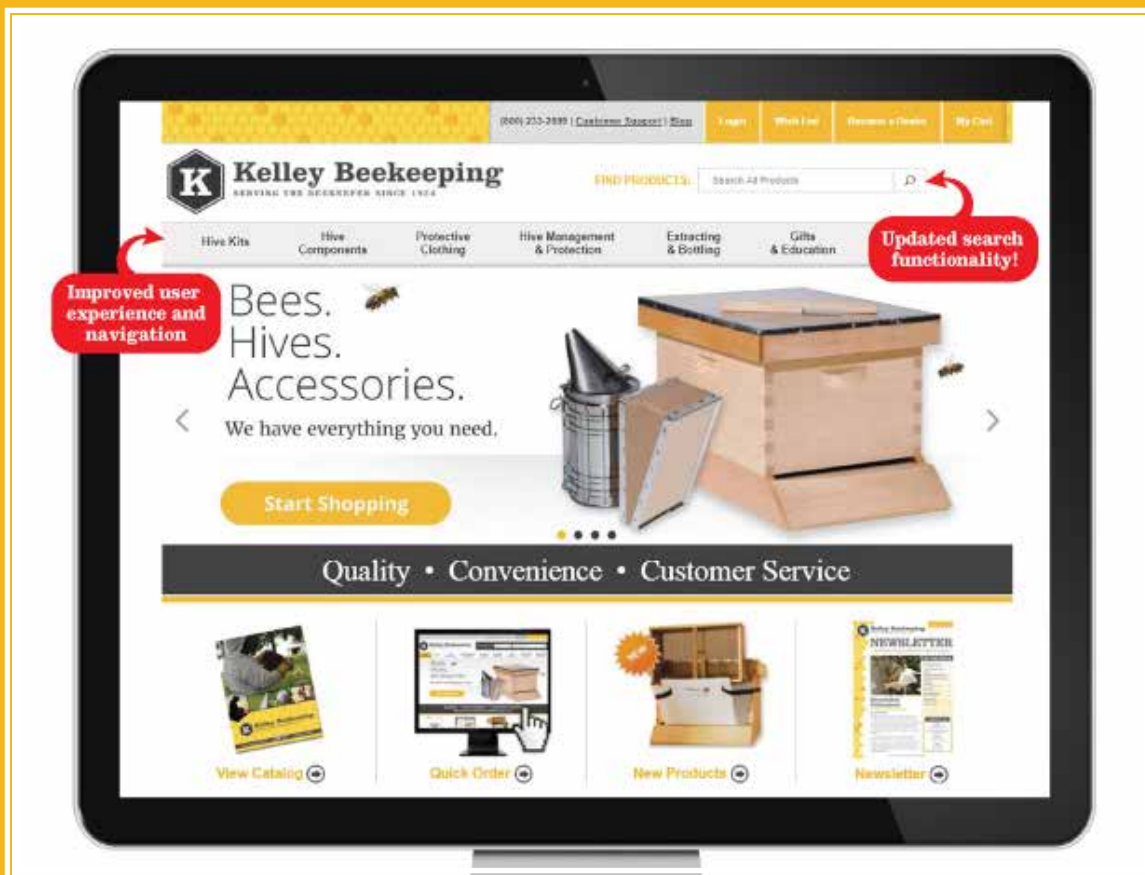




Kelley Beekeeping

SERVING THE BEEKEEPER SINCE 1924

ISSUE 84: AUGUST 2017



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From the Queen's Court

by Melanie Kirby

Mid-summer Midwestern Camaraderie

I had the great pleasure of visiting the Wisconsin Honey Producers last month for their summer meeting. I'm a big fan of midwesterners. They are the nicest folks and are a smiley bunch. Kelley Beekeeping Q&A columnist Liz Walsh picked me up from the Milwaukee airport and we drove to Red Granite, WI a few hours away.



