

*A month-by-month guide to planning, growing, and harvesting a lush garden in the challenging conditions of the Intermountain West.*

## **A Monthly Guide to Growing a Sensational Garden in Northern New Mexico and the Rocky Mountains**

By Nan Fischer

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**A MONTHLY GUIDE  
TO GROWING  
A SENSATIONAL GARDEN IN  
NORTHERN NEW MEXICO  
AND THE  
ROCKY MOUNTAINS**

**NAN FISCHER**

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## Introduction

In 1988, I moved to semi-arid Taos, New Mexico, from temperate northern New England where the soil was acidic and the air was humid. An inch of rain fell every week in summer, and winters provided several feet of snow cover. I safely planted tomatoes on May 10 in soil I barely had to amend, and I could harvest them into October.

Gardening conditions in the high desert were the opposite of what I'd known. Soil here is alkaline, the air is dry, summer rains come in daily cloud bursts, and the warm southern sun melts huge swaths of snow. The wind blows for two months in spring at 30 miles per hour, and frost can hit in late June and early September.

Obviously, I had to forget everything I knew about gardening and start over.

I've since become a local gardening expert, and I advise newcomers to the Mountain West to do what I had to do.

And that's what this book is about. Forget everything you know about gardening and start over with *A Monthly Guide to Growing a Sensational Garden in Northern New Mexico and the Rocky Mountains*.

After more than 30 years, I can say I've adapted. I water my trees in winter, acidify my soil with compost, and stay prepared for frost all summer.

As if our growing conditions weren't challenging enough, now climate change is making it even more frustrating to garden successfully. The weather isn't predictable and weather events are extreme. We see unfamiliar insects and diseases that are normal in a warmer climate. At the same time, we experience weather more like that of a colder growing zone. We need to broaden our knowledge to be prepared to garden in warmer *and* colder conditions.

For over 10 years, I've written gardening how-to articles, blog posts, and Facebook posts. At first, they were very general for U.S. Department of Agriculture Zone 5, which is also Taos' zone and the one I'm most familiar with, but more recently I've written specifically about gardening in Taos. Last year, my friend Leslie—who'd just moved here from Indiana—said she'd appreciate having local gardening information in one resource. Over lunch at her house, she encouraged me to put this book together. It will be helpful for gardeners not only in northern New Mexico, but also throughout the Intermountain West.

### *How to use this book*

Each chapter is a month of the year with a task list followed by two, sometimes three, topics relevant to the tasks. January, the first chapter, describes how to plan the growing season. Subsequent chapters guide you through the rest of the year. Finally, the November and December chapter encourages you to settle in for winter, assess your work, and plan for the upcoming year.



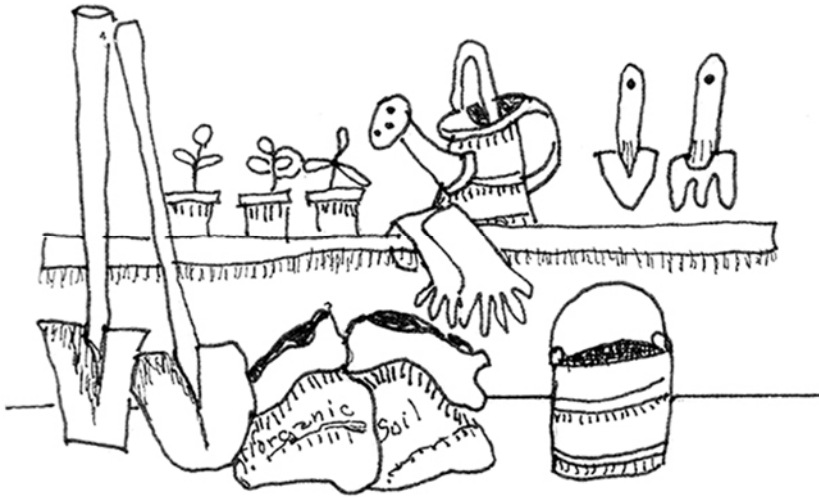
I suggest reading or at least skimming the whole book first, so you know what's in it. The Table of Contents is a quick-glance summary. Use it as you would an index.

This book is a guideline. There's no one way to garden in a place with many microclimates. Across Taos County alone, there are drastic variations in high and low temperatures, precipitation, and wind—things that determine what we do in the garden every day. You may need to refer to the months on either side of the current one. If you live in a warm spot in May, maybe you'll be ready for June's tasks. If you're in a cool spot in May, you may need to work on April's tasks. This is also helpful for gardening through climate chaos.

