

California Apiary Inspection and Pest Exclusion Activity Report 2020/2021 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 pollenate 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 660 interceptions of actionable invasive species taken from commercial shipments at California Border Protection Stations (BPS) in 2020, 163 interceptions came from bee colonies. This number, representing nearly 25 percent of all interceptions, makes bee colonies one of the most likely pathways for importing 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 2020/2021 apiary import season (September 1, 2020 through March 15, 2021). The data used for this report was generated at California's (BPS) via the Pest Exclusion Information Management (PEIM) system including Warning Notices, Rejection Notices, and Pest Damage Reports issued. When relevant, 2019/2020 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 9.62% in the 2020/21 season as compared to the 2019/20 season.

	2019/20	2020/21	INCREASE/DECREASE
<i>SHIPMENTS</i>	4,480	4,911	+431
<i>COLONIES (HIVES)*</i>	1.84M	2.02M	+178,412

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

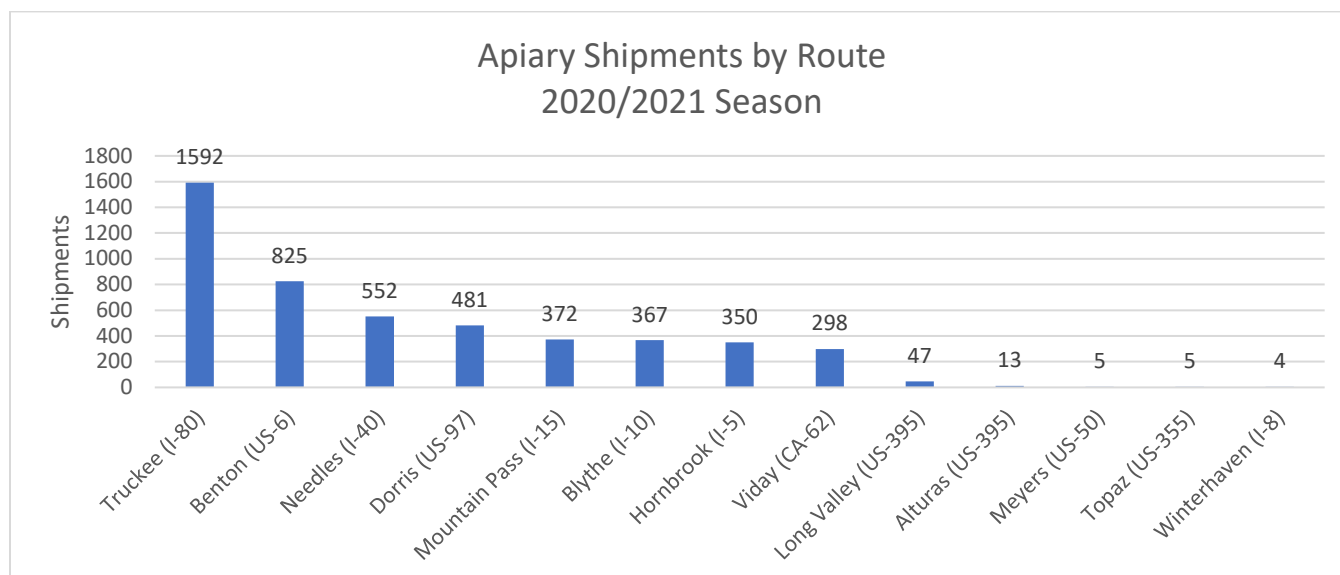
Importations by Origin

During the 2020/21 season, shipments entered through BPS from 39 states. The table below details the origins of shipments from the top 20 states. More than 34 percent of the shipments in the 2020/21 season arrived from either Idaho or North Dakota.

