

Introduction

North America wallows. Doctors, dentists, hospitals, clinics — rake in money. The costs of an ever-growing fraction of the population requiring care and/or supervision are sinking the economy. Australia follows blindly down the same path, a few steps behind. But I'm not talking about money here; it's unnecessary suffering that concerns me. Maybe more than that — it's the ever-lowering quality of daily life.

We've known the remedy since the 1930s but have not yet applied it. The simple fix — grow nutrient-dense food — is not mentioned, while powerful interests profit from the current farming system. Their conscience-less apologists, the most credentialed scientists money can buy, spew convincing statistics and cite carefully front-loaded peer-reviewed studies. Consequently, the public mind is enormously confused about what constitutes a healthy diet, about differences in the nutritional value of foods, as well as about the worth (or lack of it) of the attractive-looking but nutrient-poor foods being offered them.

I assume you already are concerned about what food does (or doesn't do) to make you healthy. You are seeking better answers, you are seeking better food, and almost for sure, you are uncertain.

But perhaps you are not confused. Suppose you fully realize nutrient-dense food cannot be bought reliably at any price and have set out to grow enough yourself to make a meaningful difference. You have no desires contrary to that aim. No conflicts about it. And what you want

from my book is to just get on with the details of how to do it. You may have already created a large garden or are about to, or are about to expand a few small beds into something significant to the family economy. And you want to do it right. For you, I suggest (after reading this Introduction) skipping forward to Chapter 5, where you will learn how to take a soil sample, how to analyze the soil audit you'll get back, and how to work out a soil prescription that will offer your vegetables balanced nutrition. You can then proceed to grow nutrient-dense food. In Chapter 5, you'll get an arithmetic-powered fertility target generator that'll tell you exactly what each unique soil needs.

The rest of you are uncertain. You wonder if this remineralization stuff really is the way to go. Maybe you've read a few issues of *Acres* or *Mother Earth News* or subscribed to Rodale's *Organic Gardening* for a year or three, as so many of us oldies did when first starting out. Consequently, you are now aware of conflicting viewpoints...and most of them sound pretty reasonable. Some prominent voices assert the following pleasing fiction: there is no need to pay attention to soil minerals because almost every soil already contains all the elements needed to grow nutrient-dense food crops; currently non-productive soils only need the right sort of biological encouragement — the sort that can inexpensively be brewed up out of some specially concocted compost (but only if you buy a patented brewer and the appropriate starter cultures). Or maybe you have been enthusiastically told by a devotee that Fukuokasan had the right idea. Or you have been inspired by the organic gardening ideal that asserts there is nothing like compost: compost is the remedy, compost is fertilizer, compost is life itself. Another half a dozen gardening systems come readily to mind. New gardeners running that gauntlet often achieve inner peace by selecting a guru-system whose notions resonate with their basic predispositions or existing opinions, and thenceforward, cling to that approach like a lifesaver in a stormy sea of confusion.

I propose to help you put these inevitable confusions into perspective and help you settle on an effective plan for producing a nutritious abundance. And, just in case you are concerned that this old reprobate might lead you from the politically correct path, here's my bottom line: when a soil is very far away from offering plants an abundant and

balanced supply of minerals, if key plant nutrients are nearly missing or way out of proportion, then the food it produces cannot be nutrient-dense. Period, full stop!

There is also a biological side to it, equally important to plant health and ultimate food quality. So which is the chicken and which the egg? I say soil minerals come first. If first you bring the minerals into proper balance, then the whole soil ecology, all the microlife — the worms, nematodes, algae, amoeba, fungi, bacteria, both helpful and harmful — all those living things come into a healthy balance too. In my opinion, when it comes to microlife, there is rarely any need to import them. When the soil favors the proper organisms, they *will* predominate, appearing as if from nowhere. As Louis Pasteur admitted on his deathbed, the body's inner chemical nature is everything, the bacteria is nothing — disease organisms appear because the body has become a welcome home for them. Same with soil.

Microorganisms that naturally dominate in balanced soil work to effectively release plant nutrition that had previously been locked up and unavailable. They also assist the crop to assimilate that nutrition. Soil microorganisms can manufacture enough nitrate nitrogen to make a garden independent of nitrate imports. Biology can enormously forward an already balanced garden soil; biology can perform miracles. But biology will only do its job with extreme effectiveness after you have fed the soil to satiation and brought it into balance.