Our first stop was in Rippon, WI, where Liz studied for her undergraduate degree. It is a cute campus, and Liz pointed out a diverse prairie where she stood alone to convince campus to place hives there. Liz paid for her undergraduate degree with her beekeeping. She now has just a couple more years to go to complete her doctorate at the Rangel Texas A&M Bee Lab in College Station, TX.

Our next stop was around the corner to a wonderful tea shop that offered every flavor of tea and herbal medleys under the sun. They did also offer some local Wisconsin honey, which was light and beautiful. We stopped for a bite to eat and then headed to the hotel for the night. We met up with a retired beekeeper, Lee Heine- who used to be the largest package seller in Wisconsin. He shared a slew of interesting stories with us about the movers and shakers in the industry from his heydays.

The following day, I gave three presentations to a room full of beekeepers. They were all attentive and a few came up to me after each presentation to share their stories and ideas. One of the highlights from the day was getting to reunite with my former boss-Garry Orescovich of Honey Land Farms. He is a migratory beekeeper between Wisconsin and Florida. He's been at least 52 years in the business and stands as a proud "lifer" who has dedicated his skills to help keep the American beekeeping industry alive.



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Queen's Court *cont'd*

I will admit that he is the one employer I've had while I was getting into this industry who really took the time to share with me the nuances of queen breeding and rearing, package making, hauling bees, and producing varietal honeys. A lot of my own queen rearing protocol is based on what I learned when I worked for Garry. And I have now been sharing his techniques with interns and co-workers the world over.



Somewhere over the rainbow...

It is professional apiculturists like Garry, who really do help to keep our American beekeeping industries going. He was recently bought out by his business associate John DeLaRosa and now John manages the 5000 colony operation which migrates from north to south and also to the west coast for almond pollination. It was truly a treat to visit with them both. It gave me perspective that the legacy one creates through their farming and beekeeping- can be maintained and progressed if we can find those who want to make a career and create a livelihood working with our blessed bees.

After the WI meeting, Liz took me to stay the night at her parent's house outside of Milwaukee. Liz keeps a few hives there for her research and her dad is now hooked! He has built a very nice large shop as he now has around 50 hives of his own. The Walsh family works together to help each other realize their dreams. And that is the best kind of family around.

