



- News
  - Articles
  - Videos
  - Images
  - Books
  - Search
- 
- Health & Medicine
  - Mind & Brain
  - Plants & Animals
  - Earth & Climate
  - Space & Time
  - Matter & Energy
  - Computers & Math
  - Fossils & Ruins

**Science News**

- [Share](#)
- [Blog](#)
- [Cite](#)
- [Print](#)
- [Bookmark](#)
- [Email](#)

**Pollinators Make Critical Contribution to Healthy Diets**

ScienceDaily (June 25, 2011) — Fruits and vegetables that provide the highest levels of vitamins and minerals to the human diet globally depend heavily on bees and other pollinating animals, according to a new study published in the international online journal *PLoS ONE*.

**See Also:**

**Health & Medicine**

- [Vitamin](#)
- [Dietary Supplement](#)

**Plants & Animals**

- [Agriculture and Food](#)
- [Food](#)

**Earth & Climate**

- [Acid Rain](#)
- [Exotic Species](#)

**Reference**

- [Food groups](#)
- [Pollination management](#)
- [Dietary mineral](#)
- [Heirloom plant](#)

The new study was carried out by an interdisciplinary research team, composed of pollination ecologists and a nutrition expert, based at the Leuphana University of Lüneburg, the University of Berlin in Germany, and the University of California at Berkeley and San Francisco. The research team showed that globally "animal-pollinated crops contain the majority of the available dietary lipid, vitamin A, C and E, and a large portion of the minerals calcium, fluoride, and iron worldwide. The yield increase attributable to animal-dependent pollination of these crops is significant and could have a potentially drastic effect on human nutrition if jeopardized."

More specifically, the team showed that in the global crop supply, several key vitamins and other nutrients related to lower risk for cancer and heart disease are present predominantly in crops propagated by pollinators. These include the carotenoids lycopene and β-cryptoxanthin, which are found in brightly colored red, orange and yellow fruits and vegetables. Other important antioxidants, including several forms of vitamin E and more than 90% of the available vitamin C, are provided by crops that are pollinated by bees and other animals.

Key minerals for the development of bones and teeth, including more than 50% of calcium and fluoride available in the global food supply, are present in crops produced with pollinators. Plant sources of calcium, such as sesame seed, almond or spinach, are particularly important in regions of the world where dairy production is often not culturally, environmentally or financially feasible.

The animal-pollinated crops included in this study vary in the extent of their dependence on animal pollinators, with many able to propagate via alternative mechanisms, such as wind or self-pollination. Despite this, the researchers estimate that up to 40% of some essential nutrients provided by fruits and vegetables could be lost without pollinators.

Bees and other animal pollinators are experiencing declines in many parts of the globe. Many farmers around the world depend on the European honey bee, importing them seasonally to pollinate their fields. However, the European honey bee has suffered massive overwintering losses, proposed causes of which include disease, pesticides and lack of nutritional (floral) resources. Wild pollinators that provide pollination services "for free" are also declining rapidly as habitat is destroyed by intensive farming practices such as agrochemical-based monoculture. The results of this study demonstrate the potential impact of this pollinator decline on human health.

Email or share this story: [|](#) [More](#)

**Story Source:**

The above story is reprinted (with editorial adaptations by ScienceDaily staff) from materials provided by [Pensoft Publishers](#), via [EurekAlert!](#), a service of AAAS.

**Journal Reference:**



These honeybee hives are placed in a blooming almond orchard in Yolo County, Calif. Almond production heavily depends on pollinators and almonds are rich in energy, protein, lipid and many key nutrients such as calcium, magnesium and vitamin E among others. (Credit: AM Klein, Leuphana University of Lüneburg)

**Ads by Google**

**12 Brain Boosting Foods** — Learn how to increase your mental health with brain charging foods. [www.doctorshealthpress.com](http://www.doctorshealthpress.com)

**The Evolution of Gatorade** — G Series 03: Rehydrate & Rebuild. Hydration & Muscle-Recovery Energy. [www.Gatorade.com/GSeries](http://www.Gatorade.com/GSeries)

**Super Antioxidants** — Use the power of natural ingredient To reduce the signs of aging [www.vitaphenol.com](http://www.vitaphenol.com)

**Buy VIActiv® Soft Chews** — VIActiv® Calcium Chews: Get Your Calcium + Vitamins D & K. Buy Now! [www.Viactiv.com/VitaminD](http://www.Viactiv.com/VitaminD)

**Safe Fruits, Vegetables** — Choose organic to avoid fruits & veggies grown with pesticides. [www.OrganicItsWorthIt.org](http://www.OrganicItsWorthIt.org)

**Related Stories**



**Commercial Bees Spreading Disease To Wild Pollinating Bees** (July 23, 2008) — Bees provide crucial pollination service to numerous crops and up to a third of the human diet comes from plants pollinated by insects. However, pollinating bees are suffering widespread declines in ... [> read more](#)



