California Almond Sustainability Program
Self-Assessment Answer Sheet

Assessed By_____ **Orchard/Block**_____ **Date** _____

	Practice or Metric	Your Selection
	Bee Health and Pollination Module	
	INTRODUCTION AND GENERAL INFORMATION - POLLINATION EFFICIENCY	
.	The practices in this module cover recommended practices for reducing potential adverse impacts to managed honey bees and native pollinators. Almond pollination by managed honey bees from hives placed to service specific orchards is key to successful pollination. However, native bees occurring on and off the farm year-round also pollinate almonds and other crops and plants. For optimal crop production and ecosystem function, it is important that pest management and cultural practices used year-round, on and off the farm, protect and nurture managed honey bees and native pollinators.	
	BEST MANAGEMENT PRACTICES GUIDE	
01	Our operation was aware of the Almond Board's guide: Honey Bee Best Management Practices for California Almonds. ***If No, then click 'No' and skip to question 4.***	◯ Yes ◯ No
	02. Practices in the guide specific to our internal farm operation were used.	◯ Yes ◯ No
	03. Practices in the guide relevant to our role in communication and coordination with parties throughout the pollination and pest management communication chain were used.	◯ Yes ◯ No
	AGREEMENTS WITH BEEKEEPERS	
04	A pollination agreement was executed with the beekeeper. ***If No, then click 'No' and skip to question 7.***	◯ Yes ◯ No
	05. The pollination agreement executed with the beekeeper was documented.	◯ Yes ◯ No
	06. The agreement stipulated (Answer 'Yes' to all that apply):	
	06.01. hive strength	◯ Yes ◯ No
	06.02. number of hives placed	◯ Yes ◯ No
	06.03. price per hive	◯ Yes ◯ No
	06.04. payment schedule	◯ Yes ◯ No
	06.05. hive access	◯ Yes ◯ No
	06.06. hive inspection	◯ Yes ◯ No
	06.07. potential pesticide applications	◯ Yes ◯ No
	06.08. hive maintenance	◯ Yes ◯ No

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	06.09. hive removal date	◯ Yes ◯ No
07	Hives were put into place no later than the timing recommended by the University of California (about 10% bloom).	◯ Yes ◯ No
08	Hives were placed at sites not susceptible to pesticide drift from outside sources.	◯ Yes ◯ No
09	Abundant potable water, free from contamination, was provided for bees.	◯ Yes ◯ No
10	It was ensured that the beekeeper registered locations of the hives with the county agricultural commissioner's office.	◯ Yes ◯ No
11	An inspection was completed by the beekeeper, or third party consultant, to ensure expectations for hive strength were met (two hives per acre having an average of eight frames of bees, with six-frame minimum strength is common).	◯ Yes ◯ No
12	Arrangements were made with the beekeeper about which pesticides could be applied if daytime applications were necessary while hives were present; if an application(s) was necessary, the beekeeper was provided with 48-hour advance notice.	◯ Yes ◯ No ◯ Not applicable
13	Which, and when during the day, pesticides could be applied while hives were present were communicated to the person responsible for pesticide recommendations, as well as the applicator.	◯ Yes ◯ No ◯ Not applicable
14	Beekeepers were advised to remove hives based on timing recommended by the University of California (about 90% of latest blooming variety is at petal fall).	◯ Yes ◯ No
	POLLINATOR RISK MITIGATION - GENERAL PEST MONITORING (YEAR-ROUND)	
15	The orchard was monitored by a licensed PCA for insects, mites, diseases and pest natural enemies (i.e., beneficials) at least once every two weeks during the growing season. (Note: diseases should be monitored weekly during bloom and spring.) ***If No, then click 'No' and skip to question 20.***	◯ Yes ◯ No
	16. Written or electronic scouting reports were kept by or provided to the farm owner or staff to inform decision making. ***If No, then click 'No' and skip to question 18.***	◯ Yes ◯ No
	17. To improve future decision-making, a year-end review of pest levels and trends was completed.	◯ Yes ◯ No
	18. Scouting data, university guidelines and practical experience were used to design and implement management strategies for insects, mites and diseases.	◯ Yes ◯ No
	19. Orchard monitoring for pests was done using repeatable representative processes (e.g., as recommended by the UC Statewide IPM Program).	◯ Yes ◯ No
	POLLINATOR RISK MITIGATION - DISEASE MONITORING (DURING BLOOM AND SPRING}	
20	During bloom and spring periods, decisions to spray for diseases were based on temperature and rainfall patterns conducive for disease development.	◯ Yes ◯ No
21	To determine necessary fungicides, rates and timings, disease symptoms were monitored weekly prior to and during bloom, and throughout spring, until weather was no longer conducive for disease development.	◯ Yes ◯ No
	POLLINATOR RISK MITIGATION - PESTICIDES (DURING BLOOM)	
22	Before applying pesticides to the orchard during bloom, beekeepers with hives on nearby properties were notified using an appropriate communication method (e.g., through the County Ag Commissioner, BeeWhere, CalAgPermits, etc.).	◯ Yes ◯ No
23	Pesticides were not used during bloom that had label cautions "highly toxic to bees," "toxic to bees," "residual times" or "extended residual toxicity."	◯ Yes ◯ No
24	Except for possibly Bacillus thuringiensis, insecticides (including tank mixes with fungicides) were not applied during bloom.	◯ Yes ◯ No

