NOP Issues Strict Pasteur Rule

On February 12 the USDA released new rules for the National Organic Program (NOP) requiring that dairy cows and other ruminants be out on pasture for the entire growing season, but for not less than 120 days. It also requires that the animals receive at least 30% of their feed, or dry matter intake (DMI), from pasturing. In addition, organic livestock will be required to have access to the outdoors year-round with the exception of temporary confinement due to mitigating and documentable environmental or health considerations.

The 120-day/30% DMI benchmarks were negotiated reference points agreed-upon by organic community stakeholders and arrived at after a series of meetings and dialogues nationwide, over much of the last half dozen years. The rules were also a carefully crafted consensus aimed at ensuring that legitimate organic dairy operations could truly provide meaningful pasture for their herds across the wide range of climatic zones in the U.S. It is estimated that the rule will impact upwards of 2000 organic dairy farmers.

“I am delighted to know that the process of rule change that will ensure that organic livestock will consume a significant amount of pasture during the grazing season is coming to a successful conclusion”, said Kathie Arnold, an organic dairy producer in Truxton, NY who has a 130 cow herd in partnership with her husband and his brother. Arnold, a respected leader in the organic dairy community, has been intimately involved in the stakeholder dialogue for the past six years and was the point person for collating comments from farmers around the country that were submitted to the USDA as the consensus agreement—now largely adopted in the USDA regulations.

“We are delighted by the new rules,” said Mark Kastel, Senior Farm Policy Analyst at the Wisconsin-based Cornucopia Institute. “The organic community has been calling for strong regulations and its enforcement for much of the past decade. Cheap organic milk flowing from the illegitimate factory farms has created a surplus that is crushing ethical family farm producers.”

The issue has been a lightning rod for controversy in the organic community. At least five times during the last decade, the National Organic Standards Board—a key USDA advisory panel made-up of industry stakeholders—passed guidance or recommended regulatory changes clarifying the requirement that dairy cows and other ruminants must be allowed to exhibit their native behavior and consume a meaningful amount of their feed from grazing on pastures.

“I am confident that the new rule, along with the commitment to rigorous enforcement by certifiers, will put an end to these abuses and restore fairness to the organic dairy sector,” said Kevin Engelbert, a dairy farmer from Nichols, NY who milks 100 cows. “Consumers will be able to purchase organic dairy products with confidence, knowing that regardless of the label, the animals who produced the milk were on pasture, as nature intended,” Engelbert added.


Sally Fallon, as well as the father of the Cuban organic agricultural movement, Fernando Funes.

As the mother of two children, and a small grass fed dairy manager, I had read Sally Fallon’s book, “Nourishing Traditions” and really enjoyed its basic premise. Good, healthy food makes good healthy people. My kids were relatively healthy from the get go. As was my family, and most of my friends. As such, I was always amazed by the stories about the many positive effects drinking that milk had on my milk customers, especially those that suffered from chronic illnesses or allergies. To hear that the simple act of drinking something real, alive and full of good fats had made such a difference to people who were very sick was revelatory.

The NOFA summer conference is blessed, once again, to have journalist, chef, nutrition researcher, homemaker and community activist Sally Fallon Morell as our keynote speaker, and as a workshop presenter too. Sally is the co-author, along with Mary Enig, Ph.D. of the cookbook, Nourishing Traditions. This well-researched, thought-provoking guide to traditional foods contains a startling message: animal fats and cholesterol are not villains but vital factors in the diet, necessary for normal health considerations.

USDA Scraps NAIS

Faced with stiff resistance from ranchers and farmers, the USDA has decided to scrap the National Animal Identification System, a national program intended to identify and track livestock in the event of an animal disease outbreak. In abandoning the program officials said they would start over in trying to devise a livestock tracing program that could win widespread support from the industry. The officials said that it would be left to the states to devise many aspects of a new system, including requirements for identifying livestock. New federal rules will be developed but the officials said they would apply only to animals being moved in interstate commerce, such as cattle raised in one state being transported to a slaughterhouse in another state.

NAIS quickly drew the ire of many farmers and ranchers objecting to the cost of identification equipment and the extra work in having to report their animals’ movements. Others said that it was intrusive and that the federal government would use it to pry into their lives and finances. The old system received $142 million in federal financing, but gained the participation of only 40 percent of the nation’s livestock producers, according to a report by the Congressional Research Service.

“It was just overwhelming in the country that people didn’t like it, and I think they took that feedback to heart,” said Mary Kay Thatcher, public policy director of the American Farm Bureau Federation. source: NY Times, Feb. 5, 2010

by Carol Lake

Plans are well underway for the 36th Annual NOFA Summer Conference, held this year from August 13-15, 2010 on the UMass Campus, in Amherst, MA. Our Keynote Speakers this year include Nourishing Traditions author and community activist Sally Fallon, as well as the father of the Cuban organic agricultural movement, Fernando Funes.

Two Revolutionary Leaders to Speak at NOFA Summer Conference

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Inside This Issue

Features
Food Safety Regs and Farmers 10
Domestic Fair Trade Ass. Progress Report 43
Agric. Justice Project Progress Report 44

Supplement on Alternative Organic Animal Feeds

Why Pasteurea Livestock? 11
Why Replace Soy? 13
Making Your Own Poultry Feeds 15
Forages for Swine 19
Feed the Flock from Homestead Resources 21
Organic Chickens in Japan 26
Hog Production Alternatives 27
What Can Replace Soy in Organic Feeds? 29
Sprouting to Enhance Poultry Feeds 30
Black Soldier Fly, White Magic 31
How to Culture Mealworms 35
Whey-Fed Pigs: Lard as a Health Food! 37

Departments
Letters to the Editor 2
Editorial 2
NOFA Exchange 6
News Notes 6
Book Reviews 39
NOFA Contact People 46
NOFA Membership 47
Calendar 47
Letters to the Editor

To the editor,
Hi, it’s hard to believe that you take ads for organic yogurt and have article on Nutrient-dense foods in the same issue. I’ve not said anything till now, because the Nutrient-dense article is so right that the organic yogurt ad looks so out-of-place. The organic milk has such a high load of bacteria that regular pasteurization can’t handle it, so they ultra-pasteurize it, which means HIGHER THAN MICROWAVE TEMPS!

Peace, Lily Robbins, Stonington, CT

Dear Lily,

Thanks for your feedback, and glad you liked the nutrient dense articles. As for bacteria and organic milk, I know of no evidence that organic milk has any more bacteria in it than conventional milk. The reason Organic Valley milk has been “ultra-pasteurized” (which means it is exposed for a very short time to a temperature twice as high as normal pasteurization) is to extend shelf life, not because of a higher level of bacteria. Neither process kills all germs, but ultra-pasteurization kills more, so that the milk, when kept cool, will be drinkable for a much longer time. (Of course it probably kills some pretty viable ones and a subsection of the milk, which people are seeking.)

The reason Organic Valley requires this is that historically its milk has not moved through the store as quickly as conventional milk, waiting longer for the occasional organic buyer. That is changing now with increased interest in organic milk, and I was told recently by an Organic Valley employee that they are considering dropping ultra-pasteurization because their milk moves off the shelf faster now, and there are so many people upset by the process.

-- Jack Kittredge

Alternative Organic Animal Feed

by Jack Kittredge

Many of us in the business of raising animals organically in the Northeast are looking for a better way. The movement for local food has been a tremendous boon to us, bringing us regular customers and loyal supporters who travel considerable distances to find food not raised in a food factory. Their dollars and enthusiasm have meant a renaissance of economy among organic and sustainable farmers. But their questions and concerns have also alerted us to a number of issues some of us perhaps have not been taking seriously enough.

There is a lot of interest, for instance, in grass-fed beef and dairy among these customers. While there are lots of excellent grass-fed operations in the Northeast, for some of us that is particularly difficult. Especially for those near cities, the cost of land is so high that devoting it to hayfields and pasture, rather than vegetable crops, bedding plants, and other high return ventures, is not realistic.

Another case in point is those among us who raise pork and poultry. Although these animals certainly benefit from being raised on pasture, it is difficult for them to reach market weight without supplemental nutrients that would be used to purpose we supply them with high quality organic feed. But the most practical organic feeds include corn for energy and soy for protein. These are not usually raised in the northeast, so we are importing thousands of pounds of feed into the region in order to supply a market for local food. Not perhaps what our buyers are expecting?

Even worse, many of our customers are now concerned about the human health concerns of excessive soy in their meat, milk, and eggs. Are there adequate supplies of alternative high protein feeds available to us at a price our customers can afford? What alterations in our operations are necessary to change to these feeds?

Julie and I are among the pork and poultry raisers mulling over these issues. We pastured our chickens and turkeys their entire lives, but also make available to them substantial quantities of certified organic feed – primarily composed of corn and soy. We have made phone calls to our feed dealer, put pressure up the line to get suppliers to develop soy-free feeds, are looking at what we can produce on our limited land base that would provide suitable protein for our animals, and are scouting local sources that would eliminate the need for long haul trucking.

