PROFILES IN soil health

Donna Adrian
Master Gardener
White River, South Dakota
Mixed Vegetables

Master Gardener Credits No-Till Gardening with Increased Soil Health and Decreased Weeds

For those who know her as the Garden Lady, it may come as a surprise to learn Donna Adrian didn’t always enjoy gardening. In fact, “chore” is the nicest word she used to use to describe the task.

“When my parents always had a big garden, so I grew up gardening. It was a lot of hard work hoeing the hard ground to get rid of weeds,” she explains.

When it came time for her to plant her own garden, Adrian began looking for easier methods. “I thought if I could do something to keep the weeds from growing without hoeing, that was what I wanted to do.”

No-till gardening was the solution Adrian discovered. It changed her gardening methods and outlook. Gardening was no longer a chore she avoided. It became her calling.

Today, the 75-year-old SDSU Extension Master Gardener shares the message that anyone can garden.

“So many people have this stigma in their brain and think, ‘I can’t garden because I have to have a bigger yard, or a tiller, or access to water.’ I want to show people that they can garden with less land, less work and less water,” said Adrian who teaches her low-maintenance, soil-building gardening methods to anyone who will listen.

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Master Gardener Donna Adrian

During the growing season she serves as a volunteer, mentoring new gardeners in school and community gardens in White River and across the Rosebud Reservation. She also teaches classes. Her own garden, located on her family’s White River ranch, is a testament to the soil-health benefits that result from 30-plus years of no-till, no-chemical gardening.

“When I first put in my garden, my soil was silty clay, hard as a rock and full of weeds,” she says.

Today, a small garden trowel quickly reveals a difference – soft, crumbly and rich, black soil, full of Adrian’s favorite invertebrate – earthworms. As for weeds? They are few and far between. And, it’s not because Adrian spends time hoeing.

“My hoe handle broke 20-years ago and I have never fixed it,” she admits.

Let Mulch and Worms Work for You and Other No-Till, Low-Maintenance Gardening Tips

Wondering why tillage is a technique Adrian avoids? She explains that in addition to erosion, tilling the soil activates dormant weed seeds, destroys worms’ habitat and breaks up roots left behind from earlier seasons, increasing compaction and disrupting pathways which enhance water and nutrient infiltration.

Tilling in and of itself is also a barrier that prevents many from gardening because tillers are expensive, may be difficult to operate and are not as accessible to rent as they once were.

“When tilling kills worms and ruins the ecosystem under the ground. All the little critters underneath are converting dead roots and things into fertilized soil for plants to use,” Adrian says.

She explains that while tilling disrupts life below the soil’s surface, no-till methods enhance it. “A worm poops out its entire body weight each day. With no-till, they are fertilizing my soil, so I have not needed to add fertilizer to the soil.”

What she does add is mulch, grass clippings, bark chips or shredded paper. Whatever biodegradable ground cover that is readily available; Adrian says mulch is key to no-till gardening because it controls weeds and feeds the soil as it breaks down. Below, Adrian explains this and other no-till gardening best management practices.

Soaker hoses: If a garden is too large to water by hand, Adrian suggests installing soaker hoses and covering them with mulch.

This method saves water from evaporation and more effectively provides water to plants. It also reduces the cost of watering.

Plant diversity: Multiple species planted together help with weed and pest control, but also are visually pleasing.
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Mulch adds nutrients, conserves moisture and kills weeds
Whether you’re a practiced or new gardener, when starting a no-till garden plot, have plenty of mulch handy.

If working on an existing, previously tilled garden plot, instead of tilling, simply carve out a small seed trench with a garden rake and sprinkle seeds. Once plants sprout, cover the soil surrounding the sprout with about 3 to 4-inches of mulch.

Add more mulch as the plant grows. Kill any weeds that do sprout by covering them with 3 to-4-inches of mulch.

Grass clippings, old newspaper and cardboard: Because she mows a large lawn, grass clippings are Adrian’s go-to mulch. Just make sure the grass is free of herbicide.

Shredded newspaper and cardboard are other free mulch options she recommends.

Master Gardener, Donna Adrian recommends the lasagna method. Layering cardboard, top soil and grass clippings atop weedy or compact ground, the lasagna method allows gardeners to begin no-till gardening quickly, with little effort or investment.

Weedy or compacted soil an issue? Try the lasagna method.
What you’ll need: cardboard, shredded newspaper, grass clippings and top soil or gardening soil.

Select an area of ground that receives at least six to eight hours of direct sunshine. Lay cardboard on top of compacted or weedy ground. Water each layer. Next, lay down a 2-inch layer of shredded newspaper. Then top with 2-inches of lawn clippings, then 2-inches of soil. Repeat two times.

It’s best to do this in the fall and let the pile breakdown a bit over winter. However, gardening can begin right away if the weather cooperates. Simply, plant into the top, 2-inches of soil, keep moist and mulch once seeds sprout.

Start small: If you’ve never gardened before, Adrian recommends beginning with a 4-foot-by-4-foot square garden plot and a smaller number of seeds. And, instead of planting seeds in rows, with walking paths between, plant seeds, a few of each plant type, throughout entire bed.

Remember, cool-season plants, like lettuce and radishes can be inter-seeded around warm-season plants like corn, beans or tomatoes because they will be ready to harvest earlier in the season.
Create walking paths: To eliminate compaction in the garden, Adrian says to create walking paths around garden beds. Again, ground cover is key to keeping weeds out. For paths, non-biodegradable options can be used. Adrian suggests using wood chips, old boards, old carpet or cardboard to create weed-free walking paths.

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- Donna Adrian, Master Gardener

Go vertical: At 75, Adrian has figured out several low-maintenance methods that make maintaining the garden and harvesting produce easier on her body.

Instead of tomato cages, she stakes wire mesh cattle panels in her tomato bed, weaving the plants in and out of the wire mesh as they grow. Once the plants reach the top of the wire mesh, she trims the top off the plant. This encourages the plant to put energy into producing the tomatoes she can easily see and harvest from an upright position.

Adrian does the same in green bean beds and grows cucumbers over an arched cattle panel for ease of harvesting. The vertical garden structures also create wind breaks.

Pollinators welcome: To increase the number of butterflies, bees and other pollinators who visit her garden, Adrian plants flowers throughout her garden.

To protect pollinator insects, Adrian does not use any chemicals in her garden. Instead, she keeps a spray bottle of water and 1 tablespoon dish soap handy for when she spots pests, like potato bugs. She sprays the pest and plant. She says the method is effective because the soapy water kills pests by dissolving its protective cuticle/skin.

It even works with fruit trees. Adrian once had a worm infestation in a peach tree. She coated the tree's branches and fruit with soapy water every few days. The treatment worked. She harvested 400 pounds of peaches that year.

“Working with nature and finding ways to take care of the soil instead of damaging it, makes us gardeners stewards of the land,” Adrian says.