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25	During bloom, necessary fungicides (or Bacillus thuringiensis) were applied in the late afternoon or evening when bees and pollen were not present.	◯ Yes ◯ No ◯ Not applicable
26	Honey bee hives were never directly sprayed with any pesticide.	◯ Yes ◯ No
27	Water sources for pollinator bees were covered before or replaced after pesticide applications.	◯ Yes ◯ No ◯ Not applicable
28	The orchard manager was familiar with common symptoms of honey bee exposure to pesticides.	◯ Yes ◯ No
29	If incidences of possible pesticide-related bee incidences were observed, they were immediately reported to the county agricultural commissioner's office.	◯ Yes ◯ No ◯ Not applicable
	POLLINATOR RISK MITIGATION - PESTICIDES (YEAR-ROUND)	
30	If effective alternatives existed, broad-spectrum insecticides and acaricides, such as pyrethroids, organophosphates and carbamates, were not used because of their potential negative effects on beneficial and nontarget organisms.	◯ Yes ◯ No ◯ Not applicable
31	Prior to applying newly registered pesticides, impacts to bees and natural enemies were checked (using information from labels and other sources such as the UC IPM website), and the product with the fewest precautions and/or shortest residual was considered for use.	◯ Yes ◯ No ◯ Not applicable
32	Before applying pesticides to the orchard anytime of the year, beekeepers with hives on nearby properties were notified using an appropriate communication method (e.g., through the County Ag Commissioner, BeeWhere, CalAgPermits, etc.).	◯ Yes ◯ No
	POLLINATOR RISK MITIGATION - PESTICIDE SPRAYING	
.	If a custom applicator or farm management company was primarily responsible for applying pesticides, you may have to answer 'Not applicable' for some of the following questions related to spray equipment and applications. However, please answer 'Not applicable' ONLY if necessary.	
33	Prior to each air blast and/or aerial application, the weather was checked for current and forecasted wind speed and direction, inversion conditions, temperature and rain.	◯ Yes ◯ No ◯ Not applicable
34	Air blast and/or aerial applications only occurred when winds were between 2 and 8 mph (minimizes drift from inversions and wind).	◯ Yes ◯ No ◯ Not applicable
35	Low-drift nozzles for air blast and/or aerial sprayers were used to optimize spray placement and minimize off-target movement.	◯ Yes ◯ No ◯ Not applicable
36	The air blast spray pattern was adjusted according to the orchard's average tree size and shape (e.g., reducing size of lower nozzles for a mature orchard with a thin lower canopy, or shutting off top nozzles for a young orchard with short trees).	◯ Yes ◯ No ◯ Not applicable
37	When shifting between foliar sprays and dormant or bloom sprays for air blast sprayers, the fan speed, pressure and/or nozzle type were adjusted for the canopy density.	◯ Yes ◯ No ◯ Not applicable
38	To reduce drift, the air blast sprayer(s) was operated at the lowest pressure providing uniform coverage.	◯ Yes ◯ No ◯ Not applicable
39	Sprayer shields or drift guards were used to keep sprays on target (e.g., for weed sprayers).	◯ Yes ◯ No ◯ Not applicable
40	Ultra-low-volume spray equipment or target-sensing sprayers (e.g., SmartSpray (R) or WeedSeeker (R) technology) were used to reduce spray volumes or amounts of pesticides.	◯ Yes ◯ No ◯ Not applicable

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	POLLINATOR RISK MITIGATION - ACCOUNTING FOR SENSITIVE SITES	
41	Sprayers were turned off when making row turns and spraying did not resume until the nozzles were adjacent to the first trees.	◯ Yes ◯ No ◯ Not applicable
42	A map of sensitive sites (e.g., aquatic areas, residences, schools, pollinator and pest natural enemy habitat) and associated buffer zones within or near the orchard has been created and reviewed with everyone involved in pesticide applications.	◯ Yes ◯ No ◯ Not applicable
43	Spraying near waterways (e.g., creeks or irrigation canals) or other sensitive sites (e.g., residences, schools, pollinator and pest natural enemy habitat) was discontinued when winds blew in the direction of these sites.	◯ Yes ◯ No ◯ Not applicable
44	When operating air blast sprayers next to open or sensitive sites (e.g., aquatic areas, residences, schools, pollinator and pest natural enemy habitat), the two rows directly adjacent to these sites were sprayed on the outer side only (i.e., to direct spray into the orchard).	◯ Yes ◯ No ◯ Not applicable
	ALTERNATIVE FORAGE FOR POLLINATORS	
45	Hedgerows of flowering shrubs, such as coyote brush, were maintained along at least some edges of the farm or facility to provide alternative nutrition sources for managed and native pollinators and pest natural enemies.	◯ Yes ◯ No ◯ Not applicable
46	Vegetation was maintained on or adjacent to the farm or facility that provided pollen and nectar sources for pollinator bees before and/or after almond bloom (includes nutritional ground cover).	◯ Yes ◯ No ◯ Not applicable
47	Cover crop (resident ground cover or planted) was intentionally grown between orchard rows. ***If No, then click 'No' and skip questions 48 - 49***	◯ Yes ◯ No
	48. The ground cover was a planted cover crop. ***If No, then click 'No' and skip question 49.***	◯ Yes ◯ No
	49. The cover crop was recommended for providing forage to pollinators (e.g., mustards, clovers, vetch and/or wildflowers).	◯ Yes ◯ No

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