*A Monthly Guide to Growing a Sensational Garden in Northern New Mexico and the Rocky Mountains* is not exhaustive. I can't cover every task in detail. I'm assuming gardeners have other resources for more comprehensive information. Talking to local gardeners is the best way to learn. Building community provides support, especially with the unpredictability of climate change. We've all been stymied by the weather the last few summers, and it's helpful to hear creative solutions from other gardeners.

As for climate change, my best piece of advice is to be flexible as you learn to live with it. Be informed and ready to apply your gardening knowledge when you least expect to. Prepare for the worst scenario. Creating climate resilience means jumping over one hurdle at a time.

Come with me now on a journey to create a sensational garden. Always garden organically for your good health and that of the planet. Read on to discover the basics of organic gardening and details about adapting to climate change.



*A growing season of hope lies ahead!*

## **The Basics of Organic Gardening**

In recent years, many people have become more aware of how their food is produced. They realize pesticides have serious health and environmental price tags, and that genetically modified organisms (GMOs) are unhealthy and unlabeled. Because of this, organic gardening is on the rise.

Take control of your food source by growing your own food organically. You will also improve and maintain your health and be kind to the planet.

What is organic gardening, and where do you begin?

It's all in the soil.

The key to a lush organic garden is healthy soil. Whether you're growing food or ornamentals, good soil will make a difference in the overall health of the plants, production and yield, and increased disease and pest resistance.

Good friable soil is full of nutrients, microorganisms, and earthworms. It retains water and nutrients, while allowing air circulation and good drainage, which are vital to plant growth. Good soil creates the optimal environment for organisms to thrive so they can effectively break down and aerate the soil.

How do you get healthy soil? Look to the natural cycle of life, death, and nourishment in the forest. Leaf litter is simply decomposing organic matter. The trees and shrubs shed leaves that break down, returning the nutrients to the parent plants.

## **Compost**

Leaf litter is compost that will make your gardens healthy and beautiful. It has all the micro- and macronutrients your plants need, and it adds bacteria and fungi that help plants take up those nutrients.

Make compost at home or buy it from a reputable nursery. It comes in bulk or bags, and can be made of animal manure (sheep, chicken, goat, llama, horse) or plant byproducts (alfalfa, mushrooms, cotton burrs). Some cities now have municipal composting operations. Check with your town and take part.

Adding compost to your gardens in spring and fall will build up the soil and replenish the nutrients that get used up each growing season. Nutrients are released slowly, and plants take up what they need, so you can't add too much compost.

For more details on composting, see the March section.

What if you have poor soil?

Not everyone has great soil to start with. The high desert dirt in New Mexico is slippery when wet and rock hard when dry. Consider we make adobe bricks out of it! We do a lot of soil amending here, and that takes time and patience. What should you do in the meantime?

A soil test will give you a nutrient profile, a pH reading, and recommendations for amendments for the specific crop you are

growing (vegetables, fruits, flowers). Your county extension office can help you with this.

Keep building up the fertility of the soil with compost and natural mulches such as straw or shredded leaves. Use organic fertilizers during the growing season while you build up your soil fertility. There is a plethora of organic fertilizer brands at good nurseries and garden centers. Some are general and others are for specific plants. Talk to someone knowledgeable to get what's appropriate for your needs. There are more details about organic fertilizers in the July section.

### *Organic pest control*

Another added benefit of healthy soil is fewer pests and diseases that love to attack stressed plants. If your soil is providing a good balance of proper nutrients, water, and air, your healthy plants will be able to withstand seasonal onslaughts. Think of healthy soil as preventive medicine.

The first step in organic pest control is to see what insect you are dealing with and how bad the problem is. Are there just a few bugs or a killing infestation? Are they larvae or adults? Do they fly or crawl? What part of the plant do they eat?

Although Integrated Pest Management (IPM) uses chemical pesticides as a last resort, it stresses knowing the life cycle of pests to accurately target them. A caterpillar (larva) may eat some leaves, but the adult (moth) may not be an economic pest. You need to know the difference.

IPM also considers cultural practices, such as cleaning up debris in the fall to remove overwintering insects and staggering planting times. There are a lot of effective ways of dealing with pests before there's a need for chemical pesticides. You can buy organic pesticides, such as *Bacillus thuringiensis* (Bt), spinosad, and diatomaceous earth, but you still need to know who the enemy is before using them. You also need to know which of those treatments works on which insects. There is no blanket solution.

You can use homemade remedies as well. Soapy water, cayenne, garlic, corn meal, and flour are a few of the ingredients in various recipes. Again, it depends on what you are trying to eliminate. Beware that some of these things may kill beneficial insects, too! Do your homework and ask a lot of questions before embarking on a killing spree.