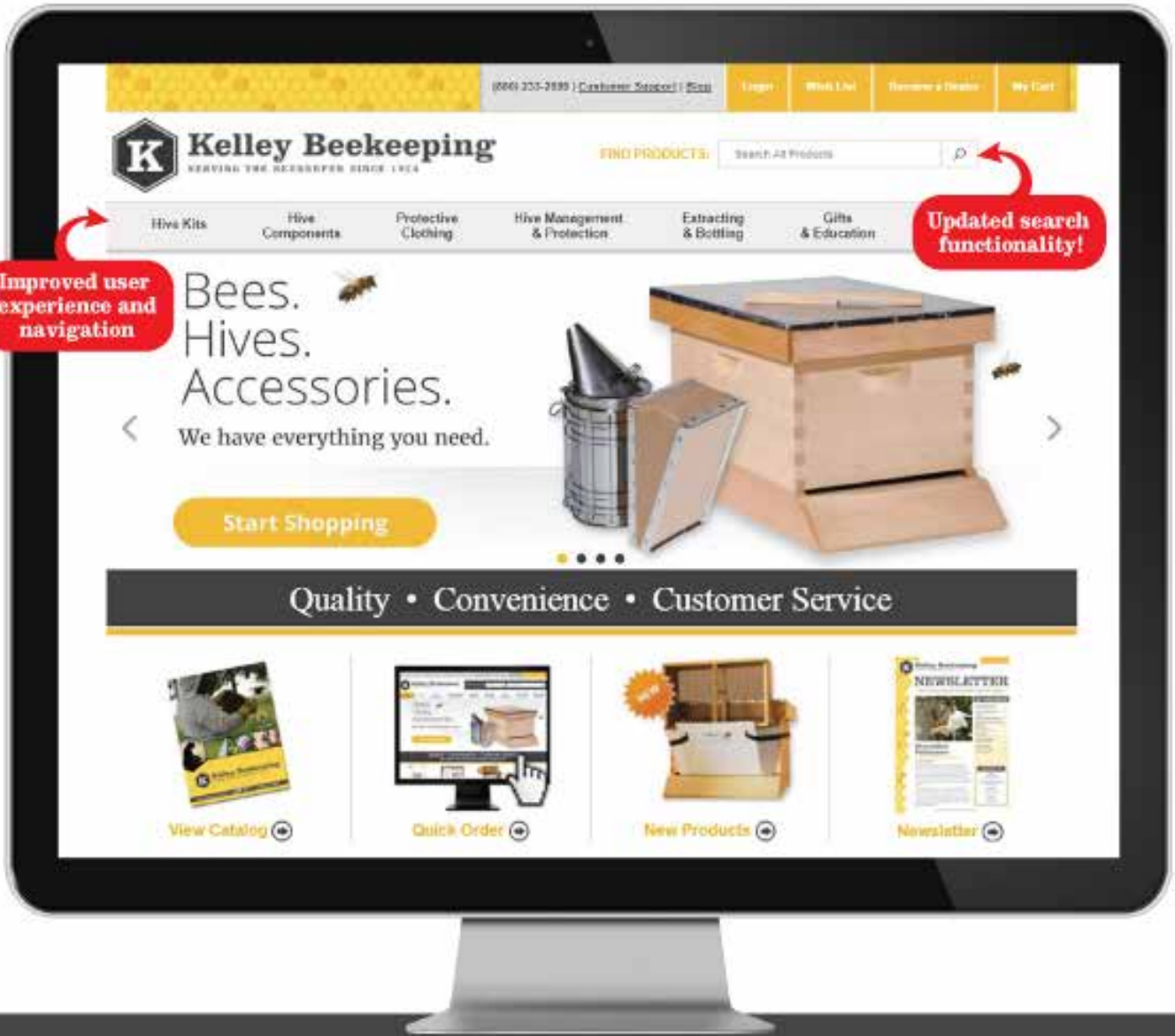
And speaking of family...here's some hopeful thoughts to send to our family of beekeepers in Montana and British Columbia, where wildfires are ravaging the landscape. I drove from Pullman, WA to Taos, New Mexico recently and quite sadly, the sky was thick with smoke all the way from the Washington-Idaho border to Salt Lake City, Utah. It took me 10 hours to drive from southeastern WA to northern UT and I could smell smoke the entire way.

Fortunately, once I hit the Utah-Colorado border the skies opened up and a light mist descended. The monsoon rains are back in the Rockies and the southwest. Though water can be a blessing and a curse, the blessed rains bring a nice late summer/early fall nectar flow. However, I have to curb my enthusiasm as it could be thunder snow on the mountains and an early frost. Last year we had first snow on August 16th in the Sangre de Cristo mountain range of northern NM and southern CO. Yet the rainbows abound!

**Somewhere over the Rainbow,
Melanie Kirby**

Melanie is celebrating her 20th beekeeping anniversary this fall. In celebration, she is taking a "sabbatical" from Zia Queenbees Farm & Field Institute to pursue graduate studies and manage the WSU Bee Lab. She can be reached at survivorqueenbees@gmail.com.

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Big things are happening here at Kelley Beekeeping! We have been hard at work building a brand new website to make your shopping experience faster and easier. You can still find us at KelleyBees.com, but once you're there, you'll notice a whole new look and improved usability.

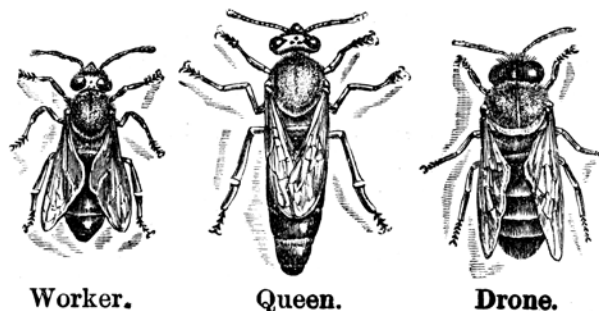
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Bee Health

From Bloom to Boom: An Investigation of Oregano (Monarda Fistulosa) for Pollinator Health & Human Wellness

by Jane Moorman, NMSU & Las Cruces Sun News

ALCALDE, NM – An oregano farmer, a beekeeper and a researcher with New Mexico State University are investigating the medicinal benefits of oregano for bees and whether these benefits are transferred to humans through honey.