We were in the infancy of getting commercial organic feeds available to organic farmers in the northeast back in the 1980s, and I guess we are in the infancy now of trying to move that business toward sourcing soy-free and local feeds produced in the northeast. The articles in this Special Supplement explore that issue. We look at why people are concerned about the issue of animal feed, what alternatives have been tried—both historically, before commercial grains were standard and now, by ingenious and thoughtful farmers—and what sources might be available to you on your own farm right now. There is certainly a lot more to be found out on this topic, and we hope to be involved in that discovery in the future. We thought it might be a good idea to open the discussion now, even though we don’t yet have all the answers. We hope you agree.

The Natural Farmer Needs You!
The Natural Farmer is a quarterly membership journal of the Northeast Organic Farming Association.

We plan a year in advance so those who want to write on a topic can have a lot of lead time. The next 3 issues will be:

Summer 2010: Small Farms & Gov’t Regulation

Fall 2010: Organic Farming and Money

Winter 2010-2011: Organic Farming and Co-ops

If you can help us on any of these topics, or have ideas for new ones, please get in touch. We need your help!

Moving or missed an issue? The Natural Farmer will not be forwarded by the post office, so you need to make sure your address is up-to-date if you move. Those who regularly send us a subscription need to make sure your address is up-to-date if you will not be forwarded by the post office, so you need to make sure your address is up-to-date. Those who regularly send us a subscription need to make sure your address is up-to-date if you will not be forwarded by the post office. If you have questions, or want to reserve display ads or sponsorships with payment (made out to “TNF” or Bob@nofamass.org and send address updates to your local NOFA chapter (listed at the end of each issue). Archive issues from Summer 1999 through Fall 2005 are available at http://www.library.umass.edu/spc/local/tnf/index.html. More recent issues are downloadable at www.nofa.org as pdf files.

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Establish Organic Farming Demo Farm in Nepal

After graduating in Farm Course from UW-Madison, WI I continued my agricultural career in Nepal. I started to educate farmers for organic farming. However, farmers do not know and believe how it works. So I wish to establish an Organic Farming Demo Farm under our NGO’s leadership as a Resource Center where national and International Farmers can visit, exchange and learn about Organic and Bio-Dynamic Farming Methods. Any interested ones please contact me <surya.nafisa@yahoo.com> for further discussions for joint venture efforts. Thanks, Surya Nath Adhikari, (Chairman) Rural Exchange & Sustainable Development Nepal

For Sale - Off the grid, solar home on 10.8 acres in Guilford, New York with well. 2 stall attached barn. 25’x25’ home consisting of 1st floor storage, 2nd floor kitchen with gas/wood Glenwood cookstove and living room with catalytic jotul stove, and 3rd floor loft. For details, contact Jean at 607-967-7845.

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New England Chapter of Community Acupuncture Network invites YOU to come into one of our convenient locations. We charge sliding fee scales ranging from $15 - $45.

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The Natural Farmer


Apprenticeship: The Hickories. Ridgefield, CT. Certified organic fruit and vegetable CSA farm looking for apprentices to learn all aspects of organic farm management and take on, in particular, responsibilities for animal husbandry. Housing included and $1000 a month stipend. May-October. Send resume to info@thehickories.org.

Internship at Millstone Farm - Full-Season (April to October): 2 positions available - Application Deadline: March 15, Half-Season (June to August): 1 position available – Application Deadline: April 15. Millstone Farm (Wilton, CT) is a working farm and a hub for outreach and education, where we strive to use best farm practices, encourage their implementation, and promote an awareness of their positive impact on local economies, the community and our quality of life. Through action-learning, interns will become fully immersed in the farm’s activities and gain a strong foundation in sustainable agriculture. For program details and application, please email us at: interns@millstonefarm.org.

D Acres of New Hampshire, a nonprofit organic farm and educational homestead committed to promoting a more sustainable future through farm-based workshops, internships, and public access is looking for a committed, hardworking person to be the Garden Coordinator. This individual will work with staff and interns under the direction of the farm manager in all facets of the garden operations for the 2010 growing season; including: planning out the garden, mapping, starting seeds, transplanting, planting out, irrigation, weeding, harvesting, seed saving, record keeping, and closing the gardens. For full job description please visit www.dacres.org, or contact us: 603-786-2366, info@dacres.org.

Wanted: Web Gurus, Videographers & Design Mavens. The Real Food Campaign (RFC) works to increase the nutrient density of food, at the intersection of environmentalism, sustainable/organic/biodynamic agriculture, and health. We ambitiously envision a web site to serve our mission. Please let us know if you are “in the know” when it comes to internet solutions and services and have time to help. Specific roles needed include: Website Development Team, Web Servant / Drupal Content Manager, Videographer / Audio Visual Editor, Graphic Designer, Social Networking Specialist. We are on shoestrings, so this is volunteer. Contact, delia@realfoodcampaign.org, http://www.RealFoodCampaign.org.

Wanted: Board Member and General Counsel. The Real Food Campaign (RFC) is working to increase the nutrient density of food, at the intersection of environmentalism, sustainable/organic/biodynamic agriculture, and health care. We seek a board member with legal expertise. Tasks include a legal audit, defining employee/volunteer government regulations, copyright and IP. This is a pro-bono position. If you are a farmer/gardener who also happens to be an attorney, your association with the RFC will be fun & educational. Send resume to: dan@realfoodcampaign.org with personal/ professional philosophy, and why the RFC is a fit for you. For more information: http://www.RealFoodCampaign.org.

Farm Jobs Available at Mighty Food Farm: Mighty Food Farm produces certified organic produce and eggs on 25 acres in Pownal, VT (South of Bennington). We market through CSA, farmers’ markets, and wholesale. We are seeking farmers with at least 1-2 years experience for CSA manager and transplant manager positions. Pay is $8-12/ hr, depending on experience and performance. We also have 4 summer crew positions available starting in May and continuing through October ($8/hr). Please visit mightyfoodfarm.com, or email farmers@mightyfoodfarm.com for more info.

Position available on organic farm for person with interest in vegetables, flowers, bees, chickens, etc. – planting, growing, harvesting and selling, Private quarters, food, stipend, possibly year round position. Contact George Hall, Simsbury, CT 06070, 860-280-4476, 860-658-9297, www.gorgehallfarm.com, georgehallfarm@att.net

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NEW TITLES

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Homeopathy in Organic Livestock Production
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Foundations of Natural Farming
Harold Willis. In this single volume, the author details the interconnections between soil, plants, minerals, and animals. He discusses the natural conditions of their environment and suggests how farmers can restore the balance to provide the necessary efficiency, effectiveness and profitability. This book does not stop at providing recipes of what farmers need to do it their better, but also passers along an understanding of the why of ecological agriculture. Sschaftoff, 134 pages.

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Weeds - Control Without Poisoning
Cherie Sorrels. Specifics on a hundred weeds, why they grow, what soil conditions spur them on or stop them, how to get rid of them, and how to control them when the weather prevents your plan. All cross-referenced by scientific and botanical names, and a glossary. Sschaftoff.

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How to Grow Top Quality Corn

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NATURAL SHEEP CARE
Pat Spinks. This comprehensive guide for all facets of sheep production provides essential information for both organic and conventional farmers, including: food and meal, lamb management, sheep management, treatment of health problems, breeds of sheep, wool, meat and production, feeding requirements, pasture management, minerals and vitamins, herbal, homeopathic and natural remedies, and more. Sschaftoff, 230 pages.

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India Halts Release of GM Eggplant

The Indian minister for the environment has imposed a six-month moratorium on the launch of a genetically modified variety of eggplant, known locally as brinjal, saying that further scientific research was needed before permission could be given for its commercial cultivation. Jairam Ramesh said he had taken note of “tremendous opposition” from state governments within India, broad public resistance and the lack of a scientific consensus. “This would be the first GM vegetable crop anywhere in the world so I have been very sensitive and I have arrived at this decision which is responsible to science and responsible to society,” he said.

The decision comes at the same time as the retired managing director of India operations for Monsanto, creator of the Bt eggplant, alleged that the company “used to fake scientific data” submitted to government regulatory agencies to get commercial approvals for its products in India. The former Monsanto boss said government regulatory agencies with which the company used to deal in the 1980s simply depended on data supplied by the company while giving approvals to herbicides. “The Central Insecticide Board was supposed to give these approvals based on the location and crop-specific data from India. But it simply accepted foreign data supplied by Monsanto. They did not even have a test tube to validate the data and, at times, the data itself was faked,” Jagadisan said.

