

## Looking Backward, Looking Forward

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Years ago, when I was a young child growing up in the suburbs of Long Island, my grandmother gave me a beautiful picture book called Around the Year, by Tasha Tudor. Portraying children enjoying quaint old fashioned farm-type activities in each season, this book strongly influenced my view of what I wanted to experience and to have in my life, as anachronistic as it seemed at the time. The pages for January show children sledding with homemade wooden sleds, roasting apples over an open fire and pulling taffy. This morning,



our children, bundled in many layers, have just run out into the snow to sled on the hill going down to our frozen pond, to play in results of the Great Northeast Christmas Blizzard of 2002, looking remarkably like those children in that beloved book. January does bring a time for cozy and relaxing activities, with the demands of planting, cultivating and harvest completed and the new season not yet begun. January brings a chance to reflect, to enjoy the people around us, to appreciate the warmth of home, and to plan another season.

January is named for the Greek god Janus, the god of beginnings and endings, who looked both backward and forward with his two faces. He was considered the door-keeper of the new year. Interestingly enough, our word 'janitor' comes from Janus, as the person who tends the buildings, keeps the place neat and clean, the keeper of the keys. The term 'janitor' does not carry much honor or authority in today's world, but the role is just as essential and significant it was when it was honored by the name of an important god, Janus. As organic farmers, we would do well to consider our role as 'janitors' - humble perhaps and somewhat invisible, but critical as conscientious and dedicated caretakers, providing a healthy, clean environment and healthy, clean food for the many people who are counting on us.

My brother-in-law, David Gilgoff, tells us that the equivalent Hebrew word is 'shamus', the caretaker of the temple, entrusted with the keys, who was charged with maintaining both the cleanliness and the sanctity of the temple. Suddenly our role as 'janitor' is growing! The Hebrew word, 'shamus', also refers to the ninth Hanukkah candle that lights the other 8 candles on each successive night. In a festival that celebrates hope and new beginnings, the 'shamus' tends those who are in darkness and brings increasingly more light each night. This too is a role we should consider.

January brings us ‘organic janitors’ a fresh chance to plan a successful and productive season, to correct previous problems, to work deliberately for a cleaner and healthier world, to wisely use the keys that we carry for good, and to bring light into the darkness.

## LOOKING BACKWARD

One valuable January activity is to summarize the previous year and to try to make sense out of our records, considering both the successes and the failures. Yes, this means working on our ‘audit trail’, both for organic certification and also for income tax purposes, for the time spent on this is just as critical as time spent on repairing machinery. Unfortunately, maintaining a sufficient audit trail on organic crops can be challenging and onerous, this is a NOT part of farming that comes comfortably or intuitively for many farmers. But after 10 years of farming organically, we have learned some pretty good tricks that can make it



easier and can make the information more effective to use in a thorough and beneficial January review.

**Before the season begins, start a different manila folder for each crop that you are growing.** Label the folders ‘wheat 2003’, ‘soybeans 2003’. etc. and keep them in a convenient place. As you start the season, place all seed invoices, seed bag tags, input labels, seed and inoculant non-GMO statements, inoculant bags, contracts,

correspondence, pictures - ANYTHING that pertains to that crop into its folder. If you used your own saved seed, jot that down on a piece of paper and put it into the folder too. As you finish the season, put all grading records, bills of lading, clean truck affidavits, weigh slips, and check stubs that pertain to the crop into the folder. If your organic certification requires you to issue individual certificates of sale (i.e. transaction certificates), file your copies in the appropriate crop folder too. In the heat of the season, when you might not have time to file all the stuff in its correct folder, have one ‘Miscellaneous’ folder in the drawer too, so you can just dump in important stuff and file it later. Then, prior to your inspection next year, it will be easy to organize the records from the previous year’s crops.

**Keeping field records** is tough, but ring binder notebook with one page for each field works reasonably well, giving plenty of space to jot down field operations as you do them, varieties planted, field observations, weed control information, and harvest/storage data. Print out or photocopy your field maps and put them in the front of the notebook in case you forget your field numbers. We keep our notebook in the shop or carry it around in the cab of the tractor. Where there are particular weed problems, or a big rock that needs to be dug out, this is marked in the book. Locations of dead furrows and back furrows are also marked, since they may be difficult to see later in small grains and cover crops. For the technologically advanced, a Palm Pilot or data logger can replace the notebook, but we like having the hard copy out in the field and transfer it to the computer later.

**It is useful at the end of the season to make a Master Crop List for each crop.** List all your fields of a given crop, figuring up total acreage. Then record the harvested quantity, the storage destinations, and all sales information. Summarize all sales with date, amount, buyer, price, etc. This doesn't really take long when all the information you need is in each folder.