“Our goal is to examine and promote *Monarda fistulosa* as a new crop or accessory planting to affect bee health and also produce a hive product and field crop that can be processed in a number of ways,” said Rob Heyduck, senior research specialist at NMSU’s College of Agricultural, Consumer and Environmental Sciences’ Sustainable Agriculture Center at Alcalde.

Monarda fistulosa, a member of the mint plant family commonly called wild bergamot or bee balm, is known as Oregano de las Sierra for its oregano flavor.

“There are 60 plants that produce the flavor of oregano,” said Embudo farmer Todd Bates, who is cultivating the plant normally found wild in the mountains. “The flavor comes from the chemical compounds that also give the plant its medicinal qualities.”

It is those medicinal qualities that Zia Queen Bees owner Melanie Kirby is interested in.

“Bee health is of critical importance in pollinator productivity,” Kirby said. “As a beekeeper, pollinator productivity is becoming more and more challenging due to weather fluctuation, increase in pest and disease issue, compromising habitats and management practices.”

After placing beehives in Bates’ field for a couple of years, Kirby thinks there are possible health benefits from the bees feeding on the *Monarda* flowers.

Bates and Kirby approached NMSU researcher Heyduck to conduct a study. NMSU’s College of ACES received a U.S. Department of Agriculture specialty crop block grant to finance the study.

“To analyze Oregano de la Sierra and its effects on bee health, and potential human health benefits



NMSU photo by Jane Moorman

Bee Health *cont'd*

through value-added products, we are coordinating with several additional institutions and laboratories both in-state and through the USDA Agricultural Research Service," Heyduck said.

The study is located on a site in the northern Rio Grande Valley and Sangre de Cristo mountain range. Nucleus honeybee colonies established by Zia Queen Bee are located at the three sites.

"We are collecting nectar directly from the flowers and bee-gathered nectar, as well as honey from the hives," Kirby said. "We are also gathering pollen from the hives."

The collections are scheduled for pre-flowering, middle of flowering and after flowering. Don Hyder and Eric Miller, professors of biology and chemistry, respectively, at San Juan College in Farmington, are using gas chromatography to analyze the nectar and honey samples to determine chemical compounds.

"These compounds, including carvacrol, thymol, p-cymene, have shown bactericidal, viricidal and miticidal activity in previous research," said Heyduck. "We are hoping the analysis will show that these medicinal compounds are in the honey."

"Among herbalists, oregano has provided relief from respiratory and digestive symptoms," Bates said. "It would be wonderful if these properties were also gained from the honey."

Kirby and Heyduck are also collecting bees for analysis of their health.

"By feeding bees in isolation and free-choice, we are seeking to determine a potential bee preference and evaluate the parasite loads of bees fed different diets," Heyduck said. "We are sending the live bees to Jay Evans at the USDA-ARS Bee Research Laboratory in Beltsville, Maryland, to have the bees analyzed for specific viruses and diseases."

Bees preserved in saline solution are being sent to the Bee Information Partnership, a nation-wide beehive health database.