Invite beneficial insects to your yard to keep pest problems to a minimum. Ladybugs and praying mantises dine on a wide variety of insects. To attract them, plant species they need for nectar and habitat.

Finally, allow a little insect damage. If it's not an infestation that is devouring your plants, leave them be. Let go of your idea of perfection. Insects belong in the garden as much as plants do, and they take care of each other.

Stressed plants talk to neighboring plants that come to the rescue with nutrients sent through their root systems. Also, a plant under attack by a predator sends out signals for others to ramp up their defense systems to protect themselves.

Read more about how plants talk to and take care of each other in the June section.

### *Organic weeding*

The best way to deal with weeds is prevention. It's easy to get rid of them while they're small. If they are more mature, compost them unless they've gone to seed. Then they belong in the trash.

Pull weeds after a rain, or hoe when it's dry for the best results. Always use the right tool for the job.

Do not use herbicides! Use elbow grease instead.

See the July section for more weeding methods.

Don't be overwhelmed. It takes time to adjust to growing organically. Nature is not a fast process. Be patient and learn to work with natural cycles. Keep building up your soil for best results.

If you need external help, it's always available. The best resource, aside from local gardeners, is *Rodale's Encyclopedia of Organic Gardening*. This has been my standby for decades, but there are other books out there, too. You can't have too much information!



## **Adapting to Climate Change in the Garden**

There's no better way to plan your garden season than looking at the previous one. One year, the last frost was on June 8, and our first frost was September 8 accompanied by snow. That's a pretty short growing season! This is not the new normal, because some years are warmer, extending the growing season on each end by weeks. Either way, the weather is more and more unpredictable, and gardeners are increasingly frustrated.

Over the last five years, I've seen summer days and nights get warmer. The overnight lows used to be 40°–45°, and daytime temperatures were 80°, 85° being a heat wave. Now it is consistently 50°–55° at night, and 85°–90° is a typical daytime temperature.

Winds blow strong in March and April. Winters are now warmer and drier, giving us stronger winds late into the spring, even into June when we are planting our gardens.

Monsoon season used to start in late June with daily afternoon rains drenching the landscape and dropping the temperature. Monsoons are now spotty with less rain and hotter afternoons. Less snowpack means less ditchwater, forcing us to tap into the aquifers with our wells.

These weather patterns used to be reliable with little variation. Now the weather is extreme in either direction: hotter, colder, wetter, drier, or windier, and not when you expect it.



Gardening is more challenging now because there aren't stable weather patterns anymore. Climate chaos equals garden chaos.

*Reduce carbon dioxide emissions and sequester carbon*

Find alternatives to tools and equipment that are powered by fossil fuels or electricity, which are produced using coal or natural gas. Don't think an electric rototiller, hedge clipper, or chain saw are cleaner than gas-powered tools.

Sturdy, high-quality hand tools can do a lot of hard work. Pull weeds by hand and work your garden with a broadfork. Use no-till or low-till methods so as not to disturb the soil, which will release stored carbon. Read about low impact weeding methods in the June section.

Garden organically. Don't use synthetic fertilizers and pesticides. The factories where they are manufactured create air pollution. You also want to reduce transportation emissions.

Healthy soil also captures and stores carbon. Build up your soil with compost to create a resilient garden needing fewer pesticides and less fertilizer. Use plant-based fertilizers if necessary. Practice IPM, which relies on observation and knowledge of the life cycles of pests to deal with them effectively.

Plants pull carbon dioxide (CO<sub>2</sub>) from the atmosphere to make sugars to aid their growth. The CO<sub>2</sub> is then stored in the plants and the soil. Trees and perennials provide food and shade but also double as carbon sinks. Fruit trees, nut trees, asparagus,

and berries, for example, pull and hold onto more CO<sub>2</sub> than annual plants can. Compost not only improves our soil, but also stores carbon, and increases the carbon-holding properties of our gardens and yards. Learn how to make compost in the March section.

### *Sustainable gardening as adaptation*

So how do you successfully garden with so much unpredictability? It takes flexibility, observation, a willingness to learn new gardening methods, and putting that new knowledge into action right away. Be prepared to not be prepared. Adaptation is the new normal for gardeners.

Some sustainable ways to adapt are to understand the local environment and other growing zones around you, create diversity, grow perennial crops, collect and manage water, and use covered growing systems for protection.

### *Study your environment*

I'm always surprised at how many gardeners are unaware of their surroundings, as though their gardens are separate from their yards and wild spaces. Although agriculture is the opposite of a natural ecosystem, they are entirely connected.

Learn to be hyperaware of your environment. Study the weather, birds, pollinators, and native plants. Keep a garden journal. With annual records and knowledge of our "normal" weather patterns, you'll easily be able to see the differences in climate patterns after keeping records for a few years. If you

record your problems and solutions, you'll have a reference guide specific to your yard.