<i>ORIGIN STATE</i>	<i>2019/20</i>	<i>2020/21</i>	<i>CHANGE</i>	<i>% CHANGE</i>
ID	814	984	170	20.88%
ND	610	686	76	12.46%
FL	431	516	85	19.72%
OR	412	445	33	8.01%
WA	388	404	16	4.12%
SD	230	279	49	21.30%
MT	294	268	-26	-8.84%
TX	223	225	2	0.90%
MN	157	175	18	11.46%
GA	122	129	7	5.74%
UT	98	106	8	8.16%
CO	64	87	23	35.94%
MI	81	81	0	0.00%
AZ	84	69	-15	-17.86%
WY	69	69	0	0.00%
WI	53	54	1	1.89%
OK	54	49	-5	-9.26%
LA	44	46	2	4.55%
NE	53	45	-8	-15.09%
NV	39	44	5	12.82%
Other	160	150	-10	-6.25%
Total	4480	4911	431	9.62%

Importations by Route

During the 2020/21 season, shipments of live bees entered through 13 of CDFA's 16 BPS. Consistent with past years, the Truckee Station, located on Interstate 80, was by far the most utilized route in terms of volume – receiving 1,592 or nearly 34.42% 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 2020/21 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 2020/21 season, pest finds occurred on 2.75% of incoming shipments. This represents a decrease in the percentage of pest infested shipments of 1.87% as compared to the 2019/20 season.

	2019/20	2020/21	CHANGE
SHIPMENTS WITH NO PESTS FOUND	4,273	4,776	503
SHIPMENTS WITH PESTS FOUND	207	135	-72
TOTAL SHIPMENTS	4,480	4,911	431
% OF SHIPMENTS WITH PESTS FOUND	4.62%	2.75%	-1.87%

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 2020/21 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)	
AZ	1	1				
CO	3	3				
FL	68	4	25	29	3	7
GA	7	2	1	2	2	
IA	1	1				
ID	2		2			
IN	1			1		
LA	6	1	4	1		
MI	4	3	1			
MN	4	1	2			1
MO	1			1		
MT	2	2				
ND	7	2	2	3		
NE	1			1		
OH	1	1				
OR	1	1				
SC	1			1		
SD	5	1	3			1
TN	1		1			
TX	13	4	5	3		1
UT	1	1				
WA	3			3		
WY	1	1				
Total	135	29	46	45	5	10

(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.

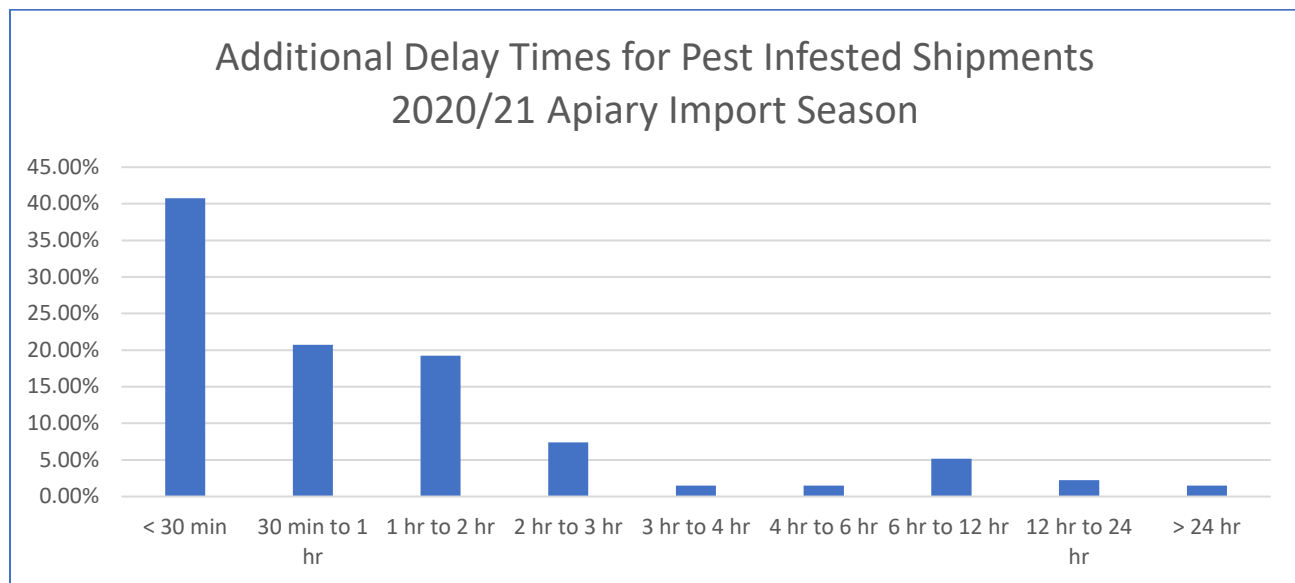
(4) Shipment pre-inspected under Ant-free Certification Program (see page 6 and 7), pest identified as actionable worker ants but within tolerance. Shipment allowed entry.

