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DEAR ORGANIC GARDENERS,

http://www.seedsofchange.com/enewsletter/issue_68/dear_gardeners.asp

“Got your garden in yet?” Where I live in rural Maine, this has to be one of the most asked questions during the month of June. While it’s reassuring that so many folks are thinking about gardening at this time of year, (it seems like this year, more than in recent memory) it always throws me off, and I find myself in a long-winded explanation of spring gardening, succession planting and cover cropping. It goes something like this: (I’ll try to be brief!)

Actually by this stage in the season some of my garden is already coming out. Unless I’m allowing them to flower for beneficial insect habitat, collecting seed, and/or the sheer beauty of it, my early beds of arugula, lettuce, mustards, spinach and many other greens are making way for tomatoes and peppers, or going into summer cover crops in preparation for late plantings of storage carrots, broccoli, cabbage or any of a multitude of cold hardy leafy greens.

In fact, not a week goes by, from the time the snow melts off the first garden beds, right through to the first fall frosts, that we are not optimistically planting something in the ground. Sprouted pea seeds and spinach go into the first thawed ground of spring while fast-growing greens like Komatsuna or Maruba Santoh, can make a crop in a coldframe long after the first fall frosts have killed off the tender annuals. In between, successive plantings of beans, lettuce, radishes, carrots, beets, corn, and even summer squash keep us busy, and our garden beds full and productive throughout the season. A ready supply of transplants of lettuce, brassicas, and annual flowers fill in any small gaps that develop as things are harvested. A handful of buckwheat or oats is tossed here and there to temporarily protect soil that will be bare for any length of time. It is then cut with a scythe or Kama and left in place as mulch or added to the compost.

You get the idea. There is always something to sow. It’s a process, a journey, not a destination, and we can always find a way to make the trip a little sweeter. From the minute we see the bare soil in the spring, until we sow the last cover crop seed or mulch the last bed before the snow covers the garden in it’s protective blanket, we’ve got our garden on.

I had a conversation recently with Steve Peters along these lines and he has drawn on his decades of organic gardening experience to come up with a myriad of suggestions on how to keep the garden productive throughout the season. He shares them with us in “Succession Planting (or Don’t Stop Now), Part 2.” Knowing the his-

tory of your place is also a great way to look for inspiration on how to get the most from your land. Second year Research Farm intern Evan Snow has done just that, weaving a fascinating tale of the land along the Rio Grande that is now the Seeds of Change Research Farm and Gardens. Kelle Carter, Farm Field Coordinator, get us up to date on the activities there and Joel Reiten reports from the field on some of the seed crops in the ground in the Northwest. Our News and Views this month has some inspiring developments from around the world and finally, intern Kobe Jeschkeit-Hagen reports on an exciting new project at the farm to build a composting toilet to conserve water and recycle waste.

Got your garden on?

Scott Vlaun
Editor

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SUCCESSION PLANTING (OR “DON’T STOP NOW”) - PART 2
(SEE ENEWSLETTER #21 FOR PART 1)
BY STEVE PETERS

http://www.seedsofchange.com/enewsletter/issue_68/successionplanting.asp

Memorial Day weekend has come and gone, and homeowners throughout North America have followed a time-honored tradition. Over these hallowed three days, gardens are duly planted, and then often ignored (except for weeding, of course!) until early August, when the harvest season commences. In fact, as we gardeners know, the gardening season never stops, and we all have favorite strategies to get our plants in early to maximize the season. But let’s not forget that there are many opportunities later in the summer to continue planting all kinds of crops and reaping those harvests for many months to come.

It is true that summer annuals (crops sensitive to frost) requiring 100 or more days to maturity have a limited planting window that ends, for the most part, by mid- to late June—summer solstice time, if your first fall frost date is some time in October. This would include all tomatoes, peppers, and eggplant (all from transplants), melons, and most corn, bean, squash and pumpkin varieties. Almost all other vegetables, however, have extended planting seasons that, in some crops, can last all summer long. For successful production, the most important factors to remember are: 1) your first average fall frost date, 2) days to maturity (from direct seeding or transplanting) of the specific variety you are sowing, and 3) whether the plant is frost-tender or frost-tolerant. In addition, as the summer progresses toward mid- or late August, the day length begins to shorten noticeably, and the number of useful daylight hours for ripening a plant also lessens. For example, lettuce planted in mid-May may require 55 days to form a full head, but that same lettuce variety planted in mid-August may require 70 days to form a full head, because there are many less hours of effective sunlight in September and October compared to June and July.

The following is an approximate guide for planting opportunities after the summer solstice (June 21) for our common garden vegetables, if the average first frost date is mid-October. Adjust accordingly for earlier or later first frost dates in your area.

Last Planting: Early to Mid-July

- Bush Beans - many varieties are ready in 50–60 days and can be planted until mid-July; late plantings avoid the ravages of the Mexican Bean Beetle
- Broccoli - direct seed into a well-prepared nursery bed, and then transplant throughout the garden when seedlings are 4–6 weeks old
- Cabbage - same as broccoli; however, varieties over 90 days to maturity may not reach full maturity if

planted in July

- Chinese Cabbage - same as broccoli
- Cauliflower - same as broccoli
- Corn - plant only varieties such as Hookers or Triple Play that mature in 60–70 days.
- Cucumber - the longest maturing varieties require 75 days
- Chicory - leaves can be harvested in 60–70 days, or roots can be harvested in 100 or more days
- Okra - loves the heat, and matures quickly
- Leeks - from transplants
- Radicchio - same as chicory
- Rutabaga - a cold-hardy root that requires a fairly long, cool season for best results
- Summer Squash - great for quickly filling in empty spots in a mid-summer garden

