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**In This Issue:**

A Message from the Chair ..... 1  
 Preserving Food: Canning for Beginners ..... 2  
 Preserving Food: Dehydration ..... 4  
 Thinking About Cold Storage for On-Farm Preservation ..... 4  
 DIY “Root Cellar” ..... 6  
 Storage Staples ..... 8  
 Preserving... Your Soil!!! ..... 8  
 A Few Useful Guides ..... 10  
 MOFFA Social ..... 11  
 MOFFA News ..... 11

**Greetings—**

Welcome to Organic Connections Autumn 2014—a season in our water wonderland of spectacular beauty coinciding with a bountiful harvest that will sustain us and many others in the months ahead.

A great majority of the articles in this newsletter focus on the preservation of the harvest from personal anecdotal stories and experiences. We offer here possibly a touch of inspiration—realizing it is only a cursory glance at the ingenuity and depth of knowledge regarding the ability to feed ourselves and our community in the northern hemisphere during winters frozen hold. Even with hoop houses, season extension education, foraging and hunting, our reliance on today’s harvest for tomorrow’s sustenance is crucial. The modern world offers, to many persons who have the means, the option to dine on foods from around the planet; yet this is proving to be untenable, impractical and extremely detrimental to life on earth. Our society in particular has become so accustomed to the convenience and the idea of “entitlement to food on demand” that a great



majority of households in this country would be hard pressed be able to eat well in their homes for more than a week.

So a few words on preparedness in an age where the vast majority in the developed world have little direct involvement in the production of their food. One assumes that this message is “preaching to the choir” (apologies for the absurdly overused maxim!)—the 1000 plus subscribers to this newsletter are producing, preserving, sharing and caring. But it is very easy in the frantic pace of our days to become complacent. Not suggesting a “Y2K” end of the world perspective, but we live in a very volatile time and a precarious situation may be just a moment away (i.e. last December’s ice storm, 2014 torrential rain and flooding; further afield yet with effects close to home—Fukushima, wildfires of the western U.S., continuous plumes of atmospheric volcanic ash). Preserving our food may translate someday to preserving our lives. It can be illuminating to reexamine the food in our larders being our mainstay rather than an augmentation to our diets. Equally critical to our attempt to do more is sharing our knowledge with the many that have not had the exposure to canning, freezing, drying, fermenting, etc. The next logical step, beyond the support of our burgeoning local food movement, is food security for our communities. What better way could there be then for us, fortunate in our varying degrees of expertise, to share at every opportune moment the art of food preservation with others. Those privy should feel a desire and need to convey!

MOFFA is engaged and involved in an array of projects and events. Please peruse this entire issue and visit us at [moffa.net](http://moffa.net) for the latest updates.

A sigh of contentment can be heard across the land as the closure of another harvest approaches—enjoy the turn toward a time of repose and reflection. A personal thank you to all for your support and promotion of, and beyond, an organic world!

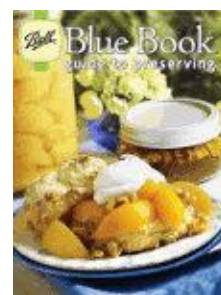
— Enjoy, John H.

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## Preserving Food: Canning for Beginners

Following our first vegetable harvest at our new farm in 2007, it quickly became clear that we would not be able to eat or give away all of our produce. So, as my mother did before me, that meant canning. Freezing would have taken up too much freezer space.

Ball Corporation, the most famous continuously operating canning jar company, had just issued a new “Ball Blue Book Guide to Preserving.” I was armed. I had two water-bath canners and the paraphernalia to go with it. That was my first lesson: the shorter canner would only just barely hold quart jars; it was better suited for pints. The taller canner not only handled quart jars, but also two-quart jars (which I inherited). I bought a new Ball jar lifter because it was hinged better and had rubber-coated tong ends to help prevent slippage as the jars were lifted in and out of the canner.



The Blue Book is very thorough in listing the equipment needed; describing home canning principles, including Growth and Destruction of Microorganisms charts; choosing boiling water vs. steam-pressure canning, preparation of canner, jars and lids, and jar headspace; and

includes many great recipes. Canning recipes must include jar head space and processing time.