Sustainable Agriculture Major Launched at Vermont’s Green Mountain College

Green Mountain College, in Poultney, VT, has announced the creation of a new Sustainable Agriculture & Food Production major. GMC will present the major concentration as part of its curricular offerings beginning in the fall 2010 semester. The major has been developed out of a highly successful sustainable agriculture concentration in the College’s environmental studies program. The new Sustainable Agriculture & Food Production major will be based at Cerridwen Farm, the College’s 22-acre working farm, with office and classroom space at the adjacent Solar Harvest Center. Students will learn about agriculture and food systems presented through the lenses of history, anthropology, the natural sciences, philosophy, business, economics, and art.

source: Green Mountain College press release, Feb. 4, 2010

USDA Offers In-Depth Look at Organic Farming

The nation’s organic farms and ranches have higher average sales and higher average production expenses than U.S. farms overall, according to survey data released by the U.S. Department of Agriculture’s National Agricultural Statistics Service. The survey counted 14,540 U.S. farms and ranches that were either USDA certified organic or were exempt from certification because their sales totaled less than $5,000. These operations comprised 4.1 million acres of land, of which 1.6 million acres were harvested cropland and 1.8 million acres were pasture or rangeland. While there were organic farms or ranches in all 50 states, nearly 20 percent of the operations were in California. California also led the nation in organic sales, with $1.15 billion – or 36 percent of all U.S. sales. Nationwide, 2008 organic sales totaled $3.16 billion, including $1.94 billion in crops sales and $1.22 billion in sales of livestock, poultry and their products. The nation’s certified and exempt organic farms had average sales and production expenses that were higher than those of U.S. farms overall. Organic operations had an average of $217,675 in sales, compared with $134,807 for all farms as reported in the 2007 Census of Agriculture. Production expenditures averaged $171,978 per organic farm, compared with the nationwide average of $109,359 for all farms. Most U.S. organic producers sold their products locally, with 44 percent of sales taking place less than 100 miles from the farm. Nearly 83 percent of organic sales were to wholesale channels, including processors, millers and packers. Just over 10 percent of sales were direct to retail operations, including supermarkets. Only 7 percent of sales were direct to consumers, via farm stands, farmers’ markets, community supported agriculture and other arrangements. More than 78 percent of respondents indicated they would like to grow or increase their organic production over the next five years.


USDA Organic joins with the Federation of Organic Dairy Farmers in support of regulatory changes to require that all dairy cows be raised organically from the last third of gestation.

www.HorizonOrganic.com

©2009 Horizon Organic  Photo by Keri Pickett

Horizon Organic joins with the Federation of Organic Dairy Farmers in support of regulatory changes to require that all dairy cows be raised organically from the last third of gestation.

Montagne Farm, St. Albans, Vermont

©2009 Horizon Organic  Photo by Keri Pickett

Horizon Organic® joins with the Federation of Organic Dairy Farmers in support of regulatory changes to require that all dairy cows be raised organically from the last third of gestation.
Court in New York invalidated EPA’s approval of shelves, says a December court order. A federal Circuit in 2008 and 2009. Now the Supreme Court has agreed to hear the case. Opponents claim that Monsanto’s genetically engineered seeds contaminate other crops. The Center for Food Safety filed a 2006 lawsuit on behalf of a coalition of non-profits and farmers who wanted to retain the choice to plant non-modified alfalfa. CFS won the case and two appeals by Monsanto filed the petition with the U.S. Supreme Court in October, arguing that the 2007 injunction by Judge Charles Breyer should not have been ordered without first holding an evidentiary hearing. As a result, the ban imposed unnecessary restrictions and costs on alfalfa hay and seed growers, Monsanto said. Prior to the injunction, Roundup Ready alfalfa was planted by 5,500 growers across 263,000 acres. Alfalfa is the fourth-largest crop grown in the U.S. with 23 million acres grown in 48 U.S. states annually, but about 1 percent of that is currently Roundup Ready. Opponents claim that Monsanto’s genetically engineered seeds contaminate other crops. The Center for Food Safety filed a 2006 lawsuit on behalf of a coalition of non-profits and farmers who wanted to retain the choice to plant non-modified alfalfa. CFS won the case and two appeals by Monsanto in the Court of Appeals for the Ninth Circuit in 2008 and 2009. Now the Supreme Court has agreed to hear the case. EPA Approved Pesticide Illegally A pesticide that could be dangerously toxic to America’s honey bees must be pulled from store shelves, says a December court order. A federal court in New York invalidated EPA’s approval of the pesticide spirotetratram (manufactured by Bayer CropScience under the trade names Movento and Ultor) and ordered the agency to reevaluate the chemical in compliance with the law. The court’s order goes into effect on January 15, 2010, and makes future sales of Movento illegal in the United States. In June 2008, EPA approved Movento for nationwide use on hundreds of different crops, including apples, pears, peaches, oranges, tomatoes, grapes, strawberries, almonds, and spinach. The approval process went forward without the advance notice and opportunity for public comment that is required by federal law and EPA’s own regulations. In addition, EPA failed to evaluate fully the potential damage to the nation’s already beleaguered bee populations or conduct the required analysis of the pesticide’s economic, environmental, and social costs. source: National Resource Defense Council press release, Dec. 29, 2009

New Study Confirms: Organic Food is Far Healthier Than Conventional Organic produce is nutritionally superior to so-called “conventional” produce, according to a comprehensive review conducted by researchers from the University of Aix-Marseille for the French food agency (AFSSA) and published in the journal Agronomy for Sustainable Development. “This critical literature review indicates that organic agriculture, as developed until now, has the potential to produce high-quality products with some relevant improvements in terms of anti-oxidant phytomicronutrients, nitrate accumulation in vegetables and toxic residue levels,” the researchers wrote. Recently the United Kingdom’s Food Standards Agency (FSA) reviewed existing research on the nutritional content of organic produce concluded that there was no difference, nutritionally, between organic and non-organic produce. The AFSSA review calls the FSA’s conclusions into question. After conducting an “up-to-date exhaustive and critical evaluation of the nutritional and sanitary quality of organic food,” French researchers concluded that organic produce is clearly nutritionally superior. “Organic produce contains more minerals, such as iron and magnesium, than non-organic produce, and higher levels of antioxidants such as phenols and salicylic acid. Organic plant food overall contain double the amount of phenolic compounds,” the researchers wrote. Animal foods produced organically contained significantly more polyunsaturated fat than non-organic animal products. In addition, organic vegetables contained 50 percent less nitrates than non-organic produce. No more than 6 percent of organic produce tested contained pesticide residue. source: http://www.naturalnews.com/027054_organic_food_nutrition.html

‘Lifeless’ Prion Proteins Are ‘Capable Of Evolution’ Scientists have shown for the first time that “lifeless” prion proteins, devoid of all genetic material, can evolve just like higher forms of life. The Scripps Research Institute says the prions can change to suit their environment and go on to develop drug resistance. Prions are associated with 20 different brain diseases in humans and animals. The scientists say their work suggests new approaches might be necessary to develop therapies for these diseases. In the study, published in the journal Science, the scientists transferred prion populations from brain cells to other cells in culture and observed that the prions that adapted to the new cellular environment out-competed their brain-adapted counterparts. When returned to the brain cells, the brain-adapted prions again took over the population. Charles Weissmann, head of Scripps Florida’s department of infectionology who led the study, said: “On the face of it, you have exactly the same process of mutation and adaptive change in prions as you see in viruses. This means that this pattern of Darwinian evolution appears to be universally active. In viruses, mutation is linked to changes in nucleic acid sequence that leads to resistance. Now, this adaptability has moved one level down- to prions and protein folding - and it’s clear that you do not need nucleic acid (DNA or RNA) for the process of evolution.” source: BBC News, Jan., 1, 2010, http://news.bbc.co.uk/2/hi/health/8435120.stm

Amending with Compost Plus

Generally, when growing in Fort Vee® or Fort Light®, plants will have ample nutrients for healthy growth until the media is filled with roots. At the point of root fill, plants should be up-potted or transplanted. When it is not feasible to up-pot, amend the media with Compost Plus®, our container and transplant booster mix. Apply 1/8 inch to the surface of the container by broadcasting, even through dense foliage, and water in. Compost Plus® should be added before complete root fill of the media. Do not wait to see evidence of stress in the plant before amending.
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Large Organic Livestock Operation Decertified by USDA

One of the largest organic cattle producers in the United States, Promiseland Livestock, LLC, was suspended from organic commerce, along with its owner and key employees, for four years on November 25, 2009. Promiseland, a multimillion dollar operation with facilities in Missouri and Nebraska, including over 13,000 acres of crop land, and managing 22,000 head of beef and dairy cattle, had been accused of multiple improprieties in formal legal complaints, including not feeding organic grain to cattle, selling fraudulent organic feed and “laundering” conventional cattle as organic.

Promiseland sold thousands of dairy cows to giant factory dairy farms owned by Dean Foods (Horizon Organic), Natural Prairie Dairy in Texas and Aurora Dairy based in Colorado. Aurora and Natural Prairie supply private-label, store-brand milk for Wal-Mart, Costco, Target and major supermarket chains such as HEB, Safeway and Harris Teeter. Promiseland’s improprieties were uncovered as a result of complaints filed by Cornucopia Institute, a Wisconsin organic watchdog group, into practices by Aurora Dairy. Now new documents have prompted Cornucopia to prepare additional legal complaints asking the USDA to focus attention on Quality Assurance International (QAI), the certifier for Promiseland when many of the alleged abuses took place. QAI also certifies portions of Aurora’s operation and Dean Foods’ corporate-owned industrial dairies.

At a recent industry meeting in Washington, D.C., Miles McEvoy, USDA Deputy Administrator and the new director of the National Organic Program, stated emphatically that we were now entering the “age of enforcement” at the NOP.

GM Growth Expands Pesticide Use

Genetically-engineered corn, soybeans, and cotton now account for the majority of acres planted to conventional varieties. The report projects that this trend will continue as a result of the rapid spread of glyphosate-resistant weeds. The full report is 69 pages and is accessible at the address below.


