



[www.JeffcoBeekeepers.org](http://www.JeffcoBeekeepers.org)

Spring 2022, Volume 8



# Jefferson County Beekeeper Association



Spring 2022, Vol. 8

Jefferson County Beekeeper Association  
Newsletter, Volume October 2021, Vol. 7

### Association Leadership

President	Doug Rush
Vice President	Jessica Padgham
Secretary	April Johnson, Pat Donahue
Treasurer	Kip Davis, Teri Dowgiert
Apiary Manager	Kathy Gill

### Editors (alphabetical)

Kathy Gill	Eric Skougstad
April Johnson	

### Writers (alphabetical)

Pat Donahue	Kathy Gill
-------------	------------

### Layout/ Design

Eric Skougstad/ Uff Da Media, [Antiquated magazine](#)

JCBA Meetings, second Sunday of every month at 1 p.m.,  
Maple Grove Grange Hall, 3130 Youngfield St., Wheat  
Ridge, CO 80215

## Table of Contents

### Announcements Page 3

A pollen nutritional database is being developed, JCBA is now on Instagram, and more!

### Seasonal Calendar Page 4

A checklist of things we should be doing in and around the hive this time of year.

### The Dandelion and the Bee Page 5

A look at the importance of the dandelion to the bees this time of year.

### Time for Thyme Page 6

The use of Thyme and Thymol Verroa Mite treatments, and their benefits.

### Do You Know? Answers Page 7

The answers to the questions at the bottom of some of the pages.

## Membership

Yearly dues: \$25.00 which includes membership in the Colorado State Beekeepers Association.

We are not set up yet for on-line payments. Email the club treasurer for information on how to join.

[jeffcoghoneybees@gmail.com](mailto:jeffcoghoneybees@gmail.com)

You can also visit us on [Instagram!](#)

## About Us

Jefferson County Beekeeper Association was established in 1998 by a group of backyard beekeepers. Meetings with outside speakers were held several times a year combined with social events. The club went dormant in 2007 as membership waned but was never officially abolished. In 2019 with a surge of interest in beekeeping and new ordinances allowing backyard beehives, local beekeepers saw the need to revitalize the club. We hope to connect with new and experienced beekeepers in and around Jefferson County and are looking forward to many years of successful beekeeping!

**COVER:** Getty Images, bees on a dandelion. Dandelions are the first available source for bees in the spring.

**Photo Credit:** Proxyminder on Pintrest

Website: [www.jeffcobeekkeepers.org](http://www.jeffcobeekkeepers.org)

Email: [jeffcoghoneybees@gmail.com](mailto:jeffcoghoneybees@gmail.com)



### Colorado State Beekeepers Association

CSBA has decided to continue the BuzzZoom Extras. The first one was held on February 22, 2022. The speaker was Julie Mustard, PhD from the University of Texas Rio Grande Valley. She spoke about her work with honeybee learning and memory and how it is affected by nutrients found in nectar. Members of CSBA will get a link to attend the zoom meetings. CSBA Summer Meeting will be held in person on June 10, 11, 12, 2022 in Rifle Colorado. More information will be coming.

Check out JCBA on [Instagram!](#)

### Development of a Pollen Nutritional Composition Database

A nutritional database is being developed for bee forage plants in North America which will benefit all bee pollinators, native and managed. Through Oregon State University and Mississippi State University beekeepers, gardeners, and the public will collect samples of pollen in their local areas and send to MSU for them to determine protein levels of pollen in the samples. The info will then be part of a national database that will be available to everyone.

If you are interested in a project as this or have plants, we can gather pollen from please let the club know at [jeffcohoneybees@gmail.com](mailto:jeffcohoneybees@gmail.com).

## Jefferson County Beekeeper Association Website

At [jeffcobeekeepers.org](http://jeffcobeekeepers.org) you can sign up for membership, see upcoming meetings, find a mentor, and more! Be sure to check it out.

**If there is a topic you want us to provide or want to share or write an article let us know. Write to [jeffco-honeybee@gmail.com](mailto:jeffco-honeybee@gmail.com)**

## Meetings

Meetings are the second Sunday of each month at 1 p.m. Follow-up clinics will be held at the Apiary when weather permits.

Dues include membership to Colorado State Colorado Beekeepers Association.

## Mentoring

Beekeeping may seem overwhelming. Indeed, there is quite a bit to do and remember! Jefferson County Beekeeper Association offers mentoring programs. We have seasoned keepers willing to take new keepers under their wings. Contact us for more information.



