|---------------------|-------------|-----------------|-----------------|
|              | No Pests Found          | Pests Found | Total Shipments | % of Pest Finds | No Pests Found      | Pests Found | Total Shipments | % of Pest Finds |
| Arkansas     | 1                       | 0           | 1               | 0.00%           | 9                   | 0           | 9               | 0.00%           |
| Florida      | 133                     | 31          | 164             | 18.90%          | 142                 | 14          | 156             | 8.97%           |
| Georgia      | 27                      | 2           | 29              | 6.90%           | 65                  | 4           | 69              | 5.80%           |
| Kansas       | 2                       | 0           | 2               | 0.00%           | 0                   | 0           | 0               | 0.00%           |
| Louisiana    | 2                       | 0           | 2               | 0.00%           | 29                  | 6           | 35              | 17.14%          |
| Maryland     | 3                       | 0           | 3               | 0.00%           | 1                   | 0           | 1               | 0.00%           |
| Michigan     | 31                      | 1           | 32              | 3.13%           | 17                  | 1           | 18              | 5.56%           |
| Mississippi  | 4                       | 0           | 4               | 0.00%           | 5                   | 0           | 5               | 0.00%           |
| Nevada       | 49                      | 0           | 49              | 0.00%           | 1                   | 0           | 1               | 0.00%           |
| N Carolina   | 2                       | 0           | 2               | 0.00%           | 5                   | 0           | 5               | 0.00%           |
| Oklahoma     | 40                      | 2           | 42              | 4.76%           | 0                   | 0           | 0               | 0.00%           |
| Pennsylvania | 3                       | 0           | 3               | 0.00%           | 0                   | 0           | 0               | 0.00%           |
| S Carolina   | 1                       | 0           | 1               | 0.00%           | 5                   | 0           | 5               | 0.00%           |
| Utah         | 118                     | 0           | 118             | 0.00%           | 1                   | 0           | 1               | 0.00%           |
| Wisconsin    | 47                      | 0           | 47              | 0.00%           | 7                   | 0           | 7               | 0.00%           |
| W Virginia   | 3                       | 0           | 3               | 0.00%           | 1                   | 0           | 1               | 0.00%           |
| <b>Total</b> | <b>466</b>              | <b>36</b>   | <b>502</b>      | <b>7.17%</b>    | <b>288</b>          | <b>25</b>   | <b>313</b>      | <b>7.99%</b>    |