

Theme Overview: Pollination Service Markets: Evolution and Outlook

Peyton Ferrier

JEL Classifications: Q13, Q12, Q57

Keywords: Almonds, Beekeeping, Honey, Pollination markets

Will there be enough pollinators for agriculture in the foreseeable future? How well has the beekeeping industry performed as a supplier for agriculture's pollination needs? How has beekeeping responded to elevated loss rates and the growing demand for pollination services? In the last decade, concerns over the effect of pollinator loss on crop production have entered environmental policy discussions regarding land use change, pesticide use and spraying practices as well as the movement toward less crop diversity and more intensive chemical use on farms. Many farms, however, acquire pollination services through pollination markets rather than the local environment by renting colonies of honey bees (*Apis mellifera*) from migratory beekeepers. Throughout the year, these beekeepers move about the country producing honey, renting colonies for crop pollination, and managing their colonies' reproductive cycle. While honey bees themselves depend critically on forage and nutrition in the natural environment, the movement of colonies and intermediation of beekeepers unwinds the link between a farm's local habitat and its pollinator availability.

The following five articles in this *Choices* theme discuss the origins, operations, and institutions of these remarkable markets with two main themes. The first is that farmers do not leave crop pollination to chance but instead utilize well-developed markets for pollination services when necessary. The second is that the growth of the California almond industry has reshaped the revenue structure and orientation of beekeeping toward pollination service provision and away from honey production.

Rucker, Thurman, and Burgett explain the origins of pollination markets and their market response to elevated colony loss rates and the growth of almond industry. Goodrich details how formal and informal contractual relationships coordinate the timely delivery of scattered colonies to California *en masse* and increasingly address long-standing quality assurance problems through contract incentives. Champetier, Lee, and Sumner show how almond growers are gradually reducing their need for colony rentals in response to high fees by adopting an almond variety that requires less pollination. In a separate article, Champetier, Lee, and Sumner then describe the factors limiting the expansion of colony numbers and how the supply of honey bee colonies in California in the winter supply of honey bee colonies in California depends on the amount of forage land in North Dakota in the summer. Finally, Ferrier describes the evolution of government programs supporting beekeepers and the early findings of new data on beekeeping colony loss and pollination markets.

Articles in this Theme:

- [Honey Bee Mortality, Markets, and the Food Supply](#)
Randal R. Rucker, Walter N. Thurman, and Michael Burgett
- [Contracting for Pollination Services: Overview and Emerging Issues](#)
Brittney K. Goodrich
- [Are the Almond and Beekeeping Industries Gaining Independence?](#)
Antoine Champetier, Hyunok Lee, and Daniel A. Sumner
- [Honey, Forage and Almond-Pollinating Honey Bees](#)
Antoine Champetier, Hyunok Lee, and Daniel A. Sumner
- [The Evolution of Federal Programs for Beekeepers and Pollinator Data](#)
Peyton Ferrier

Beekeeping is a peculiar kind of agriculture. The crop is a liquid. The farmers move regularly. The livestock flies, possesses six legs, and will die to protect its home. Moreover, because honey bees provide a critical pollination service input in farm production, problems for beekeepers have the potential to create problems for many other crop producers. Despite these oddities, pollination markets behave like other markets, and the same invisible hand at work in markets for other farm inputs is also at work in pollination markets.

Author Information

Peyton Ferrier (peyton.ferrier@usda.gov) is an Economist, Agricultural Marketing Service, U.S. Department of Agriculture, Washington, DC.

Acknowledgments: The author thanks Brittney Goodrich, Antoine Champetier, Randal Rucker, Walter Thurman, and Michael Burgett for helpful feedback. This work was funded in part by the U.S. Department of Agriculture. The findings and conclusions in this article are those of the author and should not be construed to represent any official USDA or U.S. government determination or policy.

©1999–2019 CHOICES. All rights reserved. Articles may be reproduced or electronically distributed as long as attribution to Choices and the Agricultural & Applied Economics Association is maintained. Choices subscriptions are free and can be obtained through <http://www.choicesmagazine.org>.