Be willing to experiment. Explore the growing zones on either side of your own. Climate change means warming temperatures and unexpected cold, so try plants that do well in warmer and colder locales. Plant earlier and later and use short- and long-season varieties. Accurate record keeping with photos and diagrams will show you what works from year to year.

Be flexible enough to deal with a surprise hot, cold, wet, or dry season. Acquaint yourself with many growing methods, so when you need that information, you know where to find it. Be prepared for the unexpected.

### *Plant for broad diversity*

Diversity matters more now than ever. With changing seasons, birds and pollinators appear in spring when the flowers they need aren't blooming. Insects' life cycles change, too, and they need food and shelter at unusual times. Planting as many species as possible with varying flowering times throughout the season will ensure food for pollinators and wildlife whenever they appear.

Diversity also provides resilience against pest infestations and drought. Be prepared for unexpected changes by growing a wide variety of plants. Grow in a milpa—a Mesoamerican way of companion planting for diversity and symbiosis; let the various plants feed and support each other.

Again, the garden is not separate from the wild environment. Aside from creating an edible landscape, planting native ornamentals in wild spaces will attract, house, and feed a wide variety of pollinators and wildlife. Read how you can support pollinators in the May section.

### *Grow perennial crops*

Because trees and perennials grow year after year, they withstand weather extremes better, due to their deep, extensive root systems. They also need less maintenance throughout the season—a plus for gardeners with busy schedules. Plant fruit and nut trees, berries, rhubarb, asparagus, horseradish, and artichokes along with culinary and medicinal herbs.

Perennial cover crops can be used in place of grass lawns to cover unused areas of your yard, or in pathways. They create diversity, pollinator food and habitat, and reduce water runoff.

### *Manage water*

Drought is more prevalent and extreme than ever, so capturing as much water as possible is important. Build or buy a cistern, either above or below ground, and collect rainwater in it through a gutter system. Connect multiples for overflow. Install the cisterns uphill from the garden for gravity flow. If that's not possible, use a small pump.

Dig shallow swales in the yard to divert water. Direct it to a holding pond or a system of shallow ditches in the garden. Put high-water-need plants in the swales and ditches to naturally

water them and cut back on collected water or well water. Find varieties that grow well in standing water for flood-prone areas.

Drip irrigation and mulch are simple, inexpensive, and effective ways to use minimal water and reduce evaporation.

Recycle greywater from your shower and washing machine to water non-food and shade trees outside.

### *Grow under cover*

Greenhouses, high tunnels, low tunnels, and cold frames protect plants from extreme weather events, such as heavy rain, hail, wind, or snow. They also extend the season in spring and fall by providing extra warmth and can be used for year-round growing with a little extra planning. Read about season extenders and covered growing in the March section.

Passive solar greenhouses and underground walipinis use thermal mass for heat for extended growing seasons. Rocket mass heaters, which efficiently burn tiny amounts of wood, can be used instead of gas or electricity.

Structures covered in shade cloth will protect from intense sun, extreme heat, and drought.

### *Shop locally*

Further reduce CO<sub>2</sub> emissions by shopping locally for plants and seeds, which cuts transportation emissions. Knowing the

supply chain where we shop can also aid in decision making when shopping.

Starting plants from seed will cut back even farther. There is almost no way to avoid environmental shipping costs, but they can be significantly reduced.

### *Grow and save your own seed*

By saving seed, we can eliminate the source of many emissions. At the same time, we can grow plants that are adaptable to “normal” local conditions. You can breed plants hardy enough to withstand wide temperature swings, unpredictable weather events, and new pests and diseases introduced by climate change.

Seed saving builds food security. One seed grows hundreds of others, so a healthy, homegrown seed collection secures a reliable source of food.

Seed sharing is important, too, through seed libraries, seed exchanges, seed swaps, and even small gatherings among friends. Learn how to plan your garden for seed saving in the January section.

### *Create community*

Being in contact with other local gardeners offers support and ideas for coping with disasters in the garden. Online groups and in-person gatherings alleviate the sense of isolation and stress when things are difficult. Seed swaps and plant sales are

excellent places for like-minded people to share their experiences and ideas, get advice, and share plants and seeds that are locally adapted.

### *Secure your food supply*

Gardening through climate change is not just about growing food. It's also about creating buffers from large-scale crop failures. When there are widespread frosts or floods in Florida, California, or the Midwest, prices go up. If a gardener has a pantry, freezer, or root cellar full of their garden bounty, they will be protected from unexpected price increases caused by extreme weather events elsewhere.