"Canning for Beginners" means water-bath canning. This method requires less in the way of initial equipment, but it can only be used for things that are relatively high in acidic content: most fruits, and pickled vegetables. Non-acid fruits and vegetables must be canned at a higher temperature than can be achieved with boiling water; that's where the pressure canner comes in (otherwise known as "Advanced Canning"). Always be sure to consult a reference such as the Ball Blue Book to be sure you're using the right canning method.

The Blue Book, or any reference you consult, will tell you to use firm, ripe, but not over-ripe fruit. But that doesn't mean the fruit has to be perfect—in fact, canning is an excellent way to use less-than-perfect fruit. Just be sure to cut out any bruised, cracked, or otherwise damaged parts.



A few things we have learned: canning is most efficiently done with two people when canning produce like tomatoes or peaches that require skins to be removed: one person to blanch, and one person to peel and stuff jars.

Be sure at least one of you can lift the canner when it is full of water and jars. The clean, empty jars should be heated for at least ten minutes before filling. We fill about half of the canner with hot water, transfer to the stove, and position canner

rack (that holds each jar apart from the others) over canner. Then gradually fill each jar with hot tap water, place in the canner rack, and submerge rack, making sure water covers the rims of the jars by 1" to 2". Bring the water to a boil and simmer, removing a jar at a time to fill. Place a filled jar at a time on suspended canner rack. Carefully lower rack into canner, adjusting water level again.

Lids and rings: So that the lids don't stick together, I place one lid in one ring in a large frying pan filled with water, which can then be layered. Cover the pan and keep at a low simmer. Simmer for at least 10 minutes before use. Lift out the lid/ring combo with coated regular-size tongs.

Head space and clean jar rim is essential to insuring each jar seals. Even with a jar funnel, after the jars are filled, I go over the rim with a clean, damp paper towel before adding the jar lid and ring. I try and see the reflection off the rim to be sure, which means my light must be good. The slightest food particle can create seal failure. Screw the ring over the lid until fingertip tight. Just before submerging the canner rack full of filled jars, I tighten each jar again. Reheat to boiling before setting timer. To help prevent film build-up on jars (our well water!), add ¼ to ½ cup vinegar to the canner when processing jars.

Remove jars from canner and place on a cutting board or strong metal rack 1" to 2" apart. Allow jars to cool in a draft-free room. Success is when you hear each jar "pop" and the center of lid is recessed.

— Julie Studier

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## Preserving Food: Dehydration



We had a surplus of apples and wanted to try something different. I love to munch on potato chips, which seems to add the weight on me. This last year I made Dehydrated Cinnamon Apples. They curbed my sweet tooth along with having something crunchy, lower in calories and healthy. Dehydrated Cinnamon Apples made great holiday gifts in a canning jar!. Give em a try.

### HOW TO MAKE DEHYDRATED CINNAMON APPLES

1. Wash your apples (a bushel works well).
2. Peel and core the apples. If you have an apple peeler gadget, it will peel, core & slice the apples. You can probably find one in your local hardware store at apple harvest time. This gadget saves a lot of time!
3. Chop the slices in half. and place on the dehydrator trays.
4. Apples will oxidize in the dehydrator. Take lemon juice and put into a small sprayer bottle and spray the apple slices. It worked well and did not turn the apples sour. This is faster and easier.
5. Load your dehydrator trays in your dehydrator. I have a 9 tray Excalibur Dehydrator, and my apples took 8 hours.
6. Fill a plastic bag with the apple slices and add enough cinnamon to coat, about 2 T Shake the bag until all the apples are well coated.
7. Place the apples back onto the trays and let them dry for another 5 hours.
8. I place the apples in half gallon canning jars and freeze the apples for two weeks to pasteurize them.

YUM!

— Linda Torony

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## Thinking About Cold Storage for On-Farm Preservation

While the hoophouse has been a great addition the last 10 years to support year-round fruits and vegetables, cold storage (refrigeration) is equally or more important as a season extension option for the small to medium scale diversified farm. At the MSU Student Organic Farm (SOF) we have been very fortunate to have use of two walk in coolers that are essential to the success of our 48 week CSA. In January and February, part of the share is from the hoophouse and part from the cooler.