Last Planting: Late July–Early August

- Carrot - varieties requiring 80–100 days to reach full maturity, eg. Kurota Chantenay, Japanese Imperial Long, Scarlet Keeper, and St. Valery, may not reach full size if planted at this time
- Chard - can be planted even later but yields will decline
- Collard - same as broccoli above
- Kale - same as broccoli
- Pea - a narrow planting window of opportunity for producing a fall crop

Last Planting: Mid–Late August

- Beet - if grown with protection such as a cloche or hoop house, can be planted well into the fall season
- Beetberry - vigorous cool-season re-seeder produces tasty spinach-like leaves and mildly sweet berries
- Broccoli Raab - same as broccoli above
- Endive - wait until the end of August as soil temperatures begin cooling, and keep soil moist for best germination results
- Lettuce - plant every three weeks throughout the summer for continual harvests; can be planted in September but yields decline significantly
- Mustard - sow in nursery bed and then transplant throughout the garden
- Orach - germinates in warm soils but thrives in cool weather
- Purslane - can be planted all summer when soil temperatures are warm
- Spinach - planting at this time produces tasty greens in October
- Turnip - fall roots are extra sweet

Last Planting: Early–Mid September

- Arugula - versatile, quick green that will re-seed and emerge early the following spring
 - Cress - rapid-growing green that can be planted throughout the winter if grown under cloches or a hoop house
 - Huazontle - tasty, vigorous green related to lambsquarter (Chenopod family) that also produces nutritious seeds if planted earlier
 - Komatsuna - quick-maturing Asian green that can be planted in nursery bed and transplanted like other brassicas (broccoli, kale, etc.)
 - Onion - in climates with minimum winter temperatures above 10° F (Zone 8 and warmer), short–mid day length-adapted varieties such as Riverside and Valencia can be planted throughout the southern U.S; long day length-adapted varieties such as Siskiyou Sweet can be planted in western Oregon and Washington
 - Radish - quick-growing roots have milder flavor in cool soils
- Spinach - planting at this time produces small plants in the fall that go dormant during the winter and resume

growing in early spring; harvest begins in late March, assuring continual production throughout the spring

Most of the common summer annual flowers that require warm soil temperatures for germination can still be planted until the end of June. When planted late, however, the bloom season is limited to the last few weeks before the fall frosts. These species would include Amaranth, Celosia, Coreopsis, Cosmos, Daisies, Marigolds, Morning Glories, Strawflowers, Sunflowers, and Zinnias.

In a climate where the minimum winter temperatures are above 0° F (Zone 7 or warmer), many annual flowers that are particularly cold-hardy may be planted during the last month of summer (August 20–September 20). Some species, notably Larkspur, Bachelor Buttons, and Nigella, will even overwinter in Zone 5. These plants will begin growing during the fall, stop growing during the winter, and resume growth the following spring as soil temperatures rise. It is recommended to cover the young plants with straw or leaf mulch during the winter, although this may be unnecessary if winter conditions are mild.

The most reliable and well-known flower species that can be planted during late summer for early blooms during the subsequent spring include Bachelor Buttons, Calendula, Flax, Larkspur, Nigella, Snapdragon (actually a biennial or short-term perennial in very mild-winter regions), and Sweet Pea. Other species that may overwinter successfully if conditions are favorable, although not as reliably as the previously-listed species include Alyssum, Agrostemma, Borage, Cleome, Lavatera, and Scabiosa.

There are also a few annual or biennial herbs that are quite winter-hardy and can be late-summer planted and will survive the winter in regions in Zone 7 or warmer. These herbs include Cilantro, Dill, Fennel, and Parsley. It is worth trying these in colder climates too, especially if you have protected microclimates in your garden. A south-facing wall or even a boulder to hold the sun's warmth can make a difference.

Another opportunity for summer planting involves most of the perennial flowers. These plants are typically started in greenhouses during the winter. Those of us without a greenhouse, however, can prepare a nursery bed in our garden specifically for direct seeding of perennials during the summer. It is important to keep the bed free of weeds, as most perennials are very slow growing and are not competitive with fast-growing annual weeds. Be sure that your nursery bed has adequate irrigation and has at least average fertility. Plant your perennial seed at least ten weeks before the first fall frost to allow for the plants to become established before the onset of winter. The following summer, when the plants are one year old, it will be time to move these plants from the nursery bed to their permanent location in the garden. The most common perennial flower species that would be suitable for this type of propagation would include Anthemis, Bergamot, Campanula, Columbine, Shasta Daisy, Delphinium, Echinacea (requires 60–90 day cold stratification for germination), Foxglove, Gaillardia, Hollyhock (actually a biennial), Lobelia, Penstemon, Pinks (Dianthus), Evening Primrose, Rudbeckia, Salvia (many species), Snapdragon, and Yarrow (Achillea).

Planting seeds throughout the summer means that we can enjoy a bountiful harvest for a much longer time, but it also is significant in other ways. As gardeners, we are often limited for space, so it is important to maximize every square foot of available soil area. In essence we are trying to capture the greatest amount of solar energy possible in the space available to us. The best way to do this is to have 100% coverage of your garden's surface area at all times. From the information above, it should be clear that there are many plants that continue to grow and thrive throughout the summer and fall and early spring seasons. By growing different species together, no soil surface is left bare. This maximizes soil cover, intensifies soil biological activity and above-ground insect activity, and increases overall plant yields. Of course, it is essential to maintain fertility in such an intensive system, so keep that compost pile going!