**Across The Americas, Squash And Gourd Bees Are Superb Pollinators** (Jan. 8, 2009) — Acorn squash and other winter squashes at your local supermarket likely got their start months ago, when their colorful blossoms were pollinated by hardworking ... [> read more](#)



**Bees One of Many Pollinators Infected by Virus Implicated in Colony Collapse Disorder** (Dec. 28, 2010) — Researchers have found that native pollinators, like wild bees and wasps, are infected by the same viral diseases as honey bees and that these viruses are transmitted via pollen. This study provides ... [> read more](#)



**Oregon Bee Loves Berries, May Help Fill Gap Caused By Colony Collapse Disorder Of European Bees** (Feb. 14, 2009) — Oregon honeybees are showing a preference for native wildflowers and berries, which may help fill the gap left by the decline of European honeybees. ... [> read more](#)

**Just In:**  
Learning Brain Rhythm Linked to Running Speed

**Science Video News**



**HoneyBee Decline**  
Entomologists are studying the reasons behind an enormous bee die off happening across the country. They call it Colony Collapse Disorder, and if ... [> full story](#)

[Sociologists Weigh In On Obesity Increasing The Length Of Hospital Stays](#)

[Psychobiologists Find Genetic Component in Children's Food Preference](#)

[Environmental Scientists Fume About Disappearing Flower Fragrances](#)

[more science videos](#)

Click for information about the Prevage anti-aging breakthrough.  
Prevage: Interactive Video

**Breaking News** ... from NewsDaily.com

[Benefit of mammograms even greater than thought](#)

[Near-Earth asteroid passes over Atlantic Ocean](#)

[Gene machines may help save endangered Tasmanian devil](#)

[Cream may buy time for snake bite victims](#)

[Analysis: Scientists getting closer to artificial pancreas](#)

[more science news](#)

**In Other News ...**

[Lagarde set to win IMF post as U.S. offers support](#)

[Radioactive water leaks from Japan's damaged plant](#)

[Home prices dip in April: S&P](#)

[China demands Ai Weiwei pay \\$1.85 million in taxes, fines](#)

[EU warns Greece rejecting austerity means default](#)

[Special Report: A little house of secrets on the Great Plains](#)

REUTERS  
NIOXIN  
Made for you.  
Start the consultation

10.1371/journal.pone.0021363

Need to cite this story in your essay, paper, or report? Use one of the following formats:

- APA Pensoft Publishers (2011, June 25). Pollinators make critical contribution to healthy diets. *ScienceDaily*. Retrieved June 29, 2011, from <http://www.sciencedaily.com/releases/2011/06/110624094536.htm>
- MLA

*Note: If no author is given, the source is cited instead.*

**Disclaimer:** This article is not intended to provide medical advice, diagnosis or treatment. Views expressed here do not necessarily reflect those of ScienceDaily or its staff.

Number of stories in archives: 104,911



**Veterinarian Says Natural Foods Not Always Best for Pets** (Sep. 17, 2010) — While natural food is a rising trend among humans, pet owners

should be careful before feeding similar types of food to their pets, according to a ... [read more](#)

**Ads by Google**

**Market Collapse 6/30/11?** — Analyst Dennis Slothower foresaw 2008 collapse; issues new warning  
[www.StealthStocksOnline.com](http://www.StealthStocksOnline.com)

**Diabetic Food List** — Find The Best Diabetic Food List. Get Advice From Our Specialists!  
[StayingFit.com](http://StayingFit.com)

**Food List For Diabetics** — Start Eating Great & Healthy With A Food List For Diabetics Today!  
[dailylife.com](http://dailylife.com)

**Resveratrol Price Watch** — Over 80 Resveratrol Prices Compared - Questions Answered & Public Forum  
[www.ResveratrolPriceWatch.com](http://www.ResveratrolPriceWatch.com)

**Microsoft® Windows Azure** — Focus on the Applications. Not the Infrastructure. Watch Tutorials  
[Microsoft.com/Cloud/WindowsAzure](http://Microsoft.com/Cloud/WindowsAzure)

[property](#)  
[more top news](#)

Copyright Reuters 2008. See [Restrictions](#).

**Free Subscriptions** ... from ScienceDaily

Get the latest science news with our free email newsletters, updated daily and weekly. Or view hourly updated newsfeeds in your RSS reader:

- [Email Newsletters](#)
- [RSS Newsfeeds](#)

**Feedback** ... we want to hear from you!

Tell us what you think of ScienceDaily – we welcome both positive and negative comments. Have any problems using the site? Questions?

Your Name:

Your Email:

Comments:

Click button to submit feedback:

Find with keyword(s):

Enter a keyword or phrase to search ScienceDaily's archives for related news topics, the latest news stories, reference articles, science videos, images, and books.