We have talked about the possibility of building a below ground root cellar at the farm for the past 10 years. Part of the learning process was compiling a presentation about root cellars for farmers. I also built a cold cellar at home about 10 years ago to help with learning the details through practice.

There are still questions about the pros and cons of building below ground verses building above ground given the insulation materials available. Farmers know that for fall vegetable storage some refrigeration is necessary in order to cool a cellar to 40oF when it is needed in late September. If temperatures below 40-45oF are important, refrigeration is necessary. During the summer months, temperatures of 60 to 65 are not uncommon in a below ground cold cellar.



One of our new projects this year is developing the Upper Peninsula Research and Education Center (UPREC) North Farm ([www.msunorthfarm.org/](http://www.msunorthfarm.org/)). We are fortunate to have a large buried cold cellar that is part of the old dairy barn. This summer a great deal of effort was invested in cleaning, repair and insulating vents and appropriate walls. We are looking forward to some initial storage trials with vegetables harvested from the farm. A used walk in cooler was also purchased for the farm to allow comparisons. The use of a Coolbot system is also part of the planning.

At the 2014 MOSES Organic Conference there was a valuable presentation about cold storage and root cellars. Both of the Wisconsin farmer presenters had issues with their cold cellars getting too cold and requiring heating during the extreme cold of last winter. They made a case for the importance of insulation in some situations. The amount of produce being stored is also very important because of the heat given off by the living vegetables.

Last academic year I worked with a team of three students in the Senior Design Class for the Biosystems Engineering major. They took on the challenge of addressing the question of what type and size of cold storage might be recommended for the SOF. They developed a 94 page report with the support of several industry mentors. Based in the information available to them, they concluded that an insulated above ground storage unit might be justified over a below ground unit, depending on the costs of construction. This report provides a good starting point for further discussions.

For more information about cold cellars and to see the 94 page report mentioned above, go to: [www.hrt.msu.edu/john-biernbaum/pg4](http://www.hrt.msu.edu/john-biernbaum/pg4) under Vegetables and Season Extension heading (Number 8).

— John Biernbaum

NOTE: The MSU UPREC North Farm Apprentice Program will be accepting applications for three farmer apprentice positions available for the 2015 and 2016 growing seasons. Details are available at <http://www.msunorthfarm.org/apprentice-farmer-program.html>. Land, equipment, housing, markets and mentoring are available.

## DIY “Root Cellar”

I built my own version of a root cellar following a couple of different articles, advice from Mother Earth News and Hobby Farms Magazine, and of course with improv to suit my needs and access to parts. It is in the basement on the west side, not ideal but much better than in a garage, where temperatures have extreme fluctuations. My root cellar is simple to make and cost about \$60.

If at all possible, line up the unit to a window that can be opened and install your dryer vent to go outside. This allows cool and fresh air exchange. The dryer vent allows escape of the ethylene, which promotes ripening.

### Pieces used

- I purchased a plastic heavy-duty shelving unit and assembled it (approximately \$35). I chose plastic so it would not rust with moisture and could be scrubbed (between seasons I clean with bleach water).
- Foam insulation sheets covered with foil (enough for back, front and sides of cabinet)
- Purchased ¼ thick room paneling that was in the heavily discounted pile (scraped up) from Home Depot. Cost \$3.00/sheet so yes timing was lucky.
- Dryer vent with 18 inch tube
- 1x1 pine wood to secure siding to form the enclosure (cabinet) around the shelves.
- Hinges (to attach two doors in front of unit)
- Latches (to secure two doors to secure a good fit)
- Glue caulk (to secure foam to wood siding-underside)

I am not a carpenter by any stretch of the imagination but also not afraid to pick up a drill, jig saw, caulk gun and x-acto blade to cut the foam. I had a bit of trouble with the doors meeting so I drilled some 1x1/4 to make a more secure fit in the front. My goal was to maintain the coolest temperature possible.

My goal was to cover the shelving unit so I could close the doors, use the shelves from the shelving unit, and have the cabinet tight enough to keep out mice. So I made sure the wood goes to the floor since I didn't install a bottom as I wanted maximum ventilation for the kept produce. I cut a hole large enough to fit the dryer vent then caulked around the tube to keep out mice and warm air. If at all possible, line up the unit to a window that can be opened and install your dryer vent to go outside. This allows cool and fresh air exchange. The dryer vent also allows escape of the ethylene, which promotes ripening.