# Seasonal Calendar

By Kathy Gill

March is here; what should beekeepers be doing in their hive now? One of the challenges in Colorado is the unpredictable weather. Plan accordingly. Colorado spring weather goes from warm to cold to very cold quickly, so consider this when your excitement grows to open your hives and break that propolis. It is essential to know what the weather predictions are in your area. Each year is different, and each local is different. The cluster moves up into the top box by now. Bees will die of starvation in early spring when they have eaten their honey stores and have no other resources. The queen starts to increase her egg-laying, which means more mouths to feed. You can pop the top telescoping lid, see their resources, and feed accordingly in your candy board.

Some beekeepers feed sugar syrup this early, providing freezing weather is not in the forecast. If so, a sugar solution 1:1 can be provided. One cup of white granulated sugar dissolved in one cup of warm

water is used. Feed until natural nectar begins. Pollen patties can be provided about four weeks before honey flow. Keep in mind that if pollen is fed, the potential for an earlier swarm occurrence may happen.

Inspect your hives when the weather gets warmer; you don't want to chill the brood. Remove mouse guards; make sure you have water available. Cull and replace the old comb. The size of old comb cells become smaller due to accumulated debris left in them and possible pesticide contamination. Reverse the brood boxes to give the queen more room to lay. Be attentive to the buildup. Clean up bottom boards.

April, the weather begins to improve. Early plants like dandelions appear. Continue to feed until nectar and pollen are being brought in. Colorado may still have some cold spells, but the bees will be fine. Inspect all the hives to make sure they have enough food. Look for any abnormal brood patterns and act on them. This is an excellent time to equalize your hives

by combining or re-queening. If adult drones are present, consider splitting the strong hives. Splitting is good swarm prevention and will increase your amount of hives.

May is the time the hive really starts to grow. The brood chambers fill up. Look for about 7-8 frames of bees before adding a super. Start your mite checks. Treat if a 2% threshold is obtained. See the IPM Integrated Pest Management plan here.

<https://coloradobeekeepers.org/help-the-honeybee/decrease-your-chemical-usage/integrated-pest-management/>  
<https://extension.colostate.edu/docs/pubs/insect/ihm-bee.pdf>

<https://entomologytoday.org/2020/02/07/varroa-mites-new-guide-outlines-integrated-pest-management-options/>

Honey bees have a natural instinct to swarm. Swarm prevention includes relieving the congestion by reversing the brood boxes, adding another brood box, adding supers early.

Remove some of the brood

frames to another hive or start a nuc. Add empty frames or foundations to give more laying room.

Remove all queen cups and all queen cells. You can move each queen cell and start a mini nuc or add one to a five-frame nuc. Then use that resource if you need a queen later. Another possibility is to give it to another club member or sell her.

Requeen the hive, the old queen's pheromones may not be adequate.

Signs a hive is getting ready to swarm include -numerous queen cups, and queen cells are observed along the bottom of the frames. The queen appears to have lost weight. The brood nest cells are filled with nectar or honey. The queen has nowhere to lay. Culling the queen cups and cells may delay the swarm, but the bees will do what bees do. The swarm with half the bees and the queen gorge themselves with honey and leave about a day before a new virgin queen emerges.

## International Colors for Marking a Queen

Color	Year Ending In
White	One or Six
Yellow	Two or Seven
Red	Three or Eight
Green	Four or Nine
Blue	Five or Zero

Do you know?

1. Temperature has a marked effect on plant growth and nectar secretion (True or False) (Answer on page seven)



# Dandelion: Friend or Foe?

By Pat Donahue

Underappreciated, underutilized, and often maligned. Once a cherished crop, now considered a weed; should we rethink this...

The Dandelion is officially known as *Taraxacum officinale*. The Dandelion is a member of the aster or Asteraceae family. Dandelion means "Lions Tooth" and was named this because of the jagged shape of the foliage. The Dandelion is native to Asia and was brought to the United States as a crop for its nutritional and medicinal benefits. However, you will find Dandelions worldwide, including Europe, North America, southern Africa, South America, New Zealand, Australia, India, and more. Unfortunately, the Dandelion is now referred to by many as a weed. As a result, much time, effort, and pesticides are spent trying to eradicate them from our lawns.

