### Kathy Baylis 1, Jessica Pasciak1, Karen Rennich2, Jennie Stitzinger2, Dennis vanEngelsdorp2, The Bee Informed Partnership3

1 University of Illinois, 2University of Maryland, 3[www.beeinformed.org](file:///C:\AppData\Local\Microsoft\Windows\Users\baylis\AppData\Local\Microsoft\Windows\Temporary%20Internet%20Files\Content.Outlook\WY3FOUV7\www.beeinformed.org)

In March 2012, 32 honey bee brokers were contacted by phone to participate in the 2012 Bee Informed Partnership bee broker survey and 16 chose to participate in this survey. This represents 7 fewer brokers participating than in 2011. In all, there are thought to be between 30 and 40 companies or individuals who broker bees for CA almonds*.* The responding bee brokers placed bees for a total of 197 beekeepers. These brokers placed a total of 319,072 colonies in almond orchards for pollination (21% of the estimated 1.5 million colonies needed to pollinate almonds). The five largest responding bee brokers collectively placed 228,800 colonies, or 15% of the needed colonies for almond pollination. Each broker leased an average of 19,942 colonies from an average number of 12 beekeepers, with the largest five each leasing on average about 45,760 colonies from roughly 115 beekeepers. Almond growers in 2012 paid an average of $151 per colony, ranging from a low of $135 and a high of $177. The average price paid for colonies was not much different in 2011 at $153 per colony; however, the range that year was larger with a low of $110 and a high of $250.

Collectively, the brokers reported a *decrease* in the number of colonies placed in 2012 over their total from the previous year. When comparing the responses of the 16 brokers that participated in 2012 to their answers to the survey in 2011, we see that they placed a similar, but larger, number of colonies in 2011 with a total of 328,349.

While the survey was not designed to determine the losses experienced by beekeepers, the brokers estimated that 22 (11%) of the beekeepers supplying bees had difficulty meeting their colony commitments due to colony death or serious decline in adult bee populations. This percentage was a decrease from 2011 where brokers reported 16% of the beekeepers were unable to meet or had difficulty meeting their commitments. The downward trend is a continuation from 2010 where brokers reported 33% of the beekeepers were unable to meet or had difficulty meeting their commitments. Each year brokers have been able to meet their colony commitment more successfully. Despite this decrease from 2011 to 2012, the beekeepers or their brokers still had to find an additional 7,680 colonies (2.4% of total colonies used) to make up for this deficit. This was a huge decrease from the 51,697 colonies (12.5% of total colonies used) that beekeepers were short in 2011. In 2010, beekeepers or their brokers had to find an additional 55,040 colonies (13% of total colonies used) to make up for the shortage. In general, beekeepers had positive things to say about the bees available for pollination in 2012.

Most of the brokers said that they placed all the colonies that they planned to, and they were confident that they could find more colonies if they wanted to rent more. However, given an unlimited supply, they reported that they would have placed 70,100 more colonies this year. This was about 22% of the amount of colonies that they actually placed. In 2011 brokers would have placed 30,700 more colonies (7.4% of total colonies used) if they were available. Additionally, in 2010 all but one broker said that he or she could have leased more bees had they been available; up to 20% more in some cases. Given an unlimited supply, brokers in 2010 would have placed an additional 97,740 (23% of colonies placed) more colonies if available.

The average grade of the colonies (9.3 frames of bees) placed in almond orchards was just above the target colony size of 8.5 frames of bees per colony. Only 6 of the 16 beekeepers reported that a percentage (8%) of the total colonies placed in almonds were field run, meaning that they were not graded before placement. The percentage of field run colonies last year was 3.8%. While field run colonies are often regarded as potentially being below optimal strength, this was not the consensus this year. All but 1 of the bee brokers noted that their field run colonies were stronger than average, and the field run colonies were estimated to be graded above 8 frames. On average, brokers reported placing 2.02 colonies per acre, which was slightly less than the average of 2.06 colonies per acre in 2011, but the same as the average for 2010 (2.02). The lowest density of colonies reported was 0.25 colonies per acre. This number is well below that which is needed to adequately pollinate mature orchards unless ideal bee flight weather occurs during the bloom or, in the absence of other pollinators, there were additional bees from elsewhere. The highest density of colonies reported was 3.5 colonies per acre.

The vast majority of the arrangements between brokers, beekeepers, and almond growers are continuations from previous years. On average, brokers reported reusing 85% of the beekeepers from the year before, and placing 97% of the colonies with the same almond growers. Brokers seemed to experience a better than average year with good prices and were content with the number of growers that they placed for. Some beekeepers cited the mild winter as a possible reason for the above average health of their colonies.

Over the few years of pollinator data collection, it is apparent that despite national colony losses, bee brokers are having less trouble meeting the number of colonies they commit for pollination (33% of brokers had issues with meeting their pollination commitments in 2010, 16% in 2011 and 11% in 2012). While the winter of 2011 seemed to take a toll on the number of colonies available for pollination, 2012 colony populations did not experience this problem. Average rental prices for colonies have stayed relatively the same over the 3 years, around $150, with the variation decreasing. The number of colonies placed per acre has also stayed relatively the same over the 3 years. Brokers who have responded to the survey also seem to have found reliable customers, as they do not change their customer base from year to year.