For conditions needed for storage of different fruit and vegetables visit these sites:

<http://www.hrt.msu.edu/assets/PagePDFs/john-biernbaum/Root-Cellar-Handout-Diagram-6pgs.pdf>

<http://www.motherearthnews.com/real-food/stocking-the-root-cellar-zmaz90sozshe.aspx#axzz3FTokNMwX>

<http://www.uaf.edu/files/ces/publications-db/catalog/anr/HGA-00331.pdf>

<http://www.hobbyfarms.com/food-and-kitchen/how-to-store-food-in-root-cellar.aspx>



The doors cut into two on one side is not significant, except that it does allow me to only open a smaller portion of the “cellar” at any one time. I used spin door closures and hooks and eyes, but you can use whatever you have lying around to keep the doors securely closed.



Note the insulation foam inside the cabinet, which keeps out both excess cold and heat. I cut a hole in the back to allow the dryer vent to exit. Behind the unit is a window. I closed it off with a piece of wood with a hole for the vent, then insulated it with spray foam.

If you need more moisture put in a large pan (I use an aluminum foil roasting pan (recycled) on the bottom.)

I store my potatoes, onions and garlic from my garden and any winter squash and apples I purchase. Before placing the root veggies I wipe them clean (could use a peroxide wipe to kill surface bacteria which can cause disease). I then cure them in the basement on a peg board on bricks (to promote air circulation). I place the vegetables on the board without touching each other for about two weeks. I sort out any soft or broken ones and use those right away. I then store in the cabinet for storage in a plastic bin for easy access. I place them in the bin in a single layer or at most two layers.

— Vicki Morrone

## Storage Staples

Grains are one of the easiest types of foods to store, both in the modern world and traditionally speaking. Grains such as hard red wheat (the basis for bread flour), soft white winter wheat (pastry flour), spelt, and even corn will store for quite a long while if packaged correctly and kept dry.

One way to work with stored grain berries is to purchase a grain grinder. For example, Kitchen Aid mixers have a grinding attachment that can be purchased to use with their mixers.



However, when grinding wheat from whole grains, the resulting flour is called “graham flour” and it can be difficult to work with in making many modern (meaning post 1800) recipes—it is very heavy and arguably doesn’t rise well. What is called “whole wheat” flour actually has some of the germ and bran sifted out to provide a lighter, workable flour.

A great way to utilize stored grain berries is to grind them freshly and mix them with your favorite flour. The ratio will depend on the recipe, but perhaps start with 2 parts of your regular flour and 1 part graham flour and see how that works.

Another way to work with grains is simply to purchase flour from your local, organic flourmill and store it. My family and I have worked with 20-pound sacks at a time; it works best to store the ground flour in the freezer because once the grain is cracked, the shelf life begins to run on it. As a whole grain, it can be good for years if properly stored.

My family’s favorite place to work with is Westwind Milling out of Argente, Michigan (a longtime member of MOFFA). They have many types of flours available in many grinds and mixes. My personal favorite is the stone ground all-purpose organic—a mix between red wheat and white wheat that can be used for both breads and pastries.

To turn the all-purpose into hearty whole wheat, I can add some fresh ground wheat (graham flour) using my Kitchen Aid and some wheat berries from my closet or the co-op.

Have fun cooking and baking this winter!

— Chris Bardenhagen

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## Preserving ... Your Soil !!!

Given that my very first attempt to preserve grape jam included a scorched batch, I decided your harvest would be better served by focusing on preserving your soil in this newsletter!

Fall is the time for harvest, canning, preserving and storing your bounty. Unfortunately many people spend their time in preservation and neglect to invest in the soil that produced the bounty. For the most part, the investment doesn’t require money...just some time and effort.



The fall is a great time to prepare your soil for the upcoming winter and those efforts will enhance growing conditions for the next growing season. Doing a soil test is the best place to start when considering whether your soil needs any added minerals. In spite of those results there are some basic concepts that will promote healthy soils for next year's crops. A few concepts to focus on prior to the onset of winter include: residue management, mulching, cover crops, and microbial life.