Learn to put up food. Maybe you already freeze leftovers. Think bigger and start freezing whole meals. Learn to can from a reputable source, such as a book or class. Maybe someone in the community you are building can show you how. Gardening friends are invaluable!

After you've learned various methods to store food, you can plan your garden to accommodate your needs. Your self-sufficiency provides food security while cutting down on emissions necessary to truck in food to your supermarket and for you to go to the store to buy it.

The same logic goes for seed saving. Learn it from a reliable source to protect yourself from food scarcities.

### ***Reach farther***

The only control we have is in our own backyards, but it's important to also contact local, state, and federal legislators to act to mitigate climate change. Vote for those who are not in denial and who are seeking solutions.

Get involved by joining or creating gardening groups, building gardens in schoolyards, and organizing seed swaps to bring awareness to the little things we can do. No act is too small, despite how huge and overwhelming the problem is.

### ***Be flexible***

Gardening in climate change is not about technique. It's about flexibility and adaptation. You must be ready to suddenly change course when confronted with unfamiliar problems, be they pest infestations, hail, late frosts, early snow, or lack of water. Arm yourself with information and be ready to implement anything at any time. You might be exhausted and exasperated come fall, but you will have been successful.

(Courtesy of the *Taos News*)





MARCH





March is a transitional month. The saying “in like a lion and out like a lamb” doesn’t apply to the high desert, but it does show how changeable the weather is this time of year.

Spring winds may start up this month. They can blow any time from now to June but are most prominent in April and May. They are caused by the polar jet stream moving north and the sun warming the land as it shines from higher in the sky. Warm air rises and mixes with shifting winds aloft, which cause strong winds at the earth’s surface.

The wind is good for melting the last of the snow and drying out our gardens, but ironically, it happens just as we start planting. One of the hardest parts about gardening in the Rocky Mountains is making sure plants from starts or seed are protected from the wind and watered well enough to get firmly established. If we can get through the windy season, our gardens survive and do well.

That said, climate change has been handing us 40- to 60-mile-per-hour spring winds the last few years. No plant wants to leave a safe climate-controlled greenhouse to be planted in a field in that kind of weather! Transplanting in these conditions causes setbacks or death for plants and frustration for gardeners.

My solution has been to hold off planting until the wind subsides to a normal speed, but even that has its drawbacks. Plants held in pots too long are stressed and take longer to get established. It may also be too warm for spring plants by then, and they will suffer from the heat. Maybe fences or other

barriers would help. It's such a new phenomenon, I haven't seen any successful solutions yet. We're all still figuring it out.

Most of this month's chores are weather dependent. We can get major snowstorms and strings of warm sunny days, so you need to be flexible to get it done in time. Watch the weather forecasts, plan accordingly, and be patient.

### **March Task List**

Finish pruning your fruit trees. Read the February chapter for details on how to correctly prune.

Begin cleaning up the driest parts of the yard. I usually have perennials and bulbs popping up on the south side of my house while those on the north side are still covered in snow drifts. The south side gets my attention in March.

To avoid disturbing overwintering insects, wait until there have been a few consecutive days above 50° to clean up. Bugs, good and bad, will wake up with warmer and longer days but may still be in their winter homes.

If you do cut back stems early, loosely place them on top of a compost pile or lay them out in a wild part of your yard so the insects can safely finish their waking-up process.

Carefully rake away last year's debris or clean it out with gloved hands. You will probably find new growth of bulbs, perennials, and reseeding annuals that you don't want to disturb. Crocuses may even be flowering once you expose them!

Remove fallen leaves and cut back dead flower stalks and last year's growth. Use sharp clippers, but good scissors might work better on soggy leaves and stems. Cut ornamental grasses about 10 inches from the ground.

Aerate the soil a bit by scratching up the top with a hand cultivator. Leave the surface bare to warm it up, dry it out, and allow ground-nesting bees to wake up and exit.

If your compost is thawed out, turn it with a flat-tined pitchfork. If it smells like rotting food, it needs some air. It also has too much green material (nitrogen). This is common after a winter of just adding kitchen scraps. Incorporate straw, twigs, or cardboard to balance out the carbon/nitrogen ratio. After the task list, you'll find detailed information about making compost.

If you have a ditch on your property clean it before the main ditch is cleaned, which will probably be in April. Weed whack the vegetation and rake out what you can. It might still be frozen or muddy. Fall cleaning of your ditch keeps spring work to a minimum. It's warmer then, too.

Before adding amendments to your gardens or building a new bed, perform a soil test to determine what macro- and micronutrients your soil has and what it needs for the specific crop. Your test results will also show pH, soil texture, and organic matter content.