The following are examples of crops growing together simultaneously for at least part of their life cycle:

- Sowing buckwheat between tomato plants keeps weeds suppressed, adds carbon to the soil, and improves soil structure. The buckwheat can be mowed with a Kama (hand sickle) before it competes with the tomatoes and left as mulch. This technique also works well with squashes and cucumbers, which have lots of bare soil around them as they develop. If you use floating row cover to control pests, the buckwheat can actually lift the row cover off the plants. Remove the row cover when the squash flowers and again, cut the buckwheat and leave as a mulch.
- Transplanting lettuce into a stand of broccoli (or other brassicas such as kale or cauliflower) maximizes available garden space of two species that have different plant architectures but similar growing requirements. The lettuce is harvested as the brassica plants fill in, having acted as a living mulch to suppress weeds and hold soil moisture. The brassica plants also provide a little protection for the lettuce as it develops.
- Planting radishes and carrots together allows for an early harvest of radishes followed by a later carrot harvest. The radishes also help to mark the slower germinating carrot rows so an early cultivation can be done before the carrots emerge.

There are many more examples of inter-planting for maximum production. Quick-growing plants such as radish, arugula, or cress can be sown into already-established beds of tomato, pepper, corn, or beans. Plants that are easily transplanted such as brassicas, greens, or basil can be planted into open spots throughout the garden to insure that no space is wasted. The primary limitation is the availability of water. If water is available, the only limitation is your own imagination!

The tradition of planting everything on Memorial Day and then calling the garden planted is really a myth. The far more ancient traditions of gardening cultures, such as China's, follow a sequential planting much like that outlined above. Many Asian vegetables, for example, are bred to mature very quickly, and often do better when planted later in the season. In a society where arable land is scarce, gardening all year round is more than just an efficient system. It means that the people have enough to eat. So keep on sowing for a bountiful, beautiful garden, and an extended harvest of the finest food available, organically grown in your own backyard.

Steve Peters
 Seeds of Change Product Development Manager

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**ROOTED IN HISTORY:
 EXAMINING THE TRADITION OF LOCAL AGRICULTURE AT
 THE SEEDS OF CHANGE RESEARCH FARM AND GARDENS
 BY EVAN SNOW**

http://www.seedsofchange.com/enewsletter/issue_68/farmhistory.asp

The Seeds of Change Research Farm and Gardens are located in Estaca, New Mexico about four miles north of San Juan Pueblo. We get our water from the mighty Rio Grande and an acequia, or irrigation canal, that is rumored to be the oldest in the area, which would make it the oldest in the country. (An acequia is a canal that diverts water off of a river and brings it within reach of land that is being cultivated. Individual farmers take water from the acequia and apply it to their crops using different methods; the most common is to divert the water into a network of smaller ditches that allow farmers to flood their fields most efficiently.) There is a rich history here and you don't have to go far to find evidence of it. San Juan Pueblo is right down the road and there are petroglyphs scattered throughout the hills next to the farm. It is not unusual to find pottery shards in the fields while weeding.

There is evidence that indigenous people grew food in this area long before the first Spanish settlers arrived

in 1598 with Juan de Oñate, “the Last Conquistador.” Oñate arrived with 28 families and established a settlement just across the Rio Grande from San Juan Pueblo. The Spaniards brought with them their own farming techniques along with livestock and introduced acequias to the area. One of the families that came with Oñate carried the name Lopez. Juan Lopez was given a tract of land by Sebastian Martin Serrano, a prominent figure among the Spanish immigrants. This land included the few acres which are now the Seeds of Change Farm.

Our network of irrigation ditches was constructed in the 1880’s and land here was used to raise alfalfa for livestock. When Ernesto Lopez inherited the farm from his father in the 1920’s he built the house that the farm interns now live in. Ernesto married Maria S. de Lopez who came from Mexico. They raised alfalfa, pigs, vegetables, and many fruit trees, some of which we still enjoy today. After they divorced, Maria stayed here at Rancho de Lopez and kept the farm beautiful and productive. She was also the principal of a local school for many years. She hired local help to keep her farm and gardens operational including one of our own, Joe Martinez. Joe has lived in this area his whole life and as a young man he helped Maria with farm chores. Then about ten years ago Joe returned to this farm and is now part of the foundation of the Seeds of Change Farm. (Martinez) He is also the source for much of this history and we thank him for his willingness to share his wisdom.

When Maria passed away, her sister, who still lived in Mexico, inherited the farm and sold it to the Shapiros who eventually brought Seeds of Change here. The old wooden ranch gate is still here and from it hangs a faded wooden sign that reads Rancho de Lopez. A few yards up the road there is a new, black metal gate with a sign that reads Seeds of Change. If you visit our farm you will mostly meet young Anglo-Americans with a variety of backgrounds who often come from across the country to work here and learn about organic agriculture. We bring with us enthusiasm and a hunger for knowledge. As we work on this land and dig our hands in this dirt it is important that we understand a little about the history of this area and the people who dug their hands in this dirt centuries before we ever laid eyes on it. Northern New Mexico is home to a very unique group of indigenous people who we can learn much from.

Ancient Pueblo People

There are nineteen Pueblos scattered across the northern part of the piece of land we call New Mexico. Pueblo is the Spanish word for the compact towns or villages characterized by adobe or stone structures whose inhabitants are the descendants of a people who have survived in the Southwest for at least 10,000 years. They maintain much of their traditional culture despite strong pressures from non-native peoples. Most of the Pueblos are located near the Rio Grande and its tributaries and all of the Pueblos share strong ties to farming in their everyday and religious lives. Pueblo people have been successful farmers in an arid region for more than 2,000 years. Their unique way of irrigating land, and their well-adapted planting and seed saving techniques have helped to create strong farming communities that have held onto their traditional ways (Cordell).