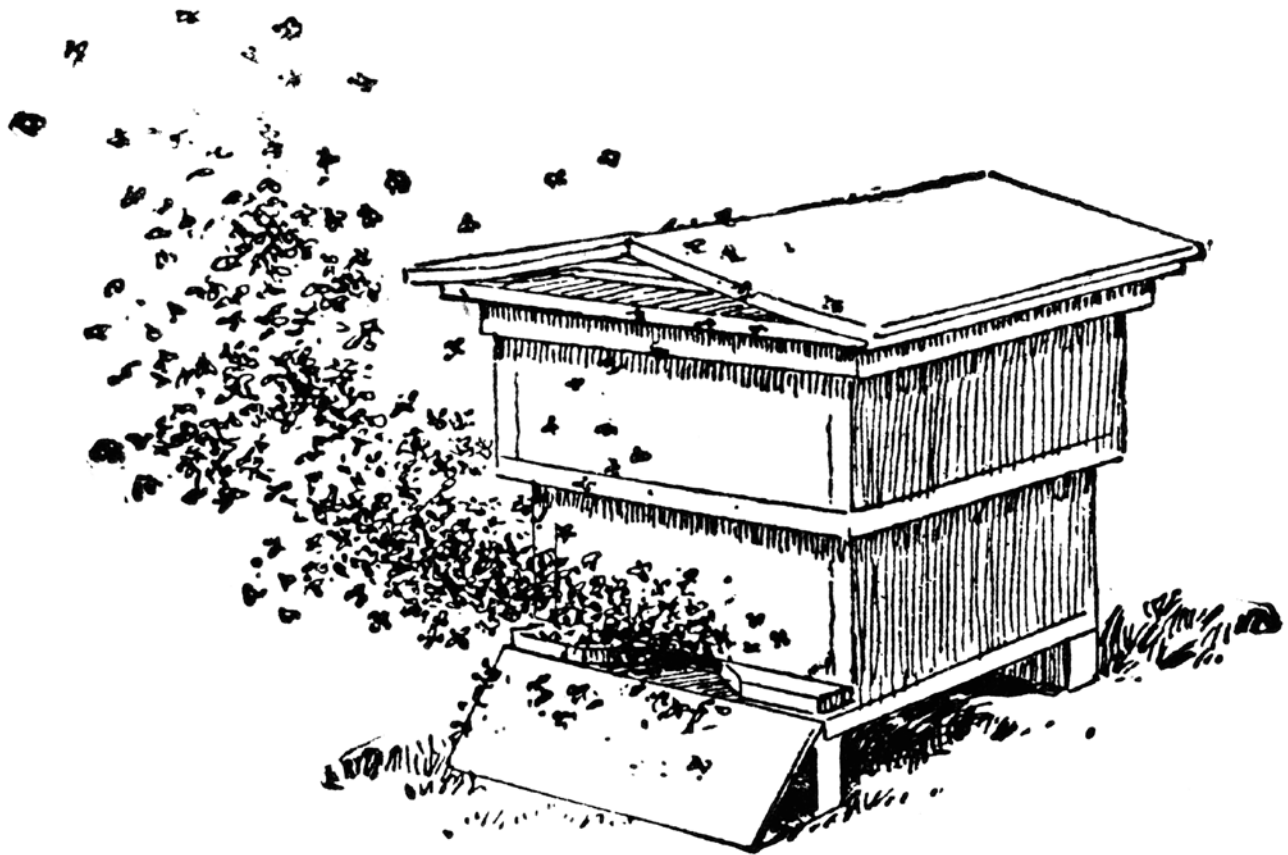


Beekeeper Melanie Kirby of Zia Queen Bees and NMSU senior research specialist Rob Heyduck gather bees for oregano study. Photo: NMSU photo by Jane Moorman

Bee Health *cont'd*

"We are adding our findings to that database to have records of these exact hives as they progress," Heyduck said. "Population samples of Varroa mite, a parasite threatening honeybees worldwide, will be taken at multiple times from the project hives and will serve as an indicator of oregano's effect on bee health."

Regarding the outcome of the research, Heyduck said, "Todd works with oregano as an herb you can add to food. We hope that this research will bring about natural value-added products. Also using the Oregano de la Sierra plant in revegetation mixes, habitat enhancement, and pollinator gardens could add something medicinal for the pollinators in the area."



Bee Science

No Offense, American Bees, But Your Sperm Isn't Cutting It

By Ryan Bell

Editor's note: This story is for mature bees only.