Residue management is the concept of putting crop residues (stalks, vines, husks, fodder, leaves etc.) back into the soil. Healthy soil complete with millions and millions of decomposing microbes will change these residues, turning them into organic matter and eventually into humus. Putting these residues in a compost bin where all weed seeds and pathogens are destroyed would be ideal; however most people don't spend the energy on monitoring temperature and moisture and "turning" a compost bin or pile to assure appropriate aerobic break down. Given this situation, putting residues directly back into the soil is a viable option. Mowing, or light tillage, to break up these residues will ensure breakdown by spring. Similar to the composting process, the microbes use the stalks, leaves and fodder for energy and turn them into organic matter. The mineral content of the residues can then be reused by the next and future year's crops. Applying liquid fish and molasses feeds the microbes and can help jumpstart the process.



Mulching your garden, lawn and landscapes with leaves provides similar benefits as managing your residue, but also aids in weed suppression for the next growing season. Instead of raking, blowing, and carrying those leaves to your compost pile use them on top of your beds. Laying down newspaper or cardboard on top of the growing areas, and then covering them with leaves is a great way to keep the weed population to a minimum. Most of the newspaper/cardboard and many of the leaves will be broken down by spring. What hasn't broken down can be planted directly into, or lightly tilled into the existing soil. For lawns and turf where the soil has been managed to promote microbial life, simply mowing those leaves and mulching them right in the turf will also turn them into organic matter and feed the turf. They too will be gone by spring!

Planting fall cover crops is a dynamic way to attract and promote microbial life, increase fertility, and prevent other noxious weeds from germinating this fall. The benefits of a diverse cover crop include:

- Increases fertility including Nitrogen
- Increases organic matter
- Increases earthworms and beneficial microorganisms
- Stabilizes soil and helps prevent erosion
- Brings deep-rooted minerals to the surface
- Improves water, root and air penetration of soil
- Increases the soil's moisture-holding capacity

- Breaks up subsoil and creates tilth



Cover crop species include: legumes, clovers, vetch, comfrey, tillage radishes, buckwheat, rye, peas and many others. The more diverse the cover crop the more diverse the benefits. In the spring, lightly tilling these cover crops into the soil will provide “green manure” benefits throughout the growing season.

Promoting microbial life in your soil will enhance each of the three aforementioned concepts, and conversely, those three concepts will promote microbial life in your soil. There is a synergistic effect between microbes and plants. Focusing on microbial life includes providing the energy (food) and habitat (soil structure) necessary for the above concepts to work. In sustainable/organic systems these beneficial microbes are necessary for solubilizing minerals, making them available to

the plant, and protecting the plant from disease pressure. Adding quality compost or vermi- (worm) compost, compost tea (or extracts) will give your soil a good inoculation of beneficial microbes. Building that population in the fall will provide numerous benefits come spring time. In addition, there are many “microbes” or “minerals and microbes” products you can purchase to apply to your soils. Regardless of what method you choose, put some life into your soil!

Just as using heat, sugar, salt, pectin and vinegar are required for canning, preserving and storage of your harvest; using crop residues, mulch, compost, cover crops and microbes are necessary to prepare or “preserve” your soil to benefit next year’s growing season, as well as years thereafter.

— Dane Terrill

## A Few Useful Guides

MOFFA thinks enough of these books to sell them at our conference booth ... they'll be at Bioneers in Detroit October 24-26, GLEXPO in Grand Rapids December 9-12, and the Northern Michigan Small Farm Conference January 24 in Acme, MI. (If you'd like to volunteer to help out at the booth at any of these conferences, shoot us an email!)

[Root Cellaring](#) – how to build 'em, what varieties store best ... "the only book you'll ever need on root cellaring."

[Beginner's Guide To Preserving Food At Home](#) and [Big Book of Preserving the Harvest](#) – canning and freezing are the stars in both these books, but they also cover drying and pickling. When you're ready to try something a little farther off the beaten path, [Preserving Food Without Freezing or Canning: Traditional Techniques Using Salt, Oil, Sugar, Alcohol, Vinegar, Drying, Cold Storage, and Lactic Fermentation](#) might be up your alley.

