In the United States it is estimated that managed honey bee colonies are annually responsible for the pollination of agricultural crops valued between $4 and $8 billion. Honey bees are accurately described as indispensable pollinators.

The reasons for the success of honey bees as pollinators are seen in certain aspects of their biology. Honey bees forage for nectar and pollen from many thousands of plant species, so they efficiently pollinate a wide variety of crops we all consider important. When a forager bee begins collecting nectar or pollen from the flowers of one species of plant, she will continue to visit flowers of only that species for at least one foraging trip and more often for several days, or until the resource is no longer producing nectar or pollen. This is obviously important to the plant she visits as it requires pollen from a flower of the same species for pollination.

Most bees are short-lived. During the active foraging season (from March to October in the Yuma area), a worker lives approximately 5 to 6 weeks. After an adult worker emerges from a pupal cell, her first 3 weeks are spent inside the colony serving as a "house" bee. House bees work through a series of tasks that includes cleaning comb, feeding larvae, secreting wax, building comb, accepting nectar loads from foragers, ripening nectar, ventilating the hive, and (for a short time) acting as a guard bee at the entrance of the colony.

Bees that are about 21 days old, begin to take short orientation flights, marking the beginning of a 2- to 3-week life as a forager bee, seeking nectar and pollen to bring back to the colony.

The greater value of larger colonies for pollination can be illustrated by the amount of honey produced by colonies of different populations. The ability of a colony to store surplus honey is a direct result of the number of bees foraging and the amount of forage available. It is the foragers that pollinate the flowers they visit. One colony of 30,000 bees produces 1 1/2 times as much honey as the sum of two colonies with 15,000 bees each.

Many people think that the world would be better without bees. But actually life on earth would be much more difficult without bees. If all bees vanished, there would be great famines, and many people would die of starvation. Many fruits and vegetables would be so rare and expensive that few could afford them. Grasses and grains, and a few nuts, which are wind pollinated would still be available without bees, but there simply would not be enough food because bees do more pollination than any other kind of pollinator.

More than 100 agricultural crops in the United States are pollinated by bees. This means bees are important, if not essential, for the production of nearly $1.2 billion worth of agricultural crops produced annually in Arizona. Examples of bee pollinated crops in Arizona include watermelons, cantaloupe, citrus, vegetable and alfalfa seeds and apples. Although some of these crops are pollinated by bee species other than honey bees, honey bees are the only ones that can be easily managed, moved around and are known to exploit a wide variety of crops.

While a worker bee is in a flower gathering nectar, pollen often sticks to her hairy body. Because the bee generally visits a number of the same type of flower, she will rub some of the pollen off onto another flower and complete pollination.

Based on a study of the figures published by the National Agricultural Statistics Service of the USDA, interviews with beekeepers, and researchers, it is estimated that there were 2,500,000 colonies rented for pollination purposes in 2008. Over two million of these colonies are on the road each year to pollinate crops and to produce honey and beeswax. This represents a major change in U.S. agriculture since the first colonies of honey bees were rented for pollination on apples in New Jersey in 1909, and since the first migratory beekeeping for the purposes of honey
production began in this country in latter part of the 1800s.

Seedless watermelons, first produced in Japan in 1939, have gained market prominence only in recent years. Despite the fact that they produce no seeds, they must be cross-pollinated to produce fruit. Colonies of honey bees are used at the rate of two to three per acre.

Beginning in October 2006, some beekeepers began reporting losses of 30-90 percent of their hives. While colony losses are not unexpected during winter weather, the magnitude of loss suffered by some beekeepers was highly unusual. This phenomenon, which currently does not have a recognizable underlying cause, has been termed "Colony Collapse Disorder" (CCD).

Interestingly, bees can choose to primarily collect either nectar or pollen. Some amount of pollen will always be transferred regardless, but a bee specifically collecting pollen is far more efficient a pollinator. Professional pollination managers take advantage of this pattern by specifically using hives which are being actively built or re-built during the crucial bloom phase, thus requiring the protein of pollen far over the energy of nectar. Honey production of the hive usually suffers as a result.

The more protein the diet of a bee, the longer the bee will live. Being able to prolong bee life even 4 to 5 days makes a larger, healthy colony. Some tests at the Tucson Bee Lab has shown that feeding protein increases strength, improved brood size and increases the number of bees in a hive. Any feeding is better than no feeding. If bloom is going to be late 2 weeks, many bee keepers will provide food high in protein for their bees.

The USDA discontinued taking data on alfalfa seed production in the mid 1990’s, it is estimated that 250,000 colonies are used in alfalfa seed production today, the same number as was used 10 years ago.

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