**You can then use this information to calculate your Cost of Production of each crop,** and to figure if you have made money on it! For each crop, list:

(1) All purchased inputs, including seed, organic fertilizers, inoculant, lime, compost, and all other inputs, figuring how much you used per acre, multiplied by the number of acres and the cost per unit. Remember to include your organic certification costs!

(2) Machinery and labor costs by using typical custom rates for as many of the operations as possible, including harvest. Our local farm papers routinely list typical area custom rates per acre for most field operations. For each crop, list all the operations you performed, multiply by the number of acres, and then calculate the cost at custom rates, as if you had hired the work done.

(3) You can estimate land costs by figuring what rent for equivalent land would be or if you own your land, use a reasonable interest rate times the current value of your land.

Add it all up - that is your Cost of Production. Now divide by what you were paid for the crop. Did you make a profit on the crop? Were any fields noticeably lower in profit either due to low yield or high input costs? Try to determine which fields made the most profit and project how you can use that information to increase profit on the rest of the fields.

**An organic farmer often faces another cost that can quite high.** Unlike conventional farmers who can take their grain to the elevator shortly after harvest and be done with it, organic farmers may be required to wait 6-8 months before the buyer calls for delivery. Often payment comes only after delivery. The farmer must be sure that there will be adequate cash flow to cover those months before payment, and short term operating loans may be necessary. If so, this should be considered part of the cost of production. Additionally, the longer the crop is stored, there may be additional storage loss and cleanout, resulting in a lower payment than if the crop was delivered upon harvest. Again, this shrink must be accurately accounted for in the cost of production. Therefore, you might want to also add the marketing costs for the crop:

(1) Storage costs - remember to add additional storage costs the longer you store a crop until sale, including any increased storage loss and the interest on the money you could have made if you had sold at harvest.

(2) Trucking and delivery to buyer if this is required.

NOW - did you make a profit on each of your crops?

## **LOOKING FORWARD**

January also brings a time for planning. You probably have been around organics long enough now to realize that soil fertility management is the key to high quality crops and good weed control, but when you walk out into your fields and look at your crops and the soil, how do you know whether you need to adjust your fertility, on which fields, with what

materials, how much and when???? This is the heart of the matter - you know its important to do soil fertility management right, but what exactly is right?

### **CLUES THAT YOU MAY NEED SOME SOIL FERTILITY INTERVENTION -**

**1. Look at the weeds** - can you identify certain prevalent species? The presence of certain weeds can be a clear indicator that key chemical components may be out of balance in the soil. If you have large vigorous populations of weeds that prefer hard compacted soil (foxtail) or that prefer soils with excessive nutrients (lambquarters, pigweed), this can suggest needed fertility correction.

**2. Look at the soil** - does the soil look soft and mellow, or is it hard and crusty? Does the cultivator and plow go in easily, even if the soil is dry? Are there plentiful earthworm holes? Does it smell good - or not at all? When the soil is wet, is it still loose and crumbly, or is it pasty and slimy?

**3. Look at your crops** - do they grow vigorously, competing strongly against the weeds, are the leaves a healthy green and the stems strong? Or do your plants lodge easily, do the leaves show yellow or purple streaking especially when under drought stress? Which are more prolific - the beneficial or harmful insects?

**BUT KEEP THIS IN MIND!!** Amending your soil is no substitute for good agronomic management. Fine-tuning your fertility if the agronomics are not sound is like tweaking the carburetor adjustments when there is a blown piston. Take care of the big stuff first! Adjusting soil fertility is certainly an important part of good management, but you won't see any return from the adjustments unless your crop rotations, choice of adapted varieties, tillage, weed control, and other such factors are in line. And, for the most part, you don't have to purchase these other factors!

### **TESTING, TESTING . . .**

Many people don't realize that a soil test is NOT absolute calculation of all available nutrients in the soil. Actually a soil test is merely approximation of the nutrients that may be available to a growing plant under normal growing conditions. Soil tests can be extremely valuable in planning soil fertility management, but unless you actively use the soil test results, then they become just very expensive pieces of paper in your audit trail folder.

**Soil tests are not all the same.** Soil test results highly dependent on the method of chemical extraction, that is why different labs will come up with different results. There is no absolute 'right' way to simulate the availability of nutrients and the different extraction techniques all have some validity, though some methods may be more useful than others in a particular situation. It is important to select a soil testing lab that uses the best technique to plan effective fertility management on an organic farm. Researchers at Rodale in the 1980's took one sample of soil and sent it off to 70 different labs . . . and got 70 very different results. Indeed, the pH of the sample ranged from 4.7 to 6.9 with lime recommendations ranging from 0 to 7 tons per acre! Readings and recommendations for NPK and micronutrients were equally variable.