With an American honeybee queen for a mother and a European honeybee drone for a father, this worker bee has a level of genetic diversity unseen in the U.S. for decades. Researchers at Washington State University hope a deeper gene pool will give a new generation of honeybees much-needed genetic traits, like resistance to varroa mites. The parasite kills a third of American honeybees each year.

Seducing a honeybee drone – one of the males in a colony whose only job is to mate with the queen – is not too difficult. They don't have stingers, so you just pick one up. Apply a little pressure to the abdomen and the drone gets randy, blood rushing to his endophallus, bringing him to climax.

"They're really accommodating," says Susan Cobey, a honeybee breeder on Whidbey Island, Wash. "One ejaculate is about 1 microliter, and it takes 10 microliters to artificially inseminate a queen."

Since 2008, Cobey has done her share of bee abdomen rubbing as part of a research team from Washington State University traveling through Europe and Asia. They've collected sperm from native honeybees in Italy, Slovenia, Germany, Kazakhstan and the Republic of Georgia – countries where honeybees have favorable genetic traits, like resistance to the varroa mite. The deadly parasite has been cited as a major factor in bee deaths, along with genetics, poor nutrition and pesticide exposure, according to a major report from the USDA and EPA in 2013.

Varroa mites are an invasive parasite from Asia that sucks hemolymph (bee blood) from adult and larval honeybees, weakening their immune systems and transmitting deadly pathogens, like bent wing virus. If left untreated, a varroa infestation can kill a colony in one year. First detected on U.S. soil in 1987, varroa has spread quickly, infesting upwards of 50 percent of American hives. Last year, 33 percent of U.S. honeybee hives died. That's troubling for the plight of honeybees and U.S. agriculture, which relies on pollinators to produce one-third of the food we eat.



Megan Asche/Courtesy of Washington State University

Bee Science *cont'd*

The buzz on American bees: too much inbreeding

According to the WSU research team, the root cause of the U.S. honeybees' vulnerability to varroa is a dwindling gene pool that has left them short on genetic traits that help honeybees resist varroa elsewhere in the world.

"Honeybees aren't native to America," Cobey says. "We brought them here. But the U.S. closed its borders to live honeybee imports in 1922, and our honeybee population has been interbreeding ever since."

WSU has monitored the genetic diversity of honeybee queens in Washington and California since 1994, showing a steady decline. Dr. Brandon Hopkins, the team's expert in freezing and thawing bee sperm, likens honeybee breeding to a poker game played with an incomplete deck of cards. "There's no way to get a four-of-a-kind if there aren't four aces in the deck," Hopkins says.

The imported semen has restacked the deck. WSU's crossbred honeybees already test positive at a higher level of genetic diversity than the first queens tested in 1994. "This doesn't mean they are superior in performance to the other bees," Hopkins says. "It means we have a better chance of finding rare and unique traits."

It used to be that honeybee breeders selected for bees that produced more honey, grew more populous hives, and were gentler to handle. Now, they want honeybees that can resist varroa. Without it, beekeepers must rely on costly "miticide" treatments to control varroa.

However, studies suggest the mites are developing resistance to pesticides and the chemicals may be harming honeybees, compounding the problem of widespread bee deaths known as Colony Collapse Disorder.

"I lost 40 percent of my colonies to varroa last fall," says Matthew Shakespear, whose company, Olson's Honeybees, raises 16,000 hives in central Washington. "I'm not taking any more chances. We've already done five treatments, compared with the two treatments we applied this time last year."



Brandon Hopkins, a cryopreservation specialist, works in Washington State University's fruit tree orchard in Pullman, Wash. As a doctoral student at WSU, Hopkins perfected a system of freezing and thawing bee semen for use in artificial insemination. Shelly Hanks/Courtesy of Washington State University

A problem that blooms in almond orchards

Pollination services like Olson's Honeybees are the cornerstone of a \$15 billion segment of U.S. agriculture. A hefty share of that is the almond industry, whose trees are completely reliant on honeybees for pollination. It's also the industry most susceptible to fallout from the varroa epidemic in bees: California's almond groves serve as an incubator for the growth and spread of varroa mites across the United States.