(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 2020/21 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 19-minutes longer than shipments with no pest finds. Most pest-infested shipments (80.74%) had an additional delay of under two hours.



Actionable Pests

A total of 152 actionable pests were intercepted on incoming shipments of bee colonies in the 2020/21 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 significantly reduced in the 2020/21 season, the information demonstrates the continued high pest risk, both in terms of pest numbers and pest variety, presented by incoming apiary shipments.

Pest	2019/20 Occurrences	2020/21 Occurrences	Decrease or Increase
Small Hive Beetle	83	54	-29
Carpenter Ants	51	36	-15
Bagworm Moths	9	24	15
Red Imported Fire Ant	27	10	-17
Other Ants	18	10	-8
Weeds	6	9	3
Termites	1	3	2
Other Pests	7	6	-1
Total	202	152	-50

Pre-Entry Certification

Origin Inspection Program

The Origin Inspection Program 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 to bee keepers entering from state presenting 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 continued into 2020/21. As indicated by the table below, 483 shipments were inspected at origin in the 2020/21 season. This represents a 56.93 percent increase from 275 shipments in the 2019/20 season. This trend of increased participation demonstrates beekeepers feel this program is of benefit. Additionally, officials from the state of Montana have expressed interest in participating in upcoming seasons.

State	Total Apiary Shipments	Shipments Inspected at Origin	Percent of shipments Inspected at Origin
2020/2021 Season			
Idaho	984	322	32.72%
North Dakota	685	161	23.50%
2019/2020 Season			
Idaho	814	197	24.20%
North Dakota	610	78	12.79%

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” are given the advantage of having a tolerance of up to 5 worker ants being found during BPS inspection without rejection.

During the In the 2020/21 shipping season, 1,101 shipments arrived from eligible states. Of these, 419 (38.06%) were certified by 12 of the 18 participating eligible states (no certificates were received from six eligible states). Of the shipments from participating states, pests were found on 14.02% the non-certified shipments vs pest finds on only 6.21% of the certified shipments, demonstrating continued value in encouraging beekeepers to have shipments inspected at origin. The table on the following page details these statistics.

**Summary of Shipments Entering under Ant-Free Certification
2020/2021 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	3	0	3	0.00%	6	0	6	0.00%
Florida	232	52	284	18.31%	217	15	232	6.47%
Georgia	34	3	37	8.11%	88	4	92	4.35%
Kansas	2	0	2	0.00%	1	0	1	0.00%
Louisiana	7	0	7	0.00%	33	6	39	15.38%
Maryland	1	0	1	0.00%	1	0	1	0.00%
Michigan	64	3	67	4.48%	13	1	14	7.14%
Mississippi	8	0	8	0.00%	14	0	14	0.00%
N Carolina	5	0	5	0.00%	4	0	4	0.00%
Pennsylvania	7	0	7	0.00%	3	0	3	0.00%
S Carolina	5	1	6	16.67%	8	0	8	0.00%
W Virginia	0	1	1	100.00%	5	0	5	0.00%
Total	368	60	428	14.02%	393	26	419	6.21%