In recent centuries, one of the defining characteristics of life in New Mexico has been the mixing of indigenous and non-native cultures. In 1540 Francisco Vasquez de Coronado, a Spanish explorer and military commander, first visited the Rio Grande Pueblos. The first Spanish Colonial capital was created at San Gabriel del Yunge in 1598, just across the Rio Grande from San Juan Pueblo. In 1610 the capital was moved to Santa Fe. Because the Spanish capital was located in Santa Fe, Rio Grande Pueblos were more directly influenced by Spanish culture in comparison to the Hopi Indians of Arizona.

Due to the tenacity of the Pueblo people, the Spanish mission system was never totally successful in New Mexico. Despite this, many of the modern Pueblo religious ceremonies incorporate elements of Christianity, which exist beside native beliefs and practices. Early pressure on the Pueblo people concerning their religious beliefs by the invading Spaniards led to a revolt in 1680. The Spanish were kept out of the area until 1696, and when they returned they were forced to be more accepting of the Pueblo lifestyle and religious beliefs. The Pueblos do integrate some Spanish words into their day-to-day speech but only formal native language is used in ceremonies. The Pueblos each have their own unique feast days and perform pre-European dances, intended in part to

honor their patron saint. This approach to an influential outside culture is referred to as compartmentalization. While the Pueblos assimilate certain Christian and Spanish practices into their lives, they keep them separate from their traditional practices. The Pueblos have adopted certain Spanish foods and historically they even fought with the Spaniards against nomadic invaders. Despite this, the Pueblos maintained strong communities and it was the Spaniards who often adapted to the native way of life, rather than vice versa (Cordell).

Traditional Pueblo Agriculture

The Pueblo people have been successful farmers for centuries in an area of difficult climatic conditions. Their success is due to many factors, among them: using well-adapted planting techniques and crops, advanced irrigation techniques, the successful transmission of knowledge from generation to generation, and skills in creating pottery for storing and cooking food and storing seed. Corn was brought to the southwest from Mesoamerica around 1,500 BCE and has become central to Pueblo life and agriculture. The development of corn varieties that are better adapted to the cooler and drier climate of New Mexico and the Southwest was essential to the success of ancient Pueblo people. By not selecting seed based on size and by making sure to preserve the unique traits of each variety, the Pueblos were able to maintain high biodiversity and mitigate the risk of crop failure. In a harsh and varying climate such as the Southwest there is no advantage in selecting seed based on average conditions.

The attitude of the Pueblo people is to be thankful for all the corn they grow. Their use of multiple planting locations and times helped reduce the risk of crop failure. Corn was often planted in clusters atop low earth mounds, with each mound containing several plants and the mounds placed several yards apart. Using this method allowed the outer plants to protect the inner ones, isolated pest and disease problems, reduced competition for moisture, and facilitated easy crop rotation. Pueblo farmers would carefully select field locations, looking for deep soils to retain moisture, north- and east-facing slopes to reduce exposure to the intense sun, natural flood plains for easy irrigation, and even planted in sand dunes allowing the sand to act as mulch (Cordell).

Irrigation is essential to dryland farming and Pueblo farmers have used it in different forms throughout their agricultural history. Floodwater farming was the earliest and easiest technique that the Pueblos used. This could mean simply planting in a natural floodplain or diverting runoff water to a specific area. The ancestors of the Pueblo people, the Anasazi, used check dams to create beds with good soil that would catch and hold water. By strategically placing rocks along intermittent streams they could slow the flow of water, allow silt and organic matter to build up and then have a plantable bed. Canal systems came along later and provided a more secure water source, allowing for farmers to spend more time in other endeavors. Pueblo farmers dug networks of ditches, referred to as acequias, which would divert river water to their farmland and allow them to flood irrigate on a regular schedule. A dependable and substantial water source gave the Pueblo people more time to develop other crafts, expand their dwellings, and create more advanced religious systems (Vlasich).

Farmers handed down their knowledge of soils, drainage conditions, and climatic patterns from one generation to the next. The timing of moisture for their crops was critical and Pueblo farmers used different techniques to establish calendars to work by. Observing the migration of birds, changes in air temperature, and the color of foliage in the mountains all gave them clues about when to plant and harvest. They calculated more accurately the solstices, equinoxes, and phases of the moon by observing the rising and setting of the sun in relation to known landmarks (Cordell).

Clay pottery was introduced to Pueblo peoples around 300–400 CE. The incorporation of pottery into Pueblo life facilitated a more sedentary lifestyle. With the skills to create vessels for cooking food, storing food, and storing seed, the Pueblo people now had more free time and were able to advance their culture and grow more food to sustain more people. Archaeologists use the remains of the varying types of pottery created by the native peoples to classify them into different groups and distinguish unique time periods within the history of southwestern indigenous peoples (Cordell).

Modern Pueblo Agriculture

Modern times have seen a drastic decline in small-scale subsistence farming across the United States and Pueblo agriculture has been no exception to that trend. The struggle for Pueblo people to hold onto their traditional agricultural ways has been one of both internal and external issues. Lack of land, water, and interest, have all contributed to the decline in production from Pueblo farmland. Most of the original Pueblo land, especially land with any potential resources, was taken from the Pueblos before the Pueblo people were recognized as American citizens in 1924. The land that each Pueblo still has is held collectively by the Pueblo while the rights to use the land are inherited by each generation of Pueblo people. This has led to a system of small, widely scattered land holdings that makes for large effort and small return on small-scale farming endeavors. Much of their water has been taken from them, as rights of individual non-native property owners often take precedent over the indigenous rights of the Pueblo people according to current law. Government on the state and national level often fails to recognize these rights and ignores the water right laws and land treaties that already exist. Despite the decline in Pueblo agriculture, the Pueblo people still recognize the importance of farming and this can be seen in their religious ceremonies that still focus on the land and growing food (Vlasich).

As I explore the world of organic agriculture and rediscover a lifestyle of more sustainable practices, I feel that it is also valuable to explore my roots and connect with the land in such a way that I can begin to appreciate all that it has given to me and many people before me. Often we look at a piece of land like a blank canvas, but in most cases there have been many painters who have already left their brush strokes. There is, of course, always room for more painting. We seek permanence in agriculture and we strive to create that on our small farm in the Rio Grande Valley. As the Seeds of Change Research Farm and Gardens continues to evolve, we are trying to make sure that we stay rooted in the rich history of agriculture and diverse peoples that sustained themselves on this land for many centuries before we arrived.

Evan Snow
Seeds of Change Change Research Farm Intern

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FROM THE FIELD

BY JOEL REITEN

http://www.seedsofchange.com/enewsletter/issue_68/cropreport.asp

In more ways than one, Mother Nature has always had a pretty big hand in seed production. With cool, wet conditions that just don't seem to want to go away, this year's continued La Niña-influenced weather pattern is something the seed producers in the Northwest don't like to see. Normally, by the first of June all of the seed crops have been planted and are on their way. This year's spring has delayed planting and crop development here on the west coast. We will be putting the last of the tomato transplants in the ground this week, if we don't get the rain in the forecast! Despite the late start, most seed crops will be ok with harvest just a little later.

Our seed crops in most of the rest of the country are reported to be in good shape. A recent trip to California allowed me to check the carrot and onion seed crops there and a trip to Washington and Idaho late in June found me examining brassica, pea and bean crops. Richard Bernard, Seeds of Change Research Manager, accompa-

nied me to Washington to look at the spinach seed trials with the Organic Seed Alliance as well as some spinach stock seed production. Here in Oregon the radish seed crops are beginning to bolt and the squash crops are nearly all emerged. The tomatoes and broccoli, as well as a number of smaller flower seed crops, are all in as well. We are also doing some basil seed production here in Oregon and are looking at various levels of organic fertility and how fertility effects basil bolting and seed quality.

At this point pollinators seem to be in good shape. While many of our beekeepers have reported more hive loss over the winter, finding adequate numbers of hives for pollination doesn't seem to be a big problem. We will also be doing some work with leaf cutter bees for squash and sunflower pollination. The leafcutters haven't been affected by colony collapse disorder to the extent that honeybees have. In addition, we continue to work with insectary plantings to bring a wider diversity of beneficial insects and wild pollinators to the seed crops.

I'll talk to you next time about the Midwest crop report and some of our early California harvest.

Joel Reiten
Seed Production Manager

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FARM REPORT: JUNE 2008

BY KELLE CARTER

http://www.seedsofchange.com/enewsletter/issue_68/farmreport.asp

I don't think I need to mention that this is a busy time of year at the farm. The trees are budding out, the birds are singing and the weeds are waking from their winter hibernation. We are working hard to get all of our crops in the ground. The farm and gardens have been blessed with a wonderful crew of hard-working interns who are helping, with great enthusiasm, to make quick work of our planting schedule.

This summer we have two returning interns, Evan Snow and Lindsay Dozoretz, who are assisting in additional sustainability efforts. Both Lindsay and Evan have begun to create a biodiesel processor, which will make fuel for the tractor. Evan has increased his flock of chickens to include turkeys, and the birds seem to already have quite an appetite for grasshoppers. Other interns include Koby Jeschkeit-Hagen who is designing and building a composting toilet, Paul Simoneau who is working to help us achieve our goal of producing on-site compost, and Scott Chaput who is helping Lindsay and Evan in the production of biodiesel. Nellie Geraghty, who has recently finished her first year of study at the Maryland Institute of Art, will be helping to establish permanent works of art throughout our gardens and creating murals on some of our tool sheds. Marie Douglas, fresh from six months working on the UC Santa Cruz farm, will be landscaping the gardens around the intern house and helping to beautify the property with the end result being a public garden space available for tours.

In addition to new interns, we also had some unexpected guests this spring. A pair of great horned owls made a nest in one of our ancient cottonwood trees and successfully reared a pair of owlets. This was no easy accomplishment, due to the intense wind they had to endure in the early spring months. One morning, in the end of April, we came to work to find the baby owls shivering on the ground, their nest 30 feet above. The wind had blown them out of the nest during the night. We called the local wildlife center and they recommended that we keep them warm in a box and then call the electric company to come with one of their trucks with the extendable arms. Sure enough, they came and placed the pair back in the nest, and within 15 minutes an adult owl came swooping out of a nearby tree and fed the little ones. The young owls seem to be doing fine and we expect them to fly off and start their own nests soon.

Last month we began the first class in our series of three permaculture classes led by Scott Pittman with guest

lecturers. The class, taught by Scott and Toby Hemenway (see Toby's book *Gaia's Garden*), was a great success, gathering over 40 people from all over the country to our farm to learn techniques and practices of permaculture. The class focused on the principles of permaculture with an emphasis on how to really see and observe your plot of land before making any major changes. We also discussed the patterns found in nature and how they can be emulated in our designs to improve the land. It was interesting to also think about the patterns encountered in human interactions and how these need to be considered when looking at the whole picture that is a permaculture plan. Our next class in the series will be in July and will focus on gray water systems and water catchment—crucial to achieving sustainability in our high-desert environment. We are lucky to have “water-harvester” Brad Lancaster to assist Scott in the next class.

Well, back to field. Today we will plant 25 different types of lettuce and 6 varieties of okra. If you are in the area or planning a summer trip, we encourage everyone to visit our farm for our fall farm tours. The dates are August 10 and September 14—sign up soon, as space is limited.

Happy Planting,

Kelle Carter
Farm Field Coordinator

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PRODUCT HIGHLIGHTS

http://www.seedsofchange.com/enewsletter/issue_68/products.asp

Carrots

Sow soon for a bountiful winter storage crop.

http://www.seedsofchange.com/garden_center/browse_category.asp?category_id=380&UID=

Broccoli

Direct sow in early summer for fantastic fall harvests.

http://www.seedsofchange.com/garden_center/browse_category.asp?category_id=376&UID=

Gourmet Greens

Leafy greens are healthy and flavorful food, bursting with nutrition and rich in dietary fiber.

http://www.seedsofchange.com/garden_center/browse_category.asp?category_id=106&UID=

Hula Hoe

The most heavily used weeding tool on our research farm.

http://www.seedsofchange.com/garden_center/product_details.asp?item_no=S12394

Vegan Mix

Made with no animal by-products.

http://www.seedsofchange.com/garden_center/product_details.asp?item_no=S17195

Classic Salad Spinner

A few tugs on the cord and you've got a crisp fresh salad.

http://www.seedsofchange.com/garden_center/product_details.asp?item_no=S16678

Kama

The sharpest tool in the shed! Try this high-quality, lightweight, Japanese grass sickle called a Kama.

http://www.seedsofchange.com/garden_center/product_details.asp?item_no=S16213

Scythe

The scythe is the indispensable farm tool for cleaning up weeds, chopping down cover crops, or harvesting grains.

http://www.seedsofchange.com/garden_center/product_details.asp?item_no=PS17210

Composter

No Muss, No Fuss. Throw kitchen and yard waste in the top, out comes ready-made compost from the bottom.

http://www.seedsofchange.com/garden_center/product_details.asp?item_no=S12386

Compost Tea Maker

Add organic compost and a dash of Tea Catalyst, and a rich brew is obtained in 24 hours.

http://www.seedsofchange.com/garden_center/product_details.asp?item_no=PS17224

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RAINWATER HARVESTING FOR DRYLANDS AND BEYOND, VOL. 1-2

BY BRAD LANCASTER

VOL. 1, 183 PAGES, SOFTCOVER; VOL. 2, 419 PAGES, SOFTCOVER

BY SCOTT VLAUN

http://www.seedsofchange.com/enewsletter/issue_68/bookreview.asp

Nothing is more essential to life than water. It permeates our daily existence in a way that is rivaled only by the air we breathe. And while it is nearly as ubiquitous, our water, like our air, is easily tainted. Unlike the air we breathe, water is becoming a scarce commodity in many parts of the world, and the source of catastrophe in others, as the recent floods in the Midwest United States so poignantly spell out. Ironically, in many of the regions that experience the worst flooding, ancient aquifers are being pumped dry in an effort to produce cheap feed for livestock and bio-fuels for transportation.

As ever more land is cleared for agriculture and forests are denuded for cooking fuel in many parts of the world, our hydrologic cycle is in increasing disarray. Streams dry up, rivers fail to make it to the sea, lakeshores recede and aquifers fall. The water that is left to supply daily needs for a growing population is often tainted with agricultural runoff and industrial waste. Pure water has become the domain of a new industry that is working to privatize a substance that a generation ago was taken for granted as a basic human right. The ultimate irony of our growing water crisis is that pure water continues to fall from the sky, and it is often viewed as a nuisance rather than a precious resource.

With his three volume series entitled Rainwater Harvesting for Drylands and Beyond, Brad Lancaster is trying to change all this. In the first two volumes Lancaster lays out the “Guiding Principles” behind harvesting rainwater, and creating “Water Harvesting Earthworks” respectively. The forthcoming third volume will detail Roof Catchment and Cistern Systems. While Lancaster’s work is firmly rooted in the permaculture tradition established by Bill Mollison and David Holmgren, the detailed focus on water, practical solutions, and working examples sets his efforts apart. After a short immersion in these books, it becomes clear that this man has a passion for rain and its transformative power in the landscape.; he begins volume one by simply stating: “I love the rain.”

Rather than focus on high-tech, large-scale projects often favored by government agencies, Lancaster presents example after example or what can be done by homeowners and communities, with a few simple tools and little or no expense. True to his permaculture background, he implores us to “begin with long and thoughtful observation” before implementing a design, then to start small, maximize relationships between elements in the design

(stack functions) and continuously reassess our systems (the feedback loop).

While the books are geared towards those who live in drylands, there is much to learn for the rest of us who live in drought-prone areas (which, these days, is just about everyone) about how best to utilize water in our landscape and mitigate the flood-drought cycle, how to capture and store clean water, and how to recycle our grey-water to safe and productive use.

With over 600 combined pages and as many illustrations, these two volumes cover a wide range of concepts from the ethics of rainwater harvesting right on through to drought-tolerant species for multi-functional landscaping. Along the way he explores both historic and modern strategies from waffle gardens, terracing, rock mulches, and floodplain farming, to soil imprinting, French drains, infiltration basins, variations on mulching, permeable paving, cisterns and lots more. And he does it all with an amiable, easily comprehensible style that will appeal to anyone who wants to take control of their hydrological future.

Reviewed by Scott Vlaun,
Editor

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DEALING WITH HUMAN MANURE: A COMPOST TOILET PROJECT
BY KOBY JESCHKEIT-HAGEN

http://www.seedsofchange.com/enewsletter/issue_68/composttoilet.asp

How many times a day do you flush a conventional toilet? Even though many of us in areas where potable water is a precious commodity “let it mellow when it’s yellow,” we still need to flush a few times every day. For the average household, 30 gallons of potable water are used in the toilet system per day. Like most of us with “modern” plumbing, I could ignore my most basic daily output and keep flushing it down, but I’ve been having daytime nightmares as to the whereabouts of my own human manure (humanure). It could be running amuck in a huge sludge field or in an expensive chemically treated holding tank, inevitably contaminating the precious groundwater in my own community or my neighbor’s.

Therefore, in order to eliminate haunting myself and hundreds of unknown others with my humanure, as my summer intern project I have taken on the design and construction of an outdoor composting toilet for the daily use of visitors and Seeds of Change staff. This compost toilet would provide four obvious benefits:

- 1) It would be an outdoor restroom designed to handle the influx of humanure on the farm;
- 2) The toilet would be another on-site source for landscaping compost;
- 3) Furthermore, it would diminish the farm’s reliance on unsustainable septic and sludge treatment and holding facilities, and lastly;
- 4) It would serve as a demonstrative, functional, and educational example for other businesses, communities, and families to move toward a closed-loop system.

After researching composting toilet models, a two-story, passive solar, dry-composting toilet seems to be the best design option for a composting toilet at the farm. With gracious guidance and assistance on project design and implementation from the Permaculture Institute and Alfred van Bachmayr at World Hands Project, this project will be completed by the end of the summer. A project update with photographs of humanure’s new home will be in upcoming newsletters, so please stay tuned.

If you are interested in more information about composting toilet systems, please review the following helpful materials:

The Composting Toilet System Book, Version 1.2. David Del Porto and Carol Steinfeld. The Center for Eco-

logical Pollution Prevention (CEPP). 2000.

The Humanure Handbook: A Guide to Composting Human Manure. Joseph Jenkins. Chelsea Green Publishing Company. 2005

The Toilet Papers, Sim Van der Ryn. Chelsea Green Publishing Company. 1999.

Koby Jeschkeit-Hagen
Seeds of Change Change Research Farm Intern

NEWS & VIEWS

http://www.seedsofchange.com/enewsletter/issue_68/news.asp

Growing Food and Justice for All - First Annual Gathering

Dates: September 19-21, 2008

Location: Milwaukee, Wisconsin

www.growingpower.org

This comprehensive network views dismantling racism as a core principal which brings together social change agents from diverse sectors working to bring about new, healthy and sustainable food systems and supporting and building multicultural leadership in impoverished communities throughout the world. The vision for this initiative is to establish a powerful network of individuals, organizations and community-based entities all working toward a food-secure and just world.

This gathering will include:

- Intensive anti-racism trainings for individuals and organizations interested in becoming trainers
- Workshops and facilitated discussions on social justice, community food systems, dismantling racism 101
- Affinity sessions offered by GFJI members
- Networking and discussions
- Committee meetings and GFJI strategy sessions
- Tours to the Black Holocaust museum, Growing Power and other Milwaukee area community food system projects
- Delicious, local and culturally appropriate food
- Variety of lodging options, that are low cost including local home stays
- And much more to be planned!

United Nations Visits New York City Farms

In New York City, the non-profit Just Food is working to establish a just and sustainable food system. The City Farms project is one of the group's efforts at achieving that goal, and works with the city's community gardeners to increase the production, marketing, and distribution of produce to provide local food security. For the past four years, Just Food has been training groups from the Americorps VISTA (Volunteers in Service to America) program to combat poverty through community self-reliance.

The positive impact resulting from this synergistic partnership was recently on display to visiting UN delegates. VISTA's Shari Rose participated in the tour of Bed-Stuy Farm (one of more than thirty urban farms and gardens participating in the City Farms project) given to Kenyan UN Delegates, where she shared the value of compan-

ion planting. The visitors came as part of a tour of Brooklyn agricultural sites for delegates to the UN Commission on Sustainable Development (CSD), which recently gathered in New York.

The CSD is responsible for effective follow up on decisions reached at the 1992 United Nations Conference on Environment and Development, widely known as the Earth Summit. The group meets annually in New York in two-year cycles, with each cycle addressing different themes of sustainability, including energy, water, and sanitation. 2008 is the first of a two-year cycle focusing on agriculture and land. Food, by extension, has also been a major subject.

For more information, visit www.justfood.org and www.un.org.

Germany Bans Pesticides to Prevent Bee Deaths

In late May, the German Federal Office of Consumer Protection and Food Safety announced a ban on several pesticides implicated in the massive deaths of honeybees in the southern state of Baden Württemberg.

The ban affects eight neonicotinoid pesticides used in rapeseed and corn production that are alleged to be highly toxic to insects even at very low concentrations. This class of pesticides mimics the natural effects of nicotine and works as a neurotoxin to insects, causing paralysis that leads to death. Tests on dead bees from the affected region showed a buildup of the pesticide clothianidin (produced by Bayer Crop Science and manufactured under the trade names Poncho and Prosper) in 99 percent of the animals. The poison had been applied as a seed treatment, and according to Walter Haefeker, president of the European Professional Beekeepers Association, “Beekeepers in the region started finding piles of dead bees at the entrance of hives in early May, right around the time corn seeding takes place.”

The link between poison and bee death was so obvious that it prompted Germany’s federal agricultural research agency, the Julius Kuehn Institute, to issue a press release with the statement, “It can unequivocally be concluded that a poisoning of the bees is due to the rub-off of the pesticide ingredient clothianidin from the corn seeds.”

Bayer Crop Science attributes the deaths to an application error, blaming a seed company that neglected to use a substance to bind the pesticide to the treated seed, causing airborne dispersal of the chemical.

Across the Atlantic, Bayer faces a lawsuit from North Dakota beekeepers who blame the corporation for the death of thousands of bee colonies in 1995, when imidacloprid (trade named Gaucho), perhaps the most widely used neonicotinoid pesticide, was applied to the local rapeseed crop. In 1999 France banned Gaucho for use on sunflowers following the death of one third of the nation’s bees following the widespread use of the chemical, and has subsequently banned its use on sweetcorn and rejected Bayer’s application for clothianidin.

Joseph Cummins, a scientist for the Institute of Science in Society (ISIS), a non-profit group directed at “providing critical and accessible scientific information to the public and to promoting social accountability and ecological sustainability in science” (according to the group’s website), has pointed to the ability of neonicotinoid pesticides to be damaging even when introduced to bees at sub-lethal levels. If the animals don’t die, the poison impairs the ability to navigate to the hive, and compromises immune systems, making bees susceptible to parasitic fungi and other disease agents implicated in Colony Collapse Disorder.

For more information, visit www.i-sis.org

Permaculture Events with Bill Mollison

Permaculture luminary Bill Mollison, founder of The Permaculture Institute and veteran designer, teacher, and writer, will step forward to lead two courses later this year. The chance to attend a Mollison-taught course is a rare and valuable experience, given that he retired from a heavy teaching and traveling schedule some years ago.

The first, a Permaculture Design Course, will find Mollison joining forces with Geoff Lawton, founding director of the Permaculture Research Institute, and Greg Knibbs, founding director of International Permaculture Services, for a two-week class in Melbourne, Australia, from September 22nd to October 4th, 2008.

The second is a course of Permaculture Design for Islands and Shorelines, and calls upon Mollison's considerable experience with seaside communities, from his birthplace of Tasmania to Hawaii, the Sechelles, the Canaries, and Palau. The class will take place in Bocas Del Toro, Panama, from July 16–19, 2008. Heavy emphasis will be placed upon tropical and sub-tropical climates, and topics will include:

- Energy Systems
- Water handling
- Padi culture
- Sealing of sands and corals
- Palm Polyculture
- Appropriate Building Strategies for the tropics
- Aquaculture
- Lagoon Culture
- Mariculture

For more information on both courses visit www.tagari.com.

To read our two part interview with Bill Mollison, see eNewsletter #25 and eNewsletter #26.

Switzerland Extends Ban on Genetically Modified Plants to 2012

The Swiss government recently voted to extend its embargo on genetically modified (GM) plants to 2012. The moratorium originated in 2005 and had been set to expire in November 2010, but the country's Federal Council has postponed that date to allow time for a national research program to assess the benefits and risks posed by GM crops. Research will address safety concerns and the possible coexistences of GM, conventional, and organic crops. The program's researchers have been active since the introduction of the ban, and expect to conclude their studies in mid-2012.

To read a longer report, [click here](#).

USDA Eliminates Pesticide Reporting Program

The National Agricultural Statistics Service (NASS) has provided information on national pesticide use for years, but the program was drastically reduced in 2007, and it was announced on May 21st that the program will now be eliminated by the USDA, who cites budget cuts as the reason for the discontinuation.

Public interest groups are joining with industry organizations in expressing concern over the move. The Secretary of Agriculture, Ed Schafer, has received letters signed from the Natural Resources Defense Council, the Organic Center, World Wildlife Fund, the American Soybean Association, and Syngenta Crop Protection, Inc.

The NASS data has been relied upon by public interest groups who monitor the use and safety of pesticides as one of the only reliable and searchable databases of its kind. Agriculture industry and commodity organizations have depended upon the reporting data to safeguard them from claims about the use of specific pesticide, as well as see whether certain pest issues exist within a specified crop.

The Organic Consumers Association has mounted a campaign to deliver letters of concern and opposition to the Secretary of Agriculture and members of Congress. To participate, [click here](#).

To read more about the issue, [click here](#).

Housing Market Crash Brings Silver Lining of Urban Agriculture to Detroit

In 2005, the non-profit group Urban Farming was born to fight hunger in cities by turning unused land into farms and gardens. They now claim over 50 gardens in cities from coast to coast, as well as on the islands of Jamaica and Hawaii, and the support of many large sponsors such as Starbucks, Home Depot, the National Wildlife Fund, and the NBA.

In their home city of Detroit, where the mortgage crisis has resulted in record numbers of foreclosures, the group has mounted a pilot program to use abandoned house lots for growing fruits and vegetables to provide for the disadvantaged. The city will provide the water, and Urban Farming volunteers will provide the labor to prepare the soil, plant the seeds, and cultivate the produce. The gardens are open to the public, and all are welcome to gather the food that they need. Unharvested produce is donated to local food banks.

Apart from the benefit of food production, the program also offers the benefits of reduced urban blight, and community building. Gail Carr is a city manager for Detroit, and has seen the effect that Urban Farming's efforts have had upon neighborhoods: "People are coming out of their homes who wouldn't come out under other circumstances because they didn't think there was still a community or a neighbor or a friendly person nearby."

The pilot program is being monitored in the hopes of expanding the success to other locations in Michigan's Wayne County, where Detroit is located. Taja Seville, the founder of Urban Farming, already has plans to bring this manner of program to several other cities this year.

To read more about Urban Farming, [click here](#).

To listen to National Public Radio's recent coverage of this story, [click here](#).

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