"There are 800,000 acres of almonds in California," says Patrick Heitkam, owner of Heitkam's Honey Bees in Orland, Calif. "It takes two hives to pollinate one acre, so that's a need for 1.6 million hives. There are only 500,000 hives in the state, so the rest are trucked in from around the country."

Almond trees bloom in January, a time of the year when most honeybee varieties are dormant in their hives. But an Italian species of honeybee, *Apis mellifera linguistica*, which evolved in the warm Mediterranean climate, is active when the first almond blossom pops in late-January, making them the most popular variety in the U.S.

The trouble is, Italian honeybees are extremely susceptible to varroa mites, because their hives grow so big, so fast and so early.

"Italian honeybees rear their babies and varroa mites nearly one-for-one," says Dr. Robert Danka, a research entomologist at the USDA's Honey Bee Breeding, Genetics and Physiology Research Unit in Baton Rouge, La.

Lessons from mighty Russian stingers

Like the WSU team, Danka has also looked to the Old World for an answer to varroa mites. Between 1994 and 2000, he traveled to the Russian far east, where a local honeybee, *Apis mellifera*, has developed resistance to varroa. They are descended from European honeybees brought by Russian settlers traveling the Trans-Siberian Railway at the turn of the 20th century. The journey inadvertently transplanted the honeybees into the native range of varroa mites in east Asia, where they evolved resistance to the pest.

These Russian bees groom themselves, biting and crushing the mites. They also have a prevalent genetic trait called varroa sensitive hygiene (VSH), aborting larval honeybees infested with mites and removing them from the hive before the parasite can spread.

Danka brought back 360 queens, the basis for what is now a robust Russian honeybee population in the United States. While their prowess as mite biters continues, Russian honeybees haven't proven up to task as commercial pollinators. The queens are used to long Russian winters, so they are slow at building up their hives, meaning only a small number are ready to fly in the almond groves come January.

Survival of the fittest bees

Still, Danka says the Russian honeybee offers proof that a European subspecies can develop varroa mite resistance through natural selection. That evolutionary process is interrupted in commercial beehives, because of the "prophylactic use of miticides," Danka says. "We're maintaining varroa-susceptible bees through chemistry. If we took away all those pesticide treatments – and to be clear, I'm not advocating for this – the results would be horrific. But in a rather short period of time, only varroa-resistant bees would be left." And those bees could be the basis of a new population.

Matthew Shakespear, the commercial honeybee keeper in Yakima, Wash., would rather not spend money treating his hives for varroa mites. Starting last year, he diversified his business to include hives of Carniolan honeybees, *Apis mellifera carnica*, a subspecies native to Eastern Europe.

The queens he bought were the great-great-great granddaughters of a honeybee drone that Susan Cobey found in the mountains of Slovenia.

"Maybe these new genetics can deal with the varroa mites naturally, rather than having to rely on chemicals," Shakespear says. "It's time to start widening our gene pool."

Ryan Bell is a journalist based in Washington State. Find him on Twitter @ryanbellwriter. This story was produced in collaboration with the Food & Environment Reporting Network, an independent, nonprofit news organization.



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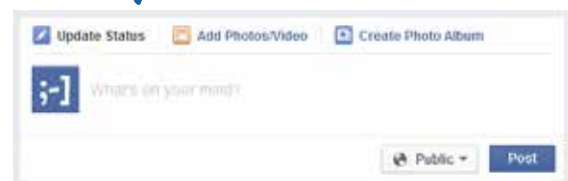
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3



Apitherapy

10 Uses for Honey

From beesinfo.info

Honey is a delicious natural product that besides being a great alternative to sugar, it also boasts health benefits. You may have heard of the anti-flu properties of honey and how much it helps maintain your immune system.

1. Is good for memory

Honey is basically made up of carbohydrates and water. It also has vitamins and minerals that are substances that help the body both absorb calcium (an important mineral for thought processing) and prevent memory loss caused by brain cell damage.