For a soil test in small flower or vegetable beds, get a sample about 6 inches deep from five or six areas. For a large field, get

15 samples. Mix your samples together in a large container, let it dry out, mix it again, and send two cups to a soil testing lab. They will mail amendment recommendations. Contact your county extension office for more information.

### *Seeds to start in March*

Mid-month indoors, start cool weather crops such as lettuce, kale, Asian greens, Swiss chard, spinach, broccoli, cabbage, and Brussels sprouts. These can be transplanted outside at the end of April.

Outside, sprinkle wildflower seed mixes and annual poppy seeds where there is still snow on the ground or while the soil is quite damp. The melting snow helps push the seed into the soil and water it in at the same time. If the soil dries out, give it a drink until you see germination.

In warmer areas, people plant peas mid-month. My soil is too cold for that. Seed rots before it sprouts. A soil thermometer will tell you if your soil is warm enough for seed germination.

Do not be too eager to dig in the gardens. If the soil is too wet, you can ruin the structure and its ability to absorb nutrients, air, and water. A simple test is to take a small handful and make a ball of it in your fist. When you open your hand, good friable soil will fall apart. If it sticks together, it's too wet to work. Like I said earlier, be patient!

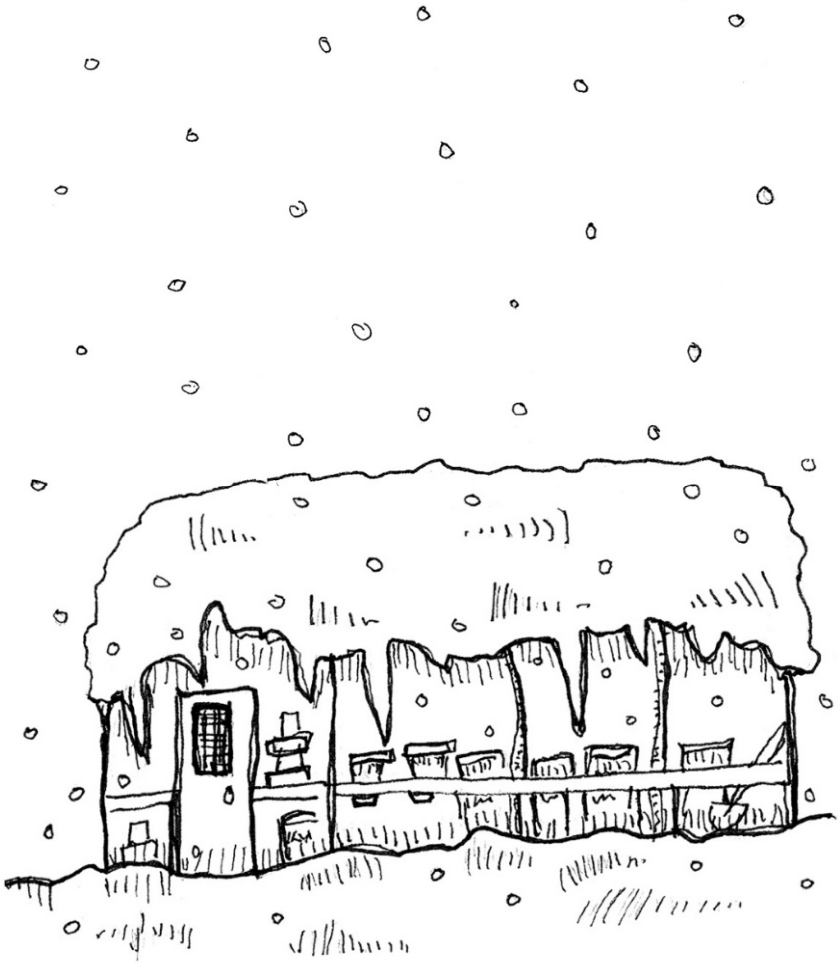
While you wait for your soil to dry out enough for planting, there is plenty to do. Tighten up your fences, trellises, and

arbors. Make sure your cold frame and other season extenders are clean and ready. Detailed information about season extenders follows the task list.

Enjoy the first spring flowering bulbs that will certainly appear before April!

(Courtesy of the *Taos News*)





*Snow on a greenhouse is not an unusual scene in March.*



## **Transforming Dirt into Soil**

People frequently ask me about the difference between dirt and soil. We use these words interchangeably, but they are not the same. When we say we are going into the garden to dig in the dirt, we are mistaken. We will dig in the soil. Only if the bed is brand new and has not been prepped in any way will we be digging in the dirt.

Likewise, we grow plants in soil, but when we come inside, we wash the dirt off our hands and clothes. The first has a positive connotation supporting plant life while the latter is an annoyance to be washed away. Yet they are the same thing!