A1 and A2 Milk Concerns Cited

A recent book “Devil in the Milk: Illness, Health and The Politics of A1-A2 Milk” by Keith Woodford and Tom Cowan claims that a genetic mutation in cattle thousands of years in the past altered the beta-casein amino acid configuration of some cows, resulting in a change of proline to histidine at the 67th amino acid in the bovine beta casein amino acid chain. The effect was that whereas all cattle originally belonged to the “A2” milk group, some now belong to groups which may collectively be referred to as “A1”. A1 milk is more difficult to digest and has been linked to a higher incidence of heart disease and diabetes, and is of concern for those who suffer from leaky gut syndrome.

Although all breeds of cattle contain animals of some cows, resulting in a change of proline to histidine at the 67th amino acid in the bovine beta casein amino acid chain. The effect was that whereas all cattle originally belonged to the “A2” milk group, some now belong to groups which may collectively be referred to as “A1”. A1 milk is more difficult to digest and has been linked to a higher incidence of heart disease and diabetes, and is of concern for those who suffer from leaky gut syndrome.

Although all breeds of cattle contain animals with both A1 and A2 milk, some breeds have far more of one than the other, Guernsey cows, for instance, are heavily A2 producers, and Holsteins heavily A1. No one can tell which type a particular herd is, however, without genetic testing (about $100 to $125 per cow) and a herd can be switched from one type to the other in a few years by altering the beta-casein amino acid configuration.

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How Will Food Safety Regs Affect Farmers?

by Steve Gilman
NOFA-IC Policy Coordinator

There’s no question that food safety oversight in this country is badly broken and has long needed fixing. Oversight by the Food and Drug Administration (FDA) has been rendered toothless through decades of food industry-backed congressional funding cuts and the massive meat and grain sectors of the ag-economy have been shuttered off into agribusiness-friendly USDA jurisdiction. But when unrelenting outbreaks of contaminated meat, produce and processed foods regularly sicken some 76 million citizens a year, hospitalizing (and sometimes permanently incapacitating) 350,000 and killing 5,000 — clearly it’s time that food safety is fully addressed.

Pressure for legislation has been spearheaded by national consumer groups who periodically usher delegations of victims through the House and Senate office buildings. After 8 years of stifled activity during the G.W. Bush Administration there’s plenty of pent up demand for creating stringent regs and producing the funding to implement them. And in flurries of bipartisan activity (for once) it’s political suicide for legislators to vote against food safety. Pressure for legislation has been spearheaded by national consumer groups who periodically usher delegations of victims through the House and Senate office buildings. After 8 years of stifled activity during the G.W. Bush Administration there’s plenty of pent up demand for creating stringent regs and producing the funding to implement them. And in flurries of bipartisan activity (for once) it’s political suicide for legislators to vote against food safety.

Safe food is the bottom line in the marketplace and farmers well realize that no producer is exempt from the mandate of practicing food safety at every stage of production. There’s tremendous personal incentive for them to get it right. Many farm families are the preliminary eaters of their farm’s output, for example, and direct marketers are only as good as their last sale in face-to-face exchanges with their customers. Practices that are appropriate for giant industrialized operations who co-mingle and mass-process produce from multiple (including foreign) sources for nation-wide distribution have little in common with the small scale of family farmers. Yet a lot of the impending legislative and agency mandates are taking a one-size-fits-all approach that discounts risk and could impact small farmers’ very ability to stay in business.

At this writing at the end of January, 2010 the Senate’s Food Safety Modernization Act (S.510) has yet to go to the floor for a vote, although it could happen any time now. Using definitions and powers already slipped into law under the Bioterrorism Act of 2002, S.510 broadens FDA regulation on farms that minimally process crops during harvest and packing operations for sale to food coops, restaurants, grocery stores, schools or wholesale markets – legally redefining them as facilities. If S.510 goes through without our proposed amendments, farmers would also be subject to registration, onerous traceability requirements, expensive food safety plans, on farm FDA inspections and annual fees.

This is not at all a done deal at this point, however. Amendments are being prepared and alternative language modifying the impact on farmers is taking place behind the scenes. After the Senate votes, the legislation will go to a conference committee to resolve the differences with the House Bill HR 2749 that passed at the end of July ‘09 and this provides a further opportunity for input and modification. Once the final bill is passed by Congress and signed by the President – then the rule-making process begins – with further opportunities for public comment. Here too the “intent of Congress” colleagues that NSAC and NOC staffers managed to insert as backup language in the bills will determine how the actual final regulations are worded. And finally, this mega-billion dollar annual initiative will have to compete with everything else on the table for scarce congressional dollars – affecting the on-the-ground scope of inspection and regulation.

As the situation deepens, more badly needed allies are realizing the threat to family farm value-added production and on-farm processing operations. Our top heavy agricultural system resembles an upside down pyramid – with a very small number of farmers at the bottom supporting all us eaters stacked up top. And an even smaller subset of family farmers is the basis for all the hopes, dreams and intentions of our burgeoning alternative agriculture world as well. Without a vibrant and viable family-farm scale sector all the local, sustainable, organic, fair, nutrition, farm-to-school, food security, healthy food, slow food, farm to chef, Farms Markets, CSA, rural regeneration, land stewardship, etc. initiatives are left in the lurch.

Without careful consideration of the unintended side effects of this legislation it is entirely possible that Congress will create food safety rules that will strangle the movement toward eating healthy fresh local food, as well as shut down farms due to excessive costs of compliance or place a lid on their further growth and expansion into larger markets. Such impacts on farmers further affect their role as a primary driver of rural revitalization and rural economic development. And by not focusing their regulatory zeal on the riskiest industrial food sector, our antiquated food safety system stands to be modernized in name only.

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Pasture-raised hogs are happier and healthier than pigs on pasture. Grass-fed dairy products. Cattle raised on grass result in meat leaner too, by turning something we can't eat – grass – into something useful to us – meat and dairy products. Cattle raised on grass result in meat leaner and lower in calories, and higher in omega-3s and vitamin E, than grain-fed meat. Eggs and dairy are nutritionally deficient. They have higher levels of omega-6 fatty acids than products from animals raised with access to pasture and are lower in omega-3 fatty acids (the "good" fat), and Conjugated linoleic acid, or CLA (CLA's help to fight against cancer and cardiovascular disease).

Raising cattle on pasture not only makes sense for humans too, but by turning something we can’t eat – grass – into something useful to us – meat and dairy products. Cattle raised on grass result in meat leaner and lower in calories, and higher in omega-3s and vitamin E, than grain-fed cattle. Grass-fed dairy products also have five times more CLA than their grain-fed counterparts.

Why Pasture Livestock?
by Jack Kittredge

Why are so many cattle raised on grain, then? The answer is that grain, being artificially cheap, makes money faster for the livestock owner. It takes longer for white clover, however, was so strong that they largely destroyed the stand during the adjustment period. As a result, white clover was dropped from the subsequent two-day grazing trial. When next turned loose, the pigs grazed the alfalfa but did not root it up to the extent they had done with the white clover. They showed very little interest in grazing the two grasses so long as the legumes were present.

The conclusion? When it is available, pigs show a clear preference for protein-rich foods like legumes. A variety of crops like turnips, kale and fodder beets are also excellent protein-rich food sources one can plant for pastured pigs. In addition to their value for pork, pigs also bring an extra benefit to the farm when raised on pasture. As Newman Turner, British farmer and author of “Fertility Farming” says about pigs:  "There is no quicker or more economical contributor to soil fertility. Crop roots or weeds, which are extremely difficult to eradicate on rough land by any other means, are dug up by the pigs to provide food and at the same time they clean the land more effectively than is possible with a machine."

His system for rotating pigs through several fields to provide both pork and crops is simple: “When the field is completely turned over and well cultivated by the pigs, they are moved on to start ‘ploughing’ another field, and the first field is leveled and a rough seed-bed prepared with the disc harrows.”

Kale is then broadcast over the field. Once the kale is up, the pigs are returned to the field: “The kale is grazed by the pigs at a young leafy stage and they clear the whole crop down to the ground, leaving at the most only small stumps. Then the disc harrows go in again. Once or twice over the field with disc harrows prepares a seed-bed ready for sowing wheat. On the poorest land, following this double dressing of pig manure, part of which has advanced in its decomposition, good crops of wheat have always been harvested.”

Forest Feeding of Pigs
Until World War II, foraging pigs in the forest in the summer was a common Southeastern practice. The park-like, oak savannas that covered the Piedmont and Appalachian region of the Southeast in the 19th and early 20th Century were largely created by pigs, which were then brought back to the farm in the winter to forage on remnant corn and other crop residues. The hardwood trees provided most crops for the pigs to fatten on, and protected the heat-
S P R I N G  2 0 1 0

200 pounds they can get more of their feed from the grass. I figure I get a 350 pounder on about the same feed as a commercial finisher gets his to 250 pounds. It’s in those last 50 to 100 pounds where your advantage lies.”

Joel favors Berkshires, Hampshires, Yorkshires and Durocs. Poland China’s get too fat and Tamworths won’t root, he says.

“Tamworths are great as a follower pig with cattle because they won’t root up the pasture, but this makes them useless for turning compost and clearing land. Also, just as with chickens and cattle, fresh grass is important. With pigs, it is the grass that creates the special flavor.”

Pastured Poultry

Chickens

Approximately 98% of the world’s eggs are now produced by caged hens. There has been a small recent move toward “cage-free” eggs, primarily on nutritional grounds, and those eggs typically sell for three-times what the caged ones do.

But whether eggs are from caged or cage-free hens, they taste the same and have the same nutritional profile. Michael Hamm, a professor at Michigan State University, said the only eggs from “pastured” hens with daily access to green grass. Free-ranged chickens without access to grass do not show any nutritional improvement over conventional eggs, cause pasturing hens on green grass produces eggs higher in healthy omega-3 fatty acids and vitamin E.

This, of course, was the way Newman Turner raised his birds, finding much of their own food in the humus and weeds of the fertile farm. But even this system has its snags, he says, because pigs are ground oriented and will ignore anything that is taller than 24 inches.

Joel’s oldest pig pastures have put forth a mixture of perennial grasses and crabgrass. He doesn’t know where the seed came from, and says the pig pastures are the only paddocks on the farm with perennial ryegrass. He grazes his pigs longer than most hog farmers.

“The unfair advantage of grazing pigs is that after 200 pounds they can get more of their feed from the grass. It’s in those last 50 to 100 pounds where your advantage lies.”

Virginia farmer Joel Salatin says that pigs are excellent at taking forest land on which trees have been recently cut and converting it directly to pasture:

“The successional sequence after logging is to quickly go to briars and brambles - not grass. The stamps and steep aspect prevent us using mowing to control this lush regrowth.”

He found that pigs love the roots of these early succession plants, however, and could largely clear cut-over land by gnawing tree roots and the bark of stumps and steep aspect prevent us using mowing to control this lush regrowth.”

“Heritage breeds grow half as fast, have a smaller body, are more expensive to buy and harder to clean for chickens. Turkeys are very mobile and this makes them good foragers. They are bred to walk and don’t get tired.”

Joel said turkeys in his area of Virginia were once walked 30 miles to market. On the farm they can be herded, similar to sheep, and taken to vineyards or orchards where they can be day-ranged to help keep harmful insects under control.

Unlike chickens, turkeys do not scratch holes in the pasture — which can create pasture weed problems. Also, if run at very low stocking rates, turkeys can get 100% of their diet from the pasture and the bugs it contains:

“I figure you could run 200 turkeys on 100 acres of pasture and not have to feed them anything.”

He said such a no-feed system would lend itself well to the Heritage turkey breeds:

“Heritage breeds grow half as fast, have a smaller body, are more expensive to buy and harder to clean due to their dark feathers. But they would do well as a totally bug-fed animal.”

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Why Replace Soy? (and How Phytoestrogens May be a Plot by Plants)

by Jack Kittredge

Soy is high in protein, relatively cheap, and grows well in the US. Why in the world would anyone raising animals look for alternatives to this wonderful legume?

Originating in China, soybeans have been consumed by humans for thousands of years. But they were not eaten as a primary food. They were used as a side dish to complement and flavor the main meal. In addition, because raw soy contains toxic compounds, the beans were not eaten directly. Instead, they were fermented into products like miso, tamari, tofu or tempeh.

These days most soybeans become ingredients in livestock feeds, with chicken feed containing the highest proportion (almost half of the beans processed for livestock feed end up as chicken feed). That’s because soybeans contain 38% protein, an essential nutrient for poultry and livestock.

But soybeans also contain compounds called phytoestrogens. These are chemicals that mimic the reproductive estrogen hormones. Estrogens themselves (especially estradiol-17ß) are critical to vertebrate animal reproduction and required for female reproductive physiology. Estrous itself (the state of a female being “in heat” or available for breeding) is critically dependent on the presence of estrogen.

Phytoestrogens have been linked with infertility in animals who eat them. They are synthesized in legumes such as soybeans, clover and alfalfa, as well as many grains. Their production is increased by plant stress as well as by fertilization with materials such as sewage sludge that contain estrogens or their precursors. Phytoestrogen production is greatest during rapid plant growth.

Soybeans, ready to harvest.

Foliar diseases and mineral deficiencies in the plant can also cause higher levels of phytoestrogens.

Four classes of phytoestrogens (and over 20 different compounds) have been identified. Alfalfa, for instance, produces coumestans. They suppress estrus and inhibit ovulation, and in heifers can result in premature mammary and genital development. Infertility induced by coumestans, however, is usually temporary and does not persist if animals are moved to non-estrogenic pasture.

Isoflavonoids, on the other hand, are produced by a variety of subterranean clover. In some cases up to 5% of the dry matter weight of the clover can contain these compounds. They can cause permanent infertility in sheep. The mechanism seems, according to some studies, to be interference with sperm transport and fertilization, and early embryonic death.

A third class, zearalenones, is produced by fungi and considered a mycotoxin.

Some phytoestrogens are extensively metabolized in the rumen, so their significance in forage for cattle and sheep depends on their metabolic fate. In some cases the compounds are enhanced and rapidly absorbed through the rumen wall, in other cases they are broken down and have a reduced effect.

Studies show that livestock and poultry fed plants containing phytoestrogens retain them in their meat and eggs (particularly the yolks of eggs). This raises the concern that feeding domestic animals soy-based fodder produces animal-based foods rich in an active form of phytoestrogens. Since soy is the human choice for animal feed, this gives it a clear avenue into our daily diets and the human consumption of soy estrogenic compounds.

Soy is a prevalent ingredient in almost all processed foods. It’s in fast foods, baby food, processed meat, breads, etc. Unless you are very conscious of everything you eat, it is easy to consume an unregulated amount of soy products every day.

Because soy is a prolific food allergen (among the top eight human food allergens), the FDA requires it to be listed clearly as an ingredient in processed foods. At this time, however, the FDA does not require meat raised on soy feeds to be disclosed. People highly allergic to soy are affected by this failure.

Even if you are not allergic to soy, some other findings may be important to you. Soy is not a complete protein (as commonly believed), lacking some important amino acids. Soy foods can cause deficiencies in calcium and vitamin D. Because soy increases levels of estrogen and decreases levels of testosterone, it has been related to simulating...
the growth of tumors, pre-mature sexual development in females, and delayed development in males.

And about that plot…

More than 300 different plants produce some level of phytoestrogenic compounds. Why is this phenomenon so widespread? What benefit do the plants get from producing compounds that interfere with animal reproduction?

Some scientists speculate that plants produce phytoestrogens because the plants directly benefit by reducing the numbers of the herbivores who are preying upon them. We have all heard of such direct plant defenses as sharp thorns, offensive odors and tastes, and even toxic compounds. But could plants be so subtle as to actually try to reduce the fertility of those grazing upon them?

Such a plan is supported by the fact that phytoestrogens primarily affect the fertility of females, not males. While reducing the fertility of males might have some benefit for plants, they can get far more bang for their metabolic buck by reducing that of females. For most herbivores, there are no instinctual constraints preventing fertilization of many females by one male. So even a few fertile males can keep a population strong, whereas every female rendered infertile results in a direct reduction in the next generation.

The take away lesson for animal raisers is to avoid feeds with a high percentage of estrogenic compounds. The best practical way to do this is to manage pastures as polycultures (much as nature does) so that there is a variety of grasses, legumes and other broad-leaf plants. Monocultures lead to the possibility of nutritional disease and adverse reactions, including susceptibility to phytoestrogen issues. And if you feed grains or other concentrated feeds, make sure that they are not heavy on the soy.

Some Plants Containing Estrogenic Compounds:

Alfalfa, Anise, Apple, Barley, Beet, Black tea, Cabbage, Carrots, Cherry, Coffee, Date palm, Fennel, Flax seed, French beans, Garlic, Grapefruit, Green beans, Green tea, Hollyhock, Hops, Kudzu root, Ladino clover, Liquorice, Marijuana, Oats, Orchard Grass, Palmetto Grass, Parsley, Peas, Plum, Pomegranate, Potato, Rape, Red beans, Red clover, Red wine, Rhubarb, Rice, Rye, Rape, Sage, Sesame, Sorghum, Soy beans, Soya sprouts, Strawberry, Strawberry clover, Subterranean clover, Sunflower, Tomato, Wheat, Willow
Making Your Own Poultry Feeds

by Harvey Ussery

First published in the Aug/Sep 2006 issue of Backyard Poultry Magazine

I would like to see some space dedicated to feeding poultry without using commercial feeds, that include the various mixtures and proportions that people use. I read often that people do it, the no one ever seems to be willing to share their formulas. I would love to get away from manufactured feed—grind my own flour to make my own bread, I roll my own oats, I never buy processed foods for our consumption—feeding my chickens manufactured feed goes against everything I believe in, but neither am I going to "experiment" with my birds. Guidelines to follow from someone who has been successful would certainly be a great help.

On Experimentation

I find it odd that Nan in Wisconsin is so willing to "experiment" with her own diet, but is unwilling to do so with that of her chickens. Against the assurances of most of the "expert" opinion in our homesteading and natural-living channels, convenience foods is the safest, most nutritious, and wholesome in the world, she has learned to distrust advice that enough to go over to the considerable trouble of grinding her own flour, making her own bread, and avoiding industrial foods. There is no more worthy "experiment" she could be doing, in my opinion, to further her health and that of her family. I wonder why she is reluctant to take the same approach with the feeding of her flock.

If Nan is appealing for a source of "expert" opinion from homesteaders making their own feeds, I must bow out. I have been making all my own feeds going on ten years, with results more than satisfactory to me, but cannot pretend to be an expert in the field of poultry nutrition, and indeed consider every one of my formulations a snapshot of a moving target—that is, an ongoing experiment. As a matter of fact, I have to interrupt my writing shortly to run out and make a 100-lb batch of feed, and I’ve been thinking, maybe with a dry summer coming on, I should change the ratio of . . .

The truth is, if you are feeding commercial feeds, you are taking part in the most radical feeding experiment of all, one designed to answer the question: Just how unnatural a feed can we get away with?

Reflections on my Grandmother’s Flock

The most revolutionary change in my own life over the last ten years, with results more than satisfactory to me, is that advice enough to go to the considerable trouble of grinding her own flour, making her own bread, and avoiding industrial foods. There is no more worthy "experiment" she could be doing, in my opinion, to further her health and that of her family. I wonder why she is reluctant to take the same approach with the feeding of her flock.

I am lucky to be within the delivery area of Lehmann’s (www.lehmans.com) in the Shenandoah Valley of central Virginia, and receive monthly deliveries of certified-organic feed grains and legumes, as well as supplements. I buy the greatest number of pounds of primary grains I can, with an eye toward the many eggs she is producing, and perhaps need little additional boost from us. I no longer feed grain to my flock, other than the occasional flax seed, or to what I would call "insurance."
that milk than those receiving a commercial probiotic. If you have access to high quality farm milk or its byproducts (skimmed milk, whey), by all means experiment with culturing it and offering it to your flock.

**Fish meal**
Dried, ground mnenaden, a species taken in quantity by commercial fishermen, but not valued as a human food species, so converted to a potent protein supplement (60% protein).

Most people I know who are making their own feeds do use fish meal—it’s hard to make fish that are high enough in protein without it (at least if you want to avoid highly refined/processed alternatives like pure lysine from corn)—especially for growing birds, whose protein needs are higher than for mature fowl. Also, eating fishmeal, like eating insects, boosts the Omega 3 content of egg yolk. However, I am increasingly uneasy over the question: How sustainable is turning countless thousands of tons of fish into feed supplements? Furthermore, though a potent source of protein as said, fishmeal is not a fresh, live food, so will never be as good a food as possible alternatives which the homesteader or small farmer is in a position to supply, especially in the warm season.

**Crab meal**
Dried, crushed shells from commercial processing of crab meat, a good source of protein (about 25% or so), and of needed minerals like calcium. Though a good source of selenium as well (an essential trace mineral in which many of the nation’s soils tend to be deficient), it should for that very reason be fed in modest amounts: Selenium is one of those vital minerals needed in trace amounts, which actually become toxic at greater concentrations. I limit crab meal to 1-1/2 lb per hundredweight of feed. [Kelp also boosts selenium, incidentally, both as feed supplement and as addition to soil.]

**Cultured yeast**
Supplements not only protein (18%) but a number of minerals and vitamins, especially B complex. It is particularly useful for waterfowl, whose needs for B vitamins, and especially niacin, are greater than for chickens. Contains live cell yeast cultures which become active in the gut. Together with digestive enzymes in the dried yeast, the live cultures enhance absorption.

**Flax seed**
Flax has become something of a buzz word because it boosts Omega 3 fatty acids in egg yolks (as does eating live animal foods such as earthworms and insects). In our modern diet we tend to get far too much Omega 6 in proportion to Omega 3, thus any way to get them into better balance is desirable. I only feed flax seed whole. Flax oil is highly perishable (i.e., goes stale/rancid readily when exposed to oxygen), so feeding flax meal is in my judgment not a good idea. It is important that the birds have free access to grit if you feed flax seeds, which are small and hard.

**Alfalfa meal**
I start with 100% alfalfa pellets (17% protein), the kind fed to rabbits and horses. The chickens resist eating the pellets whole, so I grind, along with the corn and peas. I include alfalfa only in the winter, when green forages are less available.

**Corn**
A high-energy feedstuff which I store whole and grind as needed. Peas

I no longer use any soybean in my feeds. I can’t get into a long discussion on the subject here, but there are schools of thought I am influenced by [if interested, check out http://www.westonaprice.org/soy/index.html to get you started] that find use of soy highly problematic, starting certainly with humans, emphatically for ruminants, though I am not as sure about avian species. Anyway, I haven’t fed any soybean since being able to substitute with what my supplier calls “field peas” *pisum arvense*, a relative of the garden pea, *pisum sativum*. Peas of the *Vigna* group such as cowpeas can also be used if you can get them in quantity. I store the peas whole until ready to make feed, then grind coarsely along with the corn.

**As for soybeans.**
At one time farmers grew many different legumes to feed livestock. Following the “soybean revolution,” however, soybeans are typically the only feed legume available in most areas. If you only have access to soybeans for your feeds, remember a few important points. Whole soybeans are the best option if you can get them, but make sure they are roasted. *Never feed raw soybeans to any livestock*—they contain growth-inhibiting factors which are a disaster for the animals who eat them. From commercial sources, the typical form of soy available is soybean meal as a byproduct of processing soy oil. Not only can such meals contain residues of hexane (a solvent used to extract the oil), but the high heat and pressure of the processing rancidifies whatever fats remain—that is, soybean meal is a stale feed. Finally, most soybean in the American market today is genetically modified, a fact deeply troubling to many thoughtful homesteaders.

**Wheat, oats, and barley**
The small grains I never grind—just weigh them out and stir in when I’m grinding and making the mix. If I could get other small grains I would use them as well—probably the greater the diversity of feed ingredients, the better. [Note regarding oats and barley: Do not feed at greater than 15% of the total diet, either individually or in combination.] During much of the year I hold the small grain portions out and sprout them prior to feeding.

**Oyster shell and grit**
Though not listed in my sample formulations, remember oysters’ needs for grit in the gizzard to grind their feed, and for oyster shell as an additional boost of calcium and other minerals needed for strong egg shells. When the birds are on pasture they usually get enough grit and mineral on their own. In the winter house, however, it is wise to offer them free choice.

**Technique**
For efficiency, I make a “premix” of the finer, more powdery ingredients, measuring it out in amounts sufficient for 25-lb batches and storing it until use. When ready to make feed, I grind (coarsely) the corn and peas, dump in the premix, and add the small grains whole (if I am not sprouting them). I mix thoroughly by hand, then feed immediately or store, for a few days only, in a covered bin.

**Sample formulations**
I cannot overemphasize that the following sample mixes are for illustrative purposes only. Feed formulation is a moving target for me, constantly subject to change, to experimentation—I figure that to “get it right,” a lifetime should suffice. If you are skilled in the use of electronic spreadsheets, you will find it trivial to do as I do—set up a series of spreadsheets which automatically calculate protein, fat, and carbohydrate values, cost, etc. as I plug in varying amounts of the base ingredients. My spreadsheet is set up on the basis of 100-lb lots, since it is easier to think of the ingredients as percentages. However, I make up my feed in 25-lb batches, since that is easier when mixing by hand. Thus the tables reflect both the amount of ingredients per hundredweight, and the amounts per batch.

The numbers following the ingredients in parentheses indicate the percent protein, and the total protein in each mix is noted. These figures are based on the best information I can find on the subject, and probably in many cases reflect averages in typical market feedstocks. Since I have access to feedstocks produced more organically, sustainably/ecologically than in dominant agricultural practice, my actual percentages are probably better than the tables indicate.

By emphasizing the percent protein in the tables, I do not mean to imply that the other major and minor nutrients (fats, carbohydrates, minerals, vitamins, enzymes) are not important—certainly they are. I have worked with complex formulae to determine the correct balance of the various nutrients, and discovered that—when making feeds from whole, natural ingredients as I largely do—the balances come out right if I simply peg a given formulation to the percent protein needed. If I were using a lot of processed and byproduct ingredients, of course, the calculation would become a good deal more complicated.

A further point about protein: My feeds would be considered short on protein by people who design poultry feeds. For example, the recommended percent protein for broiler chicks is 22%, I believe, and you will notice that my Starter Mix may be around 17.5%. I am not growing one of the souped-up, fast-growing hybrids such as the Cornish Cross, nor am I growing broilers for a market. Those who are would perhaps do well to increase the percentages of protein in my sample mixes. For traditional homestead breeds, however, I’m not sure it’s a good idea to “push” growing birds for maximum rate of growth. It may be that best long term health and reproductive success are achieved through a growth curve which is somewhat slower, but more balanced.

This is no Micky Mouse grinder—it will grind 25 lb of feed in a couple of minutes flat. I purchased it from Lehmann—the 1-1/2 hp electric motor I bought locally. I’ve made three to five tons of feed a year with it for years now.

**Table 1: Starter Mix – Protein 17.5%**

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<tr>
<th>Ingredient</th>
<th>Amount per 100 lb</th>
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<td>Grand Total:</td>
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Weeds in Crops & Forage Improvement
A Serious Issue
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References proudly provided!

The human being, who guides and directs the beginning, the course and the end of the natural growth process, is the strongest force of nature. His capacity is the final decisive factor.
Ehrenfried Pfeiffer

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Finally, it may surprise some poultry owners to know that my home-made feeds are actually more expensive than commercial feeds. I buy certified-organic ingredients, and pay a fee to have them delivered from almost two hours away. While I am willing to pay a premium price for superior ingredients, I hope the growing number of small producers, perhaps joining in cooperative markets, will gain access to less costly local feedstocks. Certainly it is wise to remember the old adage: You get what you pay for.


My father and I built the chute to channel the ground corn and peas into the catch basin (a 15-gallon plastic utility tub). This arrangement helps keep dust down during grinding. (A further refinement, not pictured: I also drape an old light blanket over the chute and catch basin to keep the dust enclosed.)

I built this feed bin, capacity about three-quarters of a ton, from scrap left over from a house addition. Three interior partitions provide four separate bins: wheat, corn, peas, and a mix of oats and barley. Note the sliding gates, which permit drawing off feedstocks from the bottom of the bin. I add new deliveries from the top, so am continuously rotating my stock.

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| Grind:        |                   |                  |
| Alfalfa pellets (.17) | 8.00 |                |
| Corn (9.0)     | 30.00             | 7.50             |
| Peas (22)      | 24.00             | 6.00             |
| Whole:        |                   |                  |
| Wheat (.15)   | 12.00             | 3.00             |
| Oats/Barley (.11) | 8.00          | 2.00             |
| Grand Total:  | 100.00            | 25.00            |

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| Grind:        |                   |                  |
| Corn (9.0)    | 32.00             | 8.00             |
| Peas (22)     | 24.00             | 6.00             |
| Whole:        |                   |                  |
| Wheat (.15)   | 16.00             | 4.00             |
| Oats/Barley (.11) | 8.00          | 2.00             |
| Grand Total:  | 100.00            | 25.00            |

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| Grind:        |                   |                  |
| Alfalfa pellets (.17) | 7.00 |                |
| Corn (9.0)     | 30.00             | 7.50             |
| Oats/Barley (.11) | 10.00            | 2.50             |
| Grand Total:  | 100.00            | 25.00            |

Finally, it may surprise some poultry owners to know that my home-made feeds are actually more expensive than commercial feeds. I buy certified-organic ingredients, and pay a fee to have them delivered from almost two hours away. While I am willing to pay a premium price for superior ingredients, I hope the growing number of small producers, perhaps joining in cooperative markets, will gain access to less costly local feedstocks. Certainly it is wise to remember the old adage: You get what you pay for.

Forages for Swine

by Howell N. Wheaton, Department of Agronomy, University of Missouri and John C. Rea, Department of Animal Sciences, University of Missouri

Use of good pasture containing alfalfa, ladino clover, and grass can lower sow feed costs, help maintain high level reproductive capacity of boars, and in many cases increase litter size as compared to confinement raising of hogs. Pasture was formerly an absolute essential for a successful swine operation. In recent years, growing of hogs in confinement has become a reality. But it is still possible to use large amounts of forage with the breeding herd.

Bred sows and gilts on legume pastures require much less supplemental protein and only about one-half as much grain as those in dry lots. An acre of good pasture should carry 8 to 10 sows. Forages selected for swine should be succulent and capable of high production, very palatable, high in protein and vitamins, and produce over a reasonably long growth period.

Pastures make possible a good swine sanitation and disease control program. After swine have grazed pasture for one season, use the pasture for cattle or harvest hay from it for two years before using it for hogs again.

A pig’s physical make-up does not lend itself to using great quantities of pasture or roughage like sheep and cattle. But a 400-pound sow can handle relatively large amounts. Good forage can also provide quality protein and certain vitamins and can reduce total feed requirements.

Research reports on feed savings for pigs on pasture vary considerably, depending on type of pasture, age of hogs, and management systems. Data indicate this will amount to 3 to 10 percent of the grain and as much as one-third of the protein needed for growing and finishing hogs. Pastures are recommended for the breeding herd especially. They provide exercise and finishing hogs. Pastures are recommended as much as one-third of the protein needed for growing and finishing hogs.

Disadvantages of pasture system

• More labor required for handling, feeding and watering.
• Possibly greater problems with internal parasites.
• More labor in harvesting.
• Possible decrease of crop land.
• May require slightly longer for hogs to reach market.
• Lack of environmental control in extreme weather.

Legumes

The legumes as a group have a higher protein, calcium and carotene content than grasses. They can furnish an adequate supply of most vitamins with the exception of vitamins D and B12.

Alfalfa, ladino, sweet clover, red clover and lespedeza are legumes that may be used for swine pasture. Alfalfa and ladino are probably the best of the group and where possible should furnish the basis of any perennial forage mixture for swine. Ladino clover will not produce as much forage per acre as will alfalfa, but it is somewhat superior in nutritive value. Where adapted, the use of the two together has increased yields and improved the nutritive value.

Annual lespedeza may also be used during the summer months with approximately the same results as alfalfa. However it must be faulted for its lower yield per acre, its shorter grazing season, and its need to reseed in the fall.

Perennial grasses such as orchardgrass, endophyte-free tall fescue, timothy and bromegrass, while not as high in quality as the legumes, should be used in mixtures with them. Mixtures of grass-legume have performed as well as legumes alone and have the advantages of increasing total yields, providing a superior soil, and reducing the risk of losing the legumes through heaving and stress kill.

Temporary pastures

Sudan grass, sorghum-Sudan crosses and small grains may also be used as hog pastures. But rape is the best annual crop in Missouri for swine. It contains around 28 percent protein on a dry matter basis, compared with 30 percent for alfalfa, and an acre will handle about 20 sows.

Stocking rates

Stocking rates will depend upon soil fertility, quality of pasture and time of year. Recommended pasture stocking rates are: Sows with litters 6-8 per acre Pig farm weaning to 100 pounds 15-30 per acre Pigs from 100 pounds to market 10-20 per acre Gestating sows 8-12 per acre

These recommendations assume the use of good quality legume pasture under conditions of adequate moisture.

Feeding recommendations on pasture

Gestating sows will usually maintain their body weight on excellent ladino-clover pasture with no additional feed. General recommendations on average to excellent pasture would be to provide around 2 pounds of grain daily for sows and 3 pounds for gilts on pasture, plus free-choice access to minerals and iodized salt during the first two-thirds of gestation. During lactation, 2 to 3 pounds of 15 percent protein ration per 100 pounds body weight is recommended. Growing-finishing hogs in most cases should be full-fed with around 20 growing-fattening pigs to the acre.

Herb management on pasture

It is important to have adequate water and shade for hogs on pasture. Studies show extremely high temperatures have an adverse effect on breeding herds, so it is important to provide adequate shade for them.

Pigs of widely varying weights should not be run together. Avoid having a range of weights that exceeds 20 percent above or below the average in the herd.

Rape

Rape is neither a grass nor a legume but belongs to the same plant family as cabbage.

Fertilizing: Rape requires a soil high in available calcium and responds to high levels of nitrogen. Fertilize with phosphate, potash and lime as for alfalfa and with nitrogen as for corn.

Seeding: Rape may be seeded with spring oats. Use a seeding rate of 5 to 6 pounds per acre. When the oats are drilled, the rape may be seeded through the grass seeding attachment or may be broadcast after the oats are seeded. Use a cultivator or harrow to cover the seed very lightly. Dwarf Essex is the best variety and seed is available.

Pasturing: Do not begin to pasture until rape has reached a height of 9 to 10 inches. With early seedings this should occur about 6 to 8 weeks after seeding.

Rape sometimes causes white hogs to sun scald. It is caused by the pigs grazing when the rape is wet and then getting exposed to hot sunshine. However, this is usually not serious if treated with crude oil or carbated petroleum, nor is its occurrence very frequent.

Silage for brood sows

Silage, either corn silage or high quality alfalfa-grass silage, is a practical way of using more forage in a hog program. However, it must be emphasized that the nutritional requirements of bred sows is very exacting and supplementation of the silage is essential. Both corn and alfalfa-grass silage must be supplemented with protein and energy, but if done properly, silage feeding may improve litter size and pig livability and save up to 25 percent in feed costs.

A swine producer would not build a silo just to feed brood sows, but if silage is available for cattle, using it for sows will produce excellent results.
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Now is the Time to Grow your Business at Natural Products Expo East
Feeding the Flock from the Homestead’s Own Resources

by Harvey Ussery

Sprouting

I’m going to include sprouting in this discussion even if the grains and legumes we sprout are purchased, since sprouting is a kind of “value added” feeding we can achieve by our own efforts. Sprouting grains boosts the protein, vitamin, and enzyme content (while decreasing carbohydrate). On balance it enhances the starting ingredients and boosts more thorough utilization of everything we are feeding.

There are several possible approaches to sprouting. I experimented with sprouting in trays, and allowing the sprouts to green up by exposure to sunlight. (I have also seen pictures of a setup used by dairy farmers in earlier times, a rack holding numerous trays of green sprouts which were fed to the cows when the sprouts reached 2-3 inches high.) I found working with trays too time consuming, so devised a bucket system instead. I cannot produce green sprouts in the buckets, but that is not a problem for me, since I have other sources of green forages. If you do not, you might experiment with sprouting to the green stage in trays. That method should work even in cold winters if the trays are brought inside at night.

Green forages

We do not think of chickens as grazers, but they actually make good use of fresh green forages as a small but important part of their total intake. In my winter greenhouse, I grow grain grasses (wheat, barley, oats, rye) and mixed crucifers (turnips, mustard, rape, etc.) as cut-and-come-again greens for the birds. If you do not have a greenhouse, you can still grow these cold-hardy species deep into the chill season. Indeed, cover crops planted to protect the soil (barley, oats, rye) and mixed crucifers (turnips, radish, rape, etc.) are excellent as cut greens for the birds.

A couple of excellent green feeds for the flock are dandelion and yellow dock (Rumex crispus). Though much maligned as “weeds,” both are palatable and highly nutritious to poultry, and they stay green deeper into the frost season than any other wild forages in my area. As long as I can get a spading fork into the ground, I dig these plants by the roots and throw them to the flock by the bucketful. The birds eat the tops down to the roots, then (in the case of dandelion, though not yellow dock) eat part of the root as well, after which the roots generally get buried in the deep litter by the scratching of the chickens. There the roots put out new growth (like Belgian endive, forced in a cellar)—when the chickens turn them up again, they have “second helpings.”

Two extremely useful plants I recommend to all homesteaders are comfrey and stinging nettle. In addition to myriad food (for both humans and plants), medicinal, and soil-building uses, both plants are excellent feed for poultry. Comfrey is amazingly productive, especially if fertilized heavily (and it will take any form of fertility you throw at it, including raw chicken manure). Protein content is high (higher than alfalfa, and can if well grown be as high as soybeans, dry weight basis). I cut and feed as needed, more at times in the season when the pasture is less generous. Chickens eat comfrey well. Geese love it.

I am in the process of greatly expanding my comfrey plantings. (It is an extraordinarily easy plant to propagate.) The next big “wave” of propagation will feature planting comfrey patches out on the pasture, where the birds will “graze” the comfrey themselves. I plan to keep the plantings tight, dense, and relatively small. They are incredibly tough plants, but if they seem to be suffering from over-grazing by the birds, I can protect the patches with temporary fencing.

Both comfrey and stinging nettle can be dried and fed as “hay.” My experiments with both have been challenging thus far—they are much more fragile than a grass hay. My next attempts with both will feature thorough drying, then stuffing into large burlap bags, in which the shattering into leaf meal will not be a problem. I will experiment with feeding straight, and with adding to ground feeds.

[It should be added that in recent years there has been some “scare talk” from official quarters about pyrrolizidine alkaloids found in comfrey. The alkaloids are indeed present, and are indeed toxic to the liver in massive, pure doses. However, my conclusion from research I have done is that there is no toxicity problem, acute or chronic, associated with consumption of whole comfrey, by either humans or livestock. (See Comfrey Report, by Lawrence D. Hills.) Whenever I slaughter fowl, I practice a form of divination I call “reading the livers.” As long as the livers of birds who have been eating comfrey remain healthy and free of abcesses, I will have no concerns about feeding comfrey.]
Here I have cut buckwheat which has matured its seed to feed the flock. Sometimes I put the flock on the buckwheat plot and allow them to self-harvest.

Grain substitutes

Of course, the homesteader can grow corn and conventional small grains as well as anything. Growing and storing them on a small scale can be labor-intensive, however. A labor-saving strategy with the small grains is to grow to maturity, turn the flock in to self-harvest the seed heads.

I grow amaranth and sunflowers, both for their beauty and for their support of beneficial insects, and continue to experiment with using the seed heads as poultry feed. The challenge with the sunflowers, I find, is catching them at the point at which the seeds have ripened, but before wild birds have stripped the heads. Heads can be cut and tied together in bunches, then hung from rafters under shelter for use in the winter. The same can be done with amaranth, an extremely nutritious (and high-protein) seed that was an important food source for the Aztecs. The seeds are extremely tiny, and it’s been hard to determine how well the birds utilize them when I just cut the heads and throw them to the flock. I plan experiments with threshing and feeding them straight to get a measure of how much the birds like them. I also plan to soak whole heads, which store well. (I store them in a “clamp,” a simple 24-inch hole in the ground protected by a sheet of plastic and a couple bales of straw.) I can use the heads as additional pollen source for beneficials, and to screen other crops needing shade, but I plan to crack the hulls of the surplus in my feed grinder, then feed the nutritious chestnuts to the birds.

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For the first time, I am experimenting with growing sorghum. I grow this extremely tall plant as an additional pollen source for beneficials, and to screen other crops needing shade, but I plan to harvest the seed heads, tie in bunches, and experiment with feeding (whole heads) in the winter.

Double duty cover crops

I use buckwheat and cowpeas as cover crops that are easy to start in the summer when many of the cool weather covers will not establish. Buckwheat is the “instant cover crop”—from seed to flower in as little as thirty days. Cowpeas are legumes, and set atmospheric nitrogen in the soil in forms plants can use. If you can leave these crops long enough to mature their seeds, they do double duty as cover crop and feed for the birds. Indeed, it’s possible to net the area with electroneet, and allow the flock to self-harvest the seeds while tilling in the cover crop. That’s a homestead version of “multi-tasking.”

Carbohydrate sources

Potatoes and sweet potatoes can be tremendously productive crops. In times of war, when people in England and other European countries had to grow more of their own foods, potatoes have satisfactorily replaced grain feeds, in whole or in part. When I harvest these crops, I save for the flock the smallest tubers and those badly damaged by the spading fork. In an economic crisis, potatoes would be one of the first alternatives to grain I would turn to. Ducks will make good use of potatoes, as well as chickens. (It is generally recommended that potatoes be lightly cooked before feeding to the flock.)

Pumpkins are usually easier to grow than other members of the cucurbit tribe. If you have the space for the big, sprawling vines, you can grow and easily store large numbers of pumpkins. To feed, just “bust ’em open” and let the flock have at them. The seeds are a good source of protein.

Mangels or fodder beets are also easy to grow, producing roots up to ten pounds or even more which store well. (I store them in a “clamp,” a simple 24-inch hole in the ground protected by a sheet of plastic and a couple bales of straw.) I feed one at a time, raw. In the winter house, the entertainment value is probably as high as the feed value—the chickens really get into pecking away at them. When one has been consumed, I throw in another.

Tree crops

We have had a big mulberry tree in the orchard for years, and the chickens have always loved the abundant dropped fruit. I have just planted two additional mulberry trees out on the pasture. The trees will provide shade for the flock, as well as large amounts of dropped fruits. (In earlier times, it was common for farmers to fatten both pigs and fowl from the windfall crops of mulberries.)

I have ordered three chestnut tree seedlings, which I will also be planting out on the pasture. Again, the trees will shade the birds, who should help control the chestnut weevil, both in the emergent phase in the spring, and when going to ground in the winter. (Multi-tasking again.) Any year that brings good crops should provide far more chestnuts than we can eat. I plan to crack the hulls of the surplus in my feed grinder, then feed the nutritious chestnuts to the birds.

Persimmons also make excellent feed for chickens—and for turkeys. At the moment I have three Asian persimmons (Diospyros kaki), and am not inclined to share their succulent fruit with the flocks. However, wild persimmons (D. virginiana) grow prolifically in my area, and I may encourage their growth in our bit of woods, and make the dropped fruit available to the chickens using electroneet fencing.

Many homesteaders know that in earlier times pigs were routinely fattened on crops of acorns wherever there were oak trees. J. Russell Smith points out in his classic Tree Crops that acorns can be used as feed for chickens and turkeys as well. He quotes a report from England during World War II of acorns being used to replace up to half of the feed ration for chickens. There are a number of large white oaks where we have had a big mulberry tree, and the chickens have always loved the abundant dropped fruit. I have just planted two additional mulberry trees out on the pasture. The trees will provide shade for the flock, as well as large amounts of dropped fruits. (In earlier times, it was common for farmers to fatten both pigs and fowl from the windfall crops of mulberries.)

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Another tremendously productive carbohydrate source is Jerusalem artichoke. This is a crop to be careful with, as it can easily get out of hand, and be difficult to eradicate. I recently read of a Vermont farmer who lets his large layer flock forage in big plantings of Jerusalem artichokes. The birds eat some of the foliage, and feed on the enlarged earthworm populations at the base of the plants. There was no mention of digging the tubers to feed the flock. Jerusalem artichoke tubers are good food for humans, however, and I expect they would be a good carbohydrate source for poultry as well. I plan experiments with feeding them, raw and cooked, when they are ready to harvest this fall.

Cowpeas are an excellent summer cover crop: They start well in the drier, warmer soil of summer; make a tight cover that cools the soil and suppresses weeds; and set nitrogen in the soil. They are a great crop to precede fall crops such as brassicas. Once they have matured their seeds, they may be cut and fed to the flock; or the birds can be released onto the cowpea patch to self-harvest.
my feed grinder just enough for the birds to pick out the contents.

Of course, any nuts are highly nutritious and can be used as food for fowl, to the extent they are not desired as human food. I am planting a number of grafted cultivars of nuts for our own use. However, there are several wild hickories and black walnuts on our property. I pick out a few nut meats for us, but the kernels are small and time-consuming to pick. I have found it easy, however, to gather them, place on a rock, smash with a hammer, and let the birds have at them.

And don’t forget the orchard as a source of food for the birds. Getting rid of dropped fruits is an essential part of orchard sanitation. Either pick them up and throw them to the flock, or simply give the birds access to the orchard and let them do clean-up. I couldn’t believe the amount of dropped and cull apples the geese polished off last year.

Alternative sources of protein

There are several sources of proteins and fats which many homesteaders can develop for their birds. If you are in an area of the country “blessed” with an abundance of Japanese beetles, you can collect them for poultry feed. I no longer use the beetle traps with sex lures, since a friend who studies water pