

Subcommittee
on
Horticulture, Research, Biotechnology and Foreign Agriculture
of the
House Committee on Agriculture

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Testimony of Mr. Arthur D. Cummings

**THE IMPORTANCE OF HONEYBEE HEALTH
TO THE U.S. ALMOND INDUSTRY**

Good morning, Mr. Chairman and Members of the Committee. Thank you for inviting me to testify this morning on this very important subject.

My name is Dan Cummings. I am the CEO of Capay Farms in Hamilton, California, where I produce almonds and walnuts. Additionally, I am the Chairman of the Almond Board of California Bee Task Force and have served as Vice Chairman of that Board. The Almond Board of California is a Federal Marketing Order administered by the Department of Agriculture. Also, I am the Chairman Emeritus of *Project Apis m.*

My almonds are delivered to Blue Diamond Growers on whose Board I serve. Blue Diamond Growers is a nonprofit farmer-owned marketing cooperative. Blue Diamond Growers is the world's largest processor and marketer of almonds, founded in 1910 and headquartered in Sacramento, California. The company obtains its supply of almonds from its member/owners and sells them to retail chains and food processing, confectionery and food service companies in nearly 100 nations around the world. Almonds are grown exclusively in California and are the largest tree crop in California with a value of \$6 billion. In fact, over \$4 billion of almonds were exported from California to the world last year alone. Almonds are California's number one agricultural export.

Nationally almonds rank in the top three consumer food items exported from the United States. Blue Diamond Growers exports for the majority of the almond growers in the State of California. Almond production continues to expand in order to supply the world. Over 80% of the world's almond supply is produced in California. Almonds are primarily grown in central California in a 400-mile area from Red Bluff, in the north, to Bakersfield, in the south.

The Honeybee is Essential for the Global Food Supply

The honeybee is essential for the global food supply. One third of our diet comes from honeybee-pollinated plants. The continuing health of the honeybee population is a matter of concern to the global agricultural community. Managed honeybees are vital to more than 90 bee-pollinated crops in the United States.

Nearly \$20 billion in farm income is dependent on honeybees, directly or indirectly. Honeybee-pollinated crops include almonds, apples, cherries, melons, pumpkins, squash and sunflowers. Honeybee-pollinated seeds are also critical to cattle and livestock that ultimately feed on alfalfa.

California almond growers depend on honeybees for their livelihood. We are very concerned about the health of honeybees. Approximately 1.6 million honeybee colonies – approximately two thirds of all the commercially kept honeybees in the United States – are needed to pollinate California's almond orchards. An almond crop depends on cross-pollination. Most almond orchards have at least two compatible varieties of almonds planted. The honeybees cross-pollinate between these varieties in order to establish the crop. Without honeybees, there would be no crop.

California almonds are the first and largest crop each spring to require honeybees for pollination. Our industry partners with beekeepers with whom we share the common goal of healthy honeybees to support the future growth of almond production and other agricultural products. California almond growers are significant contributors to *Project Apis m.*, a non-profit organization that brings together representatives from the pollination and crop production industries to support research aimed at improving the beekeeping industry. I was the Chairman of the Board of *Project Apis m.* during its first six years and remain a Board member.

Blue Diamond Growers will contribute \$100,000 to *Project Apis m.* this year for research dedicated to healthier honeybees. This is in conjunction with Blue Diamond Growers' introduction of several new honey almond products.

The Almond Board of California has funded honeybee research beginning in 1976. Since 1995, it has invested \$2.3 million in honeybee health research. As a grower-owned cooperative, Blue Diamond Growers is the largest single contributor to the Almond Board of California. *Project Apis m.* has invested over \$2.2 million on behalf of honeybees.

The Almond Board of California created a Bee Task Force in 2005 whose members include almond growers and processors, beekeepers and researchers. The purpose of this group is to make recommendations for research and effective pollination practices. This is being done to ensure a future of strong healthy hives in sufficient numbers. I was the first grower to chair this committee and still do.

Together, the Almond Board of California is partnering with the California State Beekeepers Association and *Project Apis m.* that works with landowners and managers to grow “bee pastures” during the pollen deficient winters. This project is funded through a series of grants.

51% of almond farms are less than 50 acres and over 80% of almond farms are owned and operated by families either individually or in partnership. Almonds are the earliest blooming natural food source for honeybees after wintering on supplements. Honeybees found in California’s almond orchards enjoy an abundance of natural forage. As a result, hives typically increase after almond pollination and bloom. These larger hives are then “split” into smaller units by beekeepers. It is best to ensure honeybees have a diverse, season-long chain of food sources.

The Almond Board of California is also participating in a USDA grant for advancing “Integrated Crop Pollination.” This approach integrates honeybees, other managed pollinators like the Blue Orchard Bee, and “bee pasture” in addition to almonds.

Because the California almond industry recognizes the essential role honeybees play in sustaining the global food supply, it and *Project Apis m.* have invested approximately \$4.5 million in honeybee research. This is more money than any other U.S. commodity has invested in honeybee research. Other industry organizations have invested additional funds in honeybee research. The focus of this research is on improving the health of hives, which includes improving honeybee nutrition, managing pests and diseases effectively, restoring honeybee genetic stock diversity, helping honeybees cope with parasites and disease, and other areas related to helping improve their health and longevity.

Our research has led to several breakthroughs in maintaining honeybee health. Experts agree that beekeeping practices in the US have changed more in the last few years than in the last 20 years. The focus has been on ensuring better honeybee nutrition and the overall improvement of hive health. Honeybees need a variety of food sources in their diet for optimum health. The Almond Board of California’s support was instrumental in the development of a new nutritional supplement for honeybees that beekeepers can use in the late summer and fall when natural sources of pollen are at low levels.

Research has also resulted in establishing best practices for dealing with the Varroa mite. This is a pest that emerged in the mid-1980s that attacks beehives by weakening and shortening the life span of the honeybees on which they feed. Initial feedback from beekeepers has been that those who have adopted these newer bee management practices experience improved honeybee hive health and performance.

Our industry is also part of an alliance that created a farming guide to promote reduced-risk and environmentally responsible pest management practices based on over 5 years of field data and experience in almond orchards. The health of the honeybee is a top priority in the Best

Management Practices. These guidelines are shared with all growers and include recommendations to avoid applications of insecticides during bloom; and to minimize exposure by honeybees to any spray by avoiding applications when pollen is available and honeybees are feeding.

Several promising new bee research programs funded by the almond industry are underway. Over the years, dedicated research to improve honeybee genetic stock has resulted in breeding honeybees for hygienic behavior to help control diseases like the Varroa mite, which is the most serious pest of honeybees. Current research by Dr. Walter Sheppard and Sue Cobey at Washington State University is aimed at restoring genetic diversity to commercial honeybee stock. By increasing the gene pool within breeding stock, honeybees will be better able to cope with parasites and pathogens. This project has also developed safe collection and preservation techniques for honeybee stock and genetic material.

Another project extends best practices to queen honeybee breeders to assure honeybee health and genetic diversity. Dr. Marla Spivak at the University of Minnesota leads this research. It has increased the proportion of improved stock in commercial breeding lines. It has also implemented diagnostic and integrated pest management (IPM) programs resulting in better control of bee hive pests with fewer chemicals.

A third research project being conducted by Dr. Louisa Hooven at Oregon State University builds on past research assessing the impact of fungicides on honeybees. This work is evaluating the impact of four fungicides currently used in almonds on honeybee development.

The almond industry is the largest single contributor to increasing the health of honeybees in America. It is instrumental in the development of MegaBee, a new nutritional supplement for honeybees, which can be used in the late summer and fall when natural sources of pollen are at low ebb. It has helped establish later summer-fall feeding practices that are important for strong hives. It developed integrated pest management (IPM) approaches for Varroa mite control that use fewer chemicals in the hive and new breeding techniques for improved honeybee resistance to pests and pathogens.

In fact, beekeepers who have adopted these newer honeybee management practices experience improved honeybee hive health and performance. For example, Dr. Frank Eischen of ARS/USDA is conducting an ongoing study in Kern County, which indicates that hive build up during almond bloom resulted in an average of a 27% increase in hive strength. He notes, that at the beginning of almond bloom, the hive strength averaged 11 frames of honeybees and at the end of bloom; the hive strength averaged 14 frames of honeybees. Under average weather conditions, a standard size (referred to as “strength”) hive of 8 frames of honeybees at the start of the bloom will increase in size or “strength” to 10- 12 frames at the end of the almond bloom.

This improves in warm weather conditions, like we just experienced in February 2014, where a hive of 8 to 10 frames of honeybees will increase to 15 to 16 frames of honeybees. This

is an increase in size or “strength” ranging from 50% and up. Further research is currently being conducted on this year’s bloom and its impact on the health of honeybees.

Meanwhile, California almond growers will continue to lead in the investment in honeybee research, including honeybee nutrition, improved honeybee genetics, the effective management of pests and diseases, and the impact of pesticides.

Thank you, Mr. Chairman for holding this important hearing on this very critical subject. I will be happy answer any questions you may have.