According to the Soil Science Society of America, dirt is “displaced soil,” which would describe cleaning up after gardening. On a larger scale, think of the landslides in the canyons after a snowy winter or heavy summer rain.

Soil supports life and has history. It is layer upon layer of decaying organic matter, which provides nutrients to plants and animals. The layers are the history of that specific place over time. When it’s sitting across a road, however, it becomes dirt with no history and no life. The process of soil creation and history making needs to start again once the dirt is cleared away.

Dirt is basically dead. There are no living organisms in it to support life. It may still contain rocks—its parent material. Its lack of organic matter, structure, and texture makes it susceptible to erosion. The word *dirt* has its origins in Middle

English, when *drit* was a word for “excrement” or “any foul or filthy substance.”

The word *soil*, on the other hand, has its origins in the Anglo-French word *soil*, meaning “piece of ground, place,” signifying something with more of a foundation and purpose.

What gives soil that foundation is the organic matter, or humus, which comprises topsoil. Good soil is a living and self-sustaining ecosystem made up of plant matter, earthworms, microorganisms, fungi, bacteria, and insects.

The different-sized particles of this variety of materials create structure and texture that hold the soil together, preventing erosion. The air pockets they make absorb and release water and nutrients, instead of allowing them to leach out. Roots can travel deeply along their channels and access nutrients well below the surface. Dirt does not have these properties.

Ironically, all soil is created from dirt over hundreds of years, but you don't have to wait that long. To transform dirt into good garden soil, you just need to add the things that distinguish the two.

### *Compost*

Compost is the best path to healthy garden soil. It is simply raw materials that have broken down and decayed over time to create a vibrant ecosystem of organisms to feed your garden. Carbon and nitrogen, in a ratio of 2:1, make suitable habitat for

earthworms, insects, and fungi, the elements responsible for decomposition.

You can make a compost pile inside any small enclosure, such as a ring of chicken wire or walls of old pallets. Pay attention to how much carbon and nitrogen you add. Dead leaves, garden debris, small twigs, straw, paper, and cardboard provide carbon. Fresh plant material, such as kitchen scraps and grass clippings, provide nitrogen. Use the ratio of 2:1 to keep the pile from smelling like a garbage can on a hot summer day.

Place some small branches or dead flower stalks at the bottom of your enclosure and add raw materials as you have them. Water your pile and turn with a pitchfork regularly. Water and aeration speed up the process. Rotate two or three piles in varying stages of decay for a constant supply of compost.

If you don't have room for compost piles or need to discourage bears and other wildlife, compost tumblers are an excellent solution. They are available at hardware stores, nurseries, and online, or are simple to make. Add the raw materials and a bit of water, turn the handle, and wait. Because tumblers tend to get turned more often, compost is usually ready sooner.

Some friends of mine have a tumbler to deter hungry wildlife. The tumbler has two compartments, which are in use all the time. One side has compost ready for the garden while the other has fresh kitchen waste, straw, and llama manure (llama beans). As one side gets emptied, the other is decomposing. Using a tumbler is less strenuous and more time efficient than hand watering and aerating a pile with a pitchfork.

Another form of composting that takes even less effort is sheet mulching or lasagna gardening. It takes a little forethought, because the pile should sit for a year to give it time to break down.

In an area or specific bed, you want to plant next year, lay down cardboard then alternate layers of carbon and nitrogen material, like making a lasagna. The cardboard will smother the weeds or grass beneath it while making the perfect cool, damp, and dark environment for earthworms.

The following season, the pile should be decomposed enough to plant in directly without having to till. Beneficial organisms will also have moved in to help create nutrient-packed compost. Sheet mulching is also a great way to improve the soil around fruit trees and perennials while getting rid of weeds and conserving moisture.

### *Buying Compost*

Not everyone has space for even a small compost tumbler and buying compost may be the only way to acquire it. Large and small bags are sold at nurseries and garden centers. It may not have some of the living entities, but it has great texture that will surely improve the local soil.

Bulk compost and topsoil are also available by the yard and can sometimes be delivered. Because it has not been bagged, it should be teeming with worms and other organisms.

*in Northern New Mexico and the Rocky Mountains*

I don't think we can help displacing some soil when we are done in the garden, but we can try to leave as much outside as possible.

(Courtesy of the *Taos News*)



## **Season Extenders**

Protecting plants in spring and fall allows you to plant earlier and harvest later. Covers create a warm environment to help seedlings adjust to transplanting in spring and provide extra heat in fall to ward off cold temperatures and frost.