However, we may be missing the boat by overlooking this plant and favoring grass over it. Although the Dandelion may not be the first to bloom in the Spring, it is an early bloomer and a frequent bloomer, making it a source of nectar for our bees not only in the Spring but also throughout the year, including during times of dearth. In addition to being a benefit to pollinators, other advantages of the Dandelion are that it is a lawn aerator and a source of food for people. The flowers and leaves can be eaten in a salad, and the roots sipped as tea. The only part of the Dandelion that is not edible is the stalk. The Dandelion is low maintenance,

it needs very little care, it's full of minerals and vitamins such as calcium, iron, vitamin C, and potassium, and it's a gorgeous happy yellow flower that announces, "It's Springtime." The Dandelion is a survivor and resilient. The more you ignore the Dandelion, the better it does.

The Dandelion is a perennial. The flower is a rosette of thin pedals with sharp pointed edges which open during the day and close at night. The stalk the flower sits on is hollow and leafless and contains a milky latex sap. If you have a latex allergy, best to wear gloves when caring for your Dandelion plants. The flower will turn to seed within three days of blooming, and each flower can produce up to 5000 seeds which are great food for the birds.

While the Dandelion is a good source of early-season nectar for the honey bee and other pollinators, it does not provide everything the honey bees need. For example, the Dandelion lacks certain essential amino acids, including arginine, isoleucine, leucine, and valine. Therefore, it is considered a poor source of protein for pollinators which, if this were the bee's only source of protein, could negatively impact such things as brood production. However, like most other living things, bees need a diverse diet to meet their nutritional requirements. A study currently underway by Ramesh Sagili, Associate Professor at Oregon State University, and Priyadarshini Chakrabarti Basu, former OSU research assistant

and now an assistant professor at Mississippi State University, will be looking at the protein content of Dandelion pollen as well as many other flowers and tree blooms. This study will give us a better idea of which plants are best for our bees. This project involves community members who will collect pollen from various plants in the U.S. and Canada and send it off to the research teams. Researchers Sagili and Chakrabarti Basu are in year one of a three-year project, collecting and compiling pollen data to help us better understand the global decline of bee populations. For more information on this project or to get involved in the project, follow the link below.

The Dandelion can grow in almost any condition and at any elevation ranging from the lowlands to 8000 feet. The planting zones are 3 through 10. The Dandelion will grow in wet or dry conditions and is, for the most part, pest and disease-free. But the Dandelion does best in full sun or part shade and prefers fertile and slightly acidic soil. Plants can be started indoors and transferred outside into the garden or pots when the plants are 3-4 inches tall and the soil temperature is 50 degrees or above. Plants can also be grown outside once the risk of a hard frost has passed and the soil temperatures are above 50 degrees. When planting outdoors, space seeds or thin plants 12 inches apart. Seeds can be collected from your pesticide-free lawn or purchased. Cut the flowers before

they turn to seed unless you want Dandelions throughout your yard. Cutting the flowers before they seed will also help the roots grow longer, which is preferred if you plan to harvest the roots for tea.

If you don't want Dandelions in your yard, there are non-chemical methods to control them. For example, Dandelions like sunshine, so one of the best ways to control the Dandelion is to allow your grass to grow 3 to 4 inches. Mulch can be used as a non-chemical management option. The taproot of the Dandelion can extend up to 15 feet below the soil, so pulling a dandelion out will not be effective in getting the taproot out, nor is it effective in getting rid of the Dandelion because it can reproduce from a partial tap root.

#### Links for Further Research

1 [Garden Myths. Are Dandelions Really Important to Bees?](#) Ontario, Canada. Robert Pavlis, Master Gardener.

2 [OSU Study will provide insight into optimal nutrition for bees.](#) Oregon State University Newsroom, July 26, 2021.

3 [How to Grow and Harvest Dandelions for Greens, Roots, and Flowers.](#) February 12, 2021 by Sylvia Dekker.

4 [Dandelion as a Landscape Weed.](#) Article Updated: June 1, 2017. Tim Abbey. Integrated Pest Management Entomology Horticulture.

Do you know?

2. What are three primary sugars found in nectar and which one is most attractive to honey bees?  
(Answer on page seven)

# It's Thyme to Confuse Mites with Thymol

By Pat Donahue

Beekeepers choosing to treat colonies "naturally" essential oils can be used exclusively or included as part of an integrated pest management plan (IPM)<sup>1</sup>. However, as with any product used to care for bees, it is imperative to follow the recommended guidelines to avoid harming or killing your bees and do your research before using any essential oils in your hives. Although essential oils are natural substances used to control pests (Biopesticides), these substances can be as toxic and are more toxic than synthetic pesticides because they are more concentrated than what is found in nature<sup>2</sup>.

Beekeepers use many essential oils for various

1 Dr. Arathi Seshardri & Thia Walker. [Strategies for Identifying and Mitigating Pests and Diseases Affecting Colorado's Honey Bees](#). 2nd Ed. December 2019. Page 1.

2 Same as #1, pg. 13.

purposes, such as lemon-grass for luring a swarm or eucalyptus and peppermint to repel bees. The essential oils that have been tested for use in Varroa mite (*V. destructor*) control include wintergreen, clove, marjoram, sage, camphor, and thymol. These essential oils are believed to be somewhat effective due to the neurological effect they have on the *V. destructor* mite<sup>3</sup>. However, this article focuses on the use of thymol in the hive.

Thyme is a woody perennial that prefers dry, sunny conditions and loamy, sandy soil. The worse the soil, the better the plant does, and the more you fuss with thyme, the

3 Morgan A. Roth, James M. Wilson, Keith R. Tignor, Aaron D. Gloss. [Biology and Management of Varroa Destructor \(Mesostigmata: varroidae\) in Apis Mellifera \(Hymenoptera: Apidae\) colonies](#). 2020, Journal of Integrated Pest Management. Volume II, issue 1.

less durable it is<sup>4</sup>. The grey-green leaves are evergreen and can be harvested in the winter. There is no need to harvest thyme before it blooms because the leaves maintain their flavor even after the plant blooms. Thyme hardiness zones are 5-9. It is prudent to check the plant hardiness zone in your area before planting to ensure you plant the correct variety of thyme for your specific growing zone. An interactive map to check zone hardiness by zip code is available through the USDA<sup>5</sup>. Thyme blooms in the spring and summer with various flower colors, including white, pink, and lavender, and bees like all kinds of thyme. There are many varieties of thyme, but the more popular ones include: Common Thyme also known

4 [Thyme Plant profile](#). The Spruce, Marie Iannotti. Updated July 25, 2021.

5 [USDA Plant Hardiness Zone Map](#).

as Mother-of-Thyme; Lemon Thyme (a citrusy variety along with Lime, Orange Balsam, and Lemon Frost); Wolly Thyme; Wild Thyme, Elfin Thyme (creeping variety); and Pennsylvania Dutch Tea Thyme<sup>6</sup>. If you plant several types of thyme, the bees will cross-pollinate it for you<sup>7</sup>.

If you want to grow your own thyme, you will have better luck from cuttings rather than trying to grow it from seeds. To propagate thyme from cuttings:

Clip off a stem about 6 inches long from an established but not a woody stem with new green growth at the top.

Leave two or three sets of

6 [Types of Thyme Plants: Varieties of Thyme for the Garden](#). Gardening Know How. Amy Grant. 2022.

7 Garden Mentors. [Thyme for Bees](#).

Continued on next page



Thyme: (*Thymus vulgaris*.) Common names are Thyme, Common Thyme, Garden Thyme, English Thyme

Do you know?

3. Nectar is the primarily a solution of sugars in water and the basic raw product of honey? (True or False). (Answer on page seven)

## Jefferson County Beekeeper Association

leaves at the top.

Plant the cutting in a container filled with ordinary potting soil mixed with sand or perlite.

Cover the container with a loosely secured plastic bag to hold in humidity.

Set the container in bright indirect light and keep it moist.

Aerate once a day by removing the bag.

After about six weeks, the cuttings should be rooted sufficiently to transfer to a pot or the garden<sup>8</sup>.

Thymol is the oil extracted from the thyme plant and is used in the hive to control Varroa mites. Common thymol-based varroa treatments are Apiguard, ApiLife Var, and Thymovar. Apiguard comes in a gel that contains pure thymol, and ApiLife Var and Thymovar come in strips and contain thymol, eucalyptol, menthol, and camphor.

Both Apiguard and ApiLife Var are registered pesticides approved by the Environmental Protection Agency (EPA) for use in beehives on the Federal level. Thymovar is not registered in the United States for use in beehives<sup>9</sup>. To check whether a product is approved for use in Colorado or any other state, you can contact the National Pesticide Information Center (NPIC)<sup>10</sup>; the National Pesticide Information Retrieval System (NPIRS)<sup>11</sup>, or you can contact

**8** [Thyme Plant profile](#). The Spruce, Marie Iannotti. Updated July 25, 2021.

**9** [EPA-registered Pesticide Products Approved for use in Bee Hives](#). January 2022.

**10** [National Pesticide Information Center](#). 800-858-7378

**11** [National Pesticide Information Retrieval System](#).

the Colorado State University Extension Office at (303) 271-6620. After contacting the NPIC and the NPIRS, I confirmed that Apiguard is approved for use in beehives in Colorado. Unfortunately, I was not able to confirm the same for ApiLife Var. I reached out to the CSU Extension Office regarding the use of ApiLife Var in Colorado, but as of the writing of this article, I have not received a response.

Thymol is a fumigant that produces a vapor within the hive when exposed to air<sup>12</sup>. The ventilation and cleaning activities of the bees distribute the thymol vapors throughout the hive. Thymol is a repellent to bees and causes them to ventilate the hive<sup>13</sup>. The bees also remove thymol from the hive as part of their cleaning behavior, thereby transporting it throughout the hive<sup>14</sup>. Thymol is most effective with temperatures between 59- and 86-degrees Fahrenheit. The ideal temperature for applying Thymol treatments is between 68 and 77 degrees Fahrenheit. Thymol should not be applied at temperatures below 54 degrees Fahrenheit. Again, the treatment works as a vapor that requires bee activity to transport it, and if the temperatures are low, the bees

**12** [Britannica, The Editors of Encyclopedia Britannica, "fumigant"](#). Encyclopedia Britannica, Invalid Date,

**13** Meng Yong Lim, Stephen R. Quarrell, Geoff R. Allen, & Andrew B. Barron. [Effects of Thymol on European Honey Bee Hygienic Behavior](#). February 21, 2019.

**14** Bee Culture Magazine. Claudia Garrido. [Thymol-Varroa Control](#). February 27, 2018.

are not active. If the temperature during the application of thymol is too high, it can kill the bees, and if the temperatures are too low, it won't kill the mites<sup>15</sup>. The use of thymol oil should be approached with caution because thymol oil is injurious to bees at high concentrations<sup>16</sup>.

The thymol fumes block the pores located on the forelegs of the mite, confusing them<sup>17</sup>. When the mites become confused, they fall to the bottom board, and if the beekeeper is using a screened bottom board, the mites cannot climb back up through the screen and into the hive.

To avoid tainting the honey, the best time to use a thymol treatment is in the summer or fall, after the honey flow is completed. Thymol does not penetrate the brood cappings, so it will be most effective when the colony has minimal to no brood. Thymol is not a good treatment to use in the spring because this is when the colony needs to grow, and thymol treatments can temporarily stop the Queen from

**15** Id.

**16** [How to Use Essential Oils for Honey Bee Mite Control](#). BeeKeepClub.

**17** Nganso BT, Mani K, Altman Y, Rafaeli A, Soroker V. [How Crucial is the Functional Pit Organ for the Varroa Mite?](#) *Insects*. 2020; 11(6):395. . (Note: the article states that mites feed on the hemolymph of the bees. It is now known that mites feed primarily on the honey bee fat bodies. *PNAS*. [Varroa Destructor Feeds Primarily on Honey Bee Fat Body Tissue and not Hemolymph](#). Samuel Ramsey, Ronald Ochoa, Gary Bauchan and Denise van Engelsdorp. January 15, 2019.

egg-laying eggs<sup>18</sup>.

Thyme oil also has antifungal properties and may help prevent chalkbrood in the hive. Chalkbrood is a fungus and can be identified in the hive by the hard chalk-like mummies in the cells. The fungus generally starts at the bottom of the larvae and works upward as the fungus rapidly progresses. The fungus color will turn from white to grey to black. When the fungus turns black, it produces spores and is at its most infectious stage<sup>19</sup>. When inspecting the hive, look for uncapped cells, pull the larvae out, and examine the bottom of the larvae to determine whether chalkbrood is present. In addition to thymol's antifungal properties, thymol may work to control chalkbrood through the bees' increased cleaning behavior when exposed to thymol. While the bees are removing thymol from the hive, they may be cleaning out infected cells simultaneously<sup>20</sup>.

Does growing thyme in your garden or near your hive help control varroa mites or other diseases present in the beehive? Based on my research so far, probably not. As stated above, the concentration of thymol in thymol-based treatments is much higher than that found in the actual plant. That being said, thyme plants produce beautiful flowers that bees and other pollinators are attracted to, so there is a benefit to planting thyme in your garden.

**18** Dadant & Sons, Inc. [Use of Apiguard](#). Frequently Asked Questions.

**19** Dadant & Sons, Inc. [Use of Apiguard](#). Frequently Asked Questions.

**20** Id.

### **Do you know? Answers:**

What do you Know Answers: #1 is True, # 2 Sucrose, Glucose, Fructose, # 3 True