**Calibrate the results.** You need to work with a lab that is familiar with organic farming and with your general geographic area, and then compare your results year to year from that

lab, rather than trying a different lab each year. It is also a good idea to calibrate any lab's results to your own farm by taking a soil test from one of your best producing and most manageable/well managed fields. This will give you an approximation what a good soil test from that lab should look like, and give you a better idea of what you might want to see on tests for your other fields.

**It is useful to get information on CEC, soil organic matter and % base saturation for cations such as potassium, calcium, and magnesium, as well as micronutrient levels.**

For organic farmers, base saturation is a more useful measurement than pH. pH simply compares the percent of hydrogen ions to the percent of other cations in the soil - the lower the pH, the higher the number of H<sup>+</sup> ions. In contrast, base saturation tells us which actual cations, especially Ca and Mg, are present and in what relative quantities. This is critical to those of us who are using the Albrecht method to balance the calcium to magnesium ratio.

**It is important to interpret soil tests for the organic farming production system model.**

Most soil testing labs only recommend units of chemical fertilizer based on plant response in a conventional system, though it is not uncommon for labs to liberally recommend 'insurance' or excessive fertilizer that may not be necessary and may not be correlated with any crop response data. Conventional soil test recommendations may not be particularly applicable in the organic system. It will usually be FAR too expensive to apply a recommended number of NPK units using typical low-analysis organic amendments and it is usually unnecessary.

Organic fertilizers tend to have lower analysis numbers because the ingredients used in organic fertilizers do not contain large amounts of water soluble nutrients. Organic fertilizers are generally made of complex organic and inorganic products, such as compost, clay, rock dusts and/or seaweed. These products contain a lot of other material that do not add significantly to the water soluble NPK analysis numbers on the label, but are still valuable sources of nutrients, especially over a longer period of time. The nutrients are indeed present, but they are not rapidly released into the soil and tend to be more dependent on the rest of the soil environment. An organic fertilizer label that lists the analysis as '3-2-1' doesn't mean that the product is 94% worthless. It just means that only 6% of the NPK fertility is considered water soluble by the usual synthetic fertilizer analysis techniques, as required by law. The rest will become available over time, and many nutrients will also become more available when a soil is limed.

Especially in an organic system, there is more to soil fertility than NPK and there is much more to soil fertility than just going out and buying stuff. The REAL source of soil fertility and soil health is the microbial activity of the soil and the activity of the soil organic matter. Organic matter and a healthy diverse microbial population will provide important plant nutrients, improve the cycling of nutrients in the soil, improve soil structure and tilth, stimulate crop plant rooting, provide microbial competition to keep pathogens in check, darken the soil so it warms up earlier in the spring, and buffers the soil against drastic changes in chemical composition. Usually organic matter doesn't need to be purchased - you can grow it yourself! Cover crops, green manures, animal manures and returning substantial crop residue all add significant amounts of organic matter while harvesting straw

or corn silage removes quite a lot of organic matter. Composted leaves, crop residue, and other plant material are great sources of both organic matter and microbial diversity. Hay adds organic matter but it can remove lots of minerals from the soil over a number of years if the hay is sold off the farm.

## JANUARY REFLECTIONS

The children have just come in from sledding, pink cheeked and noisy, ready for hot cocoa and dry clothes. The quiet of the house and the peace of the moment are shattered, Mom is back on duty!



But still January reflections continue.

Most cultures have special traditions to commemorate the New Year and insure future prosperity. My North Carolinian family background means that on January 1, we will be eating collard greens and black eyed peas to guarantee an abundance of coins and green stuff in the coming year. We assure the children that the worse the collard greens taste, the more

prodigious the quantity of the green stuff they will bring (hopefully not weeds!). But no one in our family needs to be urged to eat the “Hoppin’ Daniel”, our spin on the Southern favorite, Hoppin’ John. Black eyed peas, black beans, garbanzo beans, wild rice, brown rice - all organic of course, flavored with our good smoky homegrown bacon, onions, a little balsamic vinegar, a little garlic, a little red pepper - mmmm, make enough for seconds!

January is also traditionally the time for something else in the farming community, something that is far more frightening for most of us, striking into the inner darkness of our souls and, in our fear, not always eliciting the most honorable or thoughtful emotions and reactions. This is usually the time when farm auctions are planned and announced. Yesterday, Klaas came inside with the disturbing news that one of the large conventional vegetable farms just north of us, good people who farm some of the richest land in the country, will be holding an auction this winter. They have decided to sell out now rather than to lose any more money. A year ago, several other of these premier vegetable farms made the same decision. Four years of disastrous weather and prices are taking their toll, and everyone in our rural community, whether we are organic or conventional farmers or support businesses, are the losers.

In an agricultural community battered by discouragement and failure, by environmental pollution, declining yields, crushing debt and insufficient prices, we organic janitors need to realize that among the keys that we carry are the ones for success, productivity, health, light and hope. We must learn how better to use these keys, and like all good janitors, we must use our keys wisely, and with humility.