Season extenders double as protection from hail, rain, snow, wind, and some insects. And as we know, some of those weather events can be extreme. Hail is normal, but inches of it shreds our plants. Wind is normal, but not sustained at 60 miles per hour. Monsoon cloudbursts are normal, but not to the point of flash flood threats every day. Take the normally challenging growing conditions of the Rockies, multiply them by 5 or 10, and you'll see why your garden needs protection.

Cool weather plants that hold up to cold temperatures in fall are tender in the spring. Lettuce, broccoli, and kale should be covered after planting, but spinach doesn't mind the cold.

In our short-season climate, warm weather transplants need protection from late frosts.

Tomatoes, peppers, eggplant, squash, and basil need cover well into June. We don't get the warm nights they require for optimal growth, so we must create it for them.

Covers can be simple or elaborate, homemade or purchased. Be prepared before you need them.

The easiest and cheapest covers are old sheets and blankets. Raid your linen closet or scour yard sales and thrift stores. Place them over your plants and secure the bottom edges with rocks or soil. You can also put bamboo stakes or hoops in the ground to raise the material and create an air space. Remove the sheets during the day to let the sun warm the plants and soil.

Floating row covers are made of lightweight spun polyester. A layer of it looks like it's gently floating over your plants. Air and rain penetrate the fabric, so you don't need to remove it during the day. Extra layers can be added on cold nights.

Frost cloth is a heavier type of row cover. Temperatures under a layer of frost cloth can be 10° higher than the outside air. On very cold nights, put down floating row cover and top with frost cloth.

Cloches protect individual plants. In 19th century France, gardeners put a decorative glass jar over a plant at night. They're very pretty but high maintenance. They need to be removed every day to prevent heat buildup, so they are not practical for large plantings.

You can make a cloche from a plastic gallon milk jug with a lid. Cut off the bottom with a utility knife and place it over your plant. Remove the lid during the day to let heat escape or remove the jug from the plant entirely. For added protection, you can lightly cover the plant with straw, then place the cloche. This is an excellent way to reuse plastic jugs, but they do need to be monitored during the day to avoid heat buildup.

Build a low tunnel over your rows. Put metal or PVC hoops in the ground leaving enough room for plants to grow. Cover the supports with greenhouse plastic. If you attach your supports to a base frame, it will be portable.

A hoop house or high tunnel is a permanent building with headspace for people and equipment. The soil absorbs the sun's heat during the day and radiates back out at night. Row covers can be placed over crops during very cold weather.

A cold frame is an inexpensive do-it-yourself project. It can be as simple as a wooden box with recycled windows on top. Use strawbales or cinder blocks for walls, both of which have insulating properties. The windows must be opened every day to avoid excess heat.

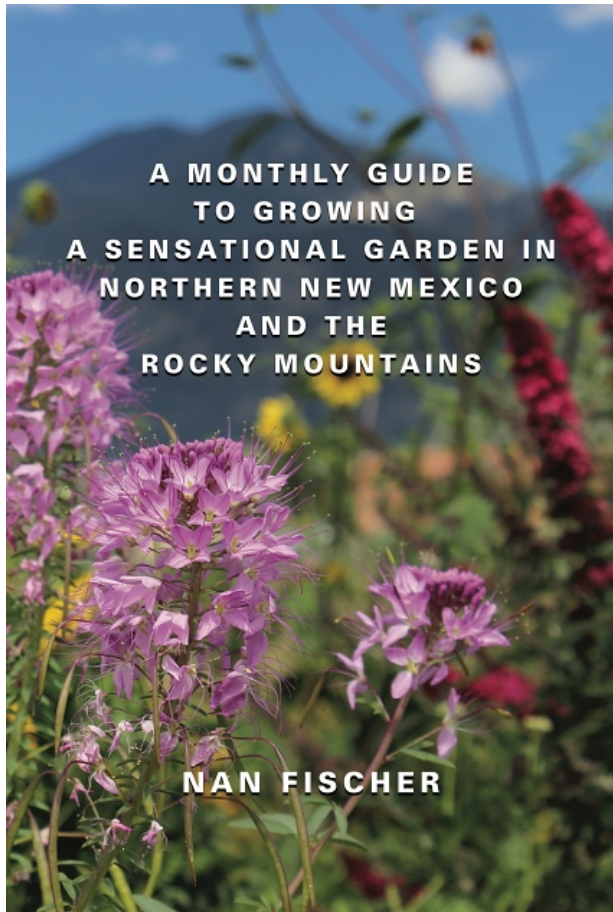
Season extenders work at both ends of the growing season. They provide warmth in spring allowing you to transplant earlier and warmth in fall for later harvests. In the Rocky Mountains, a couple extra weeks at each end of the season is a blessing.











*A month-by-month guide to planning, growing, and harvesting a lush garden in the challenging conditions of the Intermountain West.*

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