[Preserving Wild Foods](#) covers curing, canning, smoking, and pickling a wide range of wild ingredients foraged from the sea, fields, forests, and fresh water.

Fermentation is an ancient practice, and both [Art of Fermentation: An In-Depth Exploration of Essential Concepts and Processes from Around the World](#) and [Wild Fermentation: The Flavor, Nutrition, and Craft of Live-Culture Foods](#) cover the topic in depth. And finally, don't forget about next year ... [Saving Seeds](#) will show you how to save money, use seeds from plants that have thrived in your particular growing conditions, preserve your favorite strains of vegetables and flowers, and share seeds with family, friends, and neighbors.

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## MOFFA Social

Please join us for a fun filled MOFFA social at the Zilke farm in Milan Mi (west of Ann Arbor). November 1st from 3:00 to 5:30 we will be hosted by Tom and Vicki for a tour of their farm, hoop house and gardens, and equipment shed. The Zilkes are in the process of transitioning to organic so would love to hear your thoughts too. Following the tour we will have a potluck and meet-and-greet so please bring a dish to share. See the [flyer](#) for details, or go ahead and reserve your space at [moffa.net/farmtour.html](http://moffa.net/farmtour.html). Those who attend will have the opportunity to renew their membership or join MOFFA for the first time at \$5 off the regular membership amount.

— Vicki Morrone

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## MOFFA News

**Organic Intensives** – We are actively seeking individuals to present and help with planning our first-ever intensive one-day learning event, scheduled for Thursday, March 12, 2015. The event will consist of four full-day workshops:

- Field and High Tunnel Cut Flowers for Farm Profit and Diversification
- Building Vegetable Production and a Successful Diverse Seasonal Rotation for Growing Local Markets
- The Organic System Plan: Integrated Organic Soils and Pest Management
- Edible Landscaping and Permaculture Principles for Home Gardens and Small Farms

If you are expert in any of these topics, or would like to suggest someone who is, please get in touch with us at [moffaorganic@gmail.com](mailto:moffaorganic@gmail.com).

We are discussing various options for socializing on Thursday evening, since we expect a number of people will want to stay overnight in order to attend the Organic Reporting Session which will be held on March 13th. Your suggestions for this activity are also welcomed.

**Hoophouse Gala** – MOFFA supports the Organic Farmer Training Program at the Student Organic Farm at MSU. The SOF holds an annual event they call the Hoophouse Gala to raise money for scholarships. Much of the food for the event was raised by the students, and the menu is amazing. This year's Gala is Sunday, October 12, but we understand there's still time

to buy a ticket for the event—contact Kim Garrison (517-432-1966 or [garris31@msu.edu](mailto:garris31@msu.edu)). More details at <http://hoophousegala.rhs.msu.edu/>.

**Membership** – MOFFA gratefully welcomed its second life member this summer, but there are still many, many people who have been members in recent years but have not renewed for 2014. MOFFA relies upon the support of its members to continue to provide advocacy and education about Michigan's sustainable agriculture to a wider audience. We'll be sending an email, and a paper follow-up mailing to those recent members, later this month. But meanwhile, you can join online at [www.moffa.net/membership.html](http://www.moffa.net/membership.html) via PayPal, download a copy of the [membership form](#) and mail it to us with your check, or give us a call at 248-262-6826 and we'll send you a copy.

**Upcoming Newsletters** – Our final newsletter of the year will focus on Soil Health. We encourage our readership to contribute articles to the newsletter. We're always looking for photos to illustrate the articles too. And we're soliciting ideas for newsletter themes for 2015. If you're interested in contributing, please contact Julia Christianson at [moffaorganic@gmail.com](mailto:moffaorganic@gmail.com).

**Are You an Artist?** MOFFA desperately needs someone to redesign the trifold display board that we use for exhibiting at conferences and other events. If you'd like to volunteer to help with this, please email us – [moffaorganic@gmail.com](mailto:moffaorganic@gmail.com).

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Keep up with MOFFA on our website: [www.moffa.net](http://www.moffa.net), or email us at [moffaorganic@gmail.com](mailto:moffaorganic@gmail.com).

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