2. Helps to cure hangover

Consuming a spoonful of honey or drinking a tea sweetened with honey helps the body to metabolize alcohol faster. This is due to the high levels of fructose present in honey.

3. Facial cleansing

In contrast to most facial cleansers, which contains many chemical compounds, honey is natural and has properties that remove dead skin cells and remove bacteria and impurities from the skin. Can be used as a standard exfoliant or with coconut oil.

4. Antibiotic

Honey, even placed on wounds, stimulates the healing process and prevents bacterial growth. Scientific studies have shown that honey can contain or kill bacteria such as *Escherichia coli* in the form of *Staphylococcus* strains.

5. Antihistamine

In at least two studies, honey was compared to commonly available cough inhibitors and antihistamines. Both observed the presence of elements that reduce nocturnal cough better than industrialized medicines.

6. Help in the diet

Just like pepper and green tea, honey can speed up metabolism. So if you need extra help with your diet, try green tea with honey to accompany an afternoon snack without guilt.



7. Helps fight insomnia

Honey sugars stimulate the natural production of serotonin. Serotonin is the main neurotransmitter responsible for our sense of well-being. The body converts serotonin into melatonin, the substance that regulates our sleep. When the brain processes tryptophan from honey, it stimulates the production of melatonin.

8. Relieves allergies

Much research has been done on the effect of honey on alleviating allergies. The results are still inconclusive, but the naturopaths claim that traces of pollen remaining in honey can act as inoculants. They stimulate the body to produce antibodies leading to less discomfort in response to an allergy.

9. Decrease bad breath

The antibacterial properties of honey are also useful for overcoming halitosis. A very popular use is to mix a teaspoon of honey, 1/8 of the spoon with cinnamon and mix in half a cup of warm water. Gargle with this blend for fresh breath.

10. Treatment for Dandruff

A mixture of 9 parts of honey with 1 part of water minimizes the appearance of dry or dandruff hair. Frequent use can result in less itching and irritation within one week.



Bee Arts

Registration for the Honey Sensory Experience is Open!



FRIDAY & SATURDAY, NOVEMBER 10 – 11, 2017
HONEY SENSORY EXPERIENCE

\$575 (Early-bird registration)
\$625 (After October 1st)

An Introduction

The Honey and Pollination Center is very excited to announce the Honey Sensory Experience: An Introduction, to be held November 10 and 11, 2017. Attendees will learn expert tips on how to taste honey--sample a broad selection of varietal honey; learn the specifics of honey composition, including nutrition, flavor, structure, and what defines a true varietal honey.

This course is for beekeepers, professional buyers, importers, category managers, honey packers and anyone who wants to gain expertise in the arena of honey analysis.

Teachers include: Orietta Gianjorio, Member of the Italian Register of Experts in the Sensory Analysis of Honey, Hanne Sivertsen, Sensory Researcher, Department of Food Science and Technology, UC Davis, and Amina Harris, Director of the Center.

\$575 (Early-Bee)
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[**Register here!**](#)

Bee Thinking About The Soil Association

[Learn more about the Soil Association](#)



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With the help of our members, the Soil Association campaigns for positive changes to food and farming. The Soil Association runs schemes to secure the future of farming and lobbies government to make changes to harmful policies. Soil Association Certification engages with farmers, processors, caterers and crofters to bring our organic and ecological principles to life.

Check out Soil Associations bee related videos at: <https://youtu.be/A1FbrTa1yao>

The Soil Association is the UK's leading membership charity campaigning for healthy, humane and sustainable food, farming and land use. The Charity has a wholly owned subsidiary Soil Association Certification Limited, the UK's largest organic certification body. This is run as a not for profit company that as well as helping to deliver parts of the Charity's strategy also generates financial returns that are ploughed back into the Charity's wider work. The Charity helped to establish and has ongoing involvement in the Soil Association Land Trust. The Land Trust is a charity in its own right, charity number 1121011, established to acquire and maintain farmland sustainably and to connect the public with land stewardship.

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