The first chapters of this book aim at helping you to re-evaluate food-growing information you may have already acquired. Suppose you arrive at Chapter 5 a few evening's of reading behind those who are already convinced that remineralization is the way to go. Once you're a bit softened up by my passionate prose, what are you in for?

First, you will be asked to get an inexpensive soil test. The highest-priced American lab I recommend charges \$20. The cheapest lab on my list charges \$14 (as of 2012). For small fees like these, a soil audit will provide no personalized recommendations. You'll promptly get back a computer-generated form reporting the amounts of plant nutrients present. With this book's help, you'll be able to work out a list of soil amendments targeted at bringing your soil into balance. It's a matter of applied arithmetic, made simple.

First you'll learn which mineral elements your soil needs and which of the many possible OMRI-listed (Organic Materials Review Institute) materials to use to make that happen effectively. Then I am going to explain how to make effective compost. I've been making compost for 40 years now; for the first 35, I didn't get the kind of terrific results the old-timey organic gardening books led me to believe I would inevitably achieve. Maybe I can help you skip over those 35 years of practice.

So what are you getting into if you choose to remineralize? In short: several years of rapidly improving results until you achieve a high organic matter level and the best mineral balance your soil is capable of. The specifics of garden remineralization vary with location and circumstance. The goal is pretty much the same, but the route varies. Chemically, soils can be extremely different. Almost all of them are out of balance, at least to some degree. The majority of soils seriously lack essential plant nutrients. And it is not unusual for soils to have nutrient excesses, sometimes really big ones. How much time, material (and money) it may take to restore missing plant nutrients or to reduce excesses, varies. Some soils cannot hold on to large quantities of plant nutrients, so they can be transformed rapidly by the application of small doses. This facility to be easily transformed also allows soils to untransform equally rapidly, which is a major obstacle when it comes to growing nutrient-dense food. Other soils (heavy soils in particular) can soak up a great deal of plant nutrition, so it can take a larger quantity of soil amendments applied over several years to get to the levels you want.

But you will not have to wait several years to see results. Not at all. Unless you already have a magnificent garden and trying to upgrade it is like gilding the lily, remineralization will bring immediate, major, massive improvements. Even if you are a new gardener or are starting a brand new garden, you will start having excellent results the first spring — maybe terrific results, if your soil did not start off too far out of balance.

Soil minerals are strong medicine, even garden stalwarts like dolomite lime are powerful amendments. And there are few things more important than a food garden. So can you trust the advice of someone who does not possess an advanced degree in horticulture or a license to prescribe?

About the Author

I have spent 35 years making erratic progress at fending off disease through dietary reform; so far, I've managed to keep two steps ahead of the Piper. I also treasure personal independence. After four years of serious suburban backyard food growing, I decamped to an Oregon homestead. I've lived that lifestyle for the past 35 years. Homesteading suits me well. I spend as much of my time and energy as possible pursuing my own interests and aspirations. I can't help but protest when forced to pay attention to things that do not interest me — in other words, I never successfully worked for someone else without soon becoming terminally bored. In a similar way, I find formal education irritating — a waste of my time that could have been better spent on self-directed study.

I did manage to achieve a right and proper BsEd (in history) from a certified state university. But it took me seven turbulent years of starting, quitting in disgust, and then restarting six months or a year later; the cycle repeated several times until I realized the process was never going to be enjoyable or personally meaningful, so I just got on with it to get the degree as quickly as possible. I have no formal agricultural training. I had no formal business education either, yet in the 1970s I managed to bootstrap (with next to no starting capital), build up, and then sell a thriving book production business. No one exactly taught me how; I just picked it up through my dealings with tradespeople and customers.

High school inorganic chemistry was one schooling experience I *do* value. If I had not learned — honestly learned — inorganic chemistry in the 11th grade, 55 years ago, I don't think I could have written this book. Happily, because I did learn it, I can explain the subject at hand in a way that won't require you to know chemistry or even high school math.

When I went into the mail-order seed business, I found myself dealing with qualified agronomists and plant breeders who were amused to hear me spouting half-baked ideas acquired from Rodale's *Organic Gardening and Farming* magazine. Their bemusement prompted me to do some serious study of horticulture and agronomy on my own. I think I did pretty well for an amateur. I do have some agronomic lacks:

I do not know organic chemistry, so the intricacies of plant physiology at a chemical level and some of the more complex soil chemical reactions are beyond my comprehension.

On the other hand, I have 40 years of hands-on, serious food gardening experience. (The modifier “serious” means that I attempted to make vegetables a majority of my diet.) And I have been teaching others to garden better since 1979, when I wrote the (admittedly primitive) first edition of *Growing Vegetables West of the Cascades*. If you want to do some serious gardening, I can help you. The art of remineralizing soil to increase nutrient-density was developed by independent biological farm advisors working in the tradition of William Albrecht, a pioneering researcher in the relationship between soil fertility and human health. Farm advisors can acquire lifetimes of experience in a few short decades by analyzing other people’s soil and seeing the results of their advice. The Bibliography lists a few books written by people who were highly successful at this. I have had the opportunity to chat with a few of these guys, which is amazing in itself, because boy, are they are busy! They travel widely. And they hang around with big farmers who spend (and hope to make) big bucks.

Fortunately there is at least one advisor, Michael Astera, who does focus on small growers. Michael wrote a book, *The Ideal Soil*, that gives amateurs a simple way to analyze their garden’s soil without having years of experience or a degree in horticulture. It is a mathematical system that adjusts the proportional relationships that should actually exist among plant nutrients. The method allows the amateur to know — about as well as any practicing biological farm advisor knows — how much of each plant nutrient should ideally be in their soil. These “ideal” plant-nutrient targets are compared to a soil test report that shows the amounts that actually *are available* to plants. The difference between what is available and what is ideal is made up for by the addition of fertilizers. (Or, the comparison lets you know which nutrients are present in excess.) Easie peasie. The approach has one other powerful attraction: when you achieve “the ideal soil,” you should also achieve the highest possible nutrient-density in the foods you’re raising.

A few years ago, Michael began participating in “soilandhealth,” an Internet discussion group I moderate. I had never before thought that

such precise soil balancing needed to be applied to the home garden. On the forum, I had complained of “tight” compacted soil despite the addition of lots of organic matter. Michael suggested I change the type of lime I was using. I did, and a year later my soil was loose. At his suggestion, I got a soil test; his analysis helped me to get results beyond any expectations. So I read his book. And then I closely studied his book. And I kept on studying. I was inspired — at age 69, no less! I started giving free soil test analyses and fertilizer prescriptions to anyone on the soilandhealth forum who asked for them. I started doing them for people in my neighborhood. Before long, I had become a local garden soil analyst — with a half-dozen large bags of assorted fertilizers in the garage.

Participants on the soilandhealth forum generally refer to an arithmetical system like the one I explain in this book as the “Asteria Method.” Constitutionally, I can’t be a true believer in anyone’s system; as I studied his, I began to introduce my own tweaks. To his great credit, Michael himself isn’t a true believer in his own method. He freely states that his targets and the proportionate relationships that generate those targets are educated, inspired guesses. But contemplation of what might constitute the ideal soil involves a big playing field — one with enormous variability. So, based on my 40 years of hands-on-hoe experience, I have come to disagree with Michael in some respects. That’s not unusual. Every successful farm advisor out there has a slightly different opinion about what constitutes a perfect soil prescription.

When people apply the art of balancing minerals to an existing garden, they are often inspired in the same way Erica Reinheimer was inspired — in the same way I was inspired. Some of my readers will soon want to help their whole neighborhood. And thus it is that I foresee the birth of a new helping profession — the neighborhood soil analyst. It’s a microbusiness requiring investment in little more than a dozen or so farm-sized bags of plant nutrients and an accurate scale. A soil analyst assesses a garden, orchard or field, takes soil samples and sends them in for analysis, works out a soil prescription, supplies the fertilizers (if only a small garden is involved), and provides consultation as needed. All for a modest fee. If a few hundred people start doing this because of reading my book, I’ll be proud of myself

for having written it. If a few thousand start, it will be a major social transformation because tens of thousands of people will discover for themselves that health really does come from better nutrition.

Good health and good gardening to you and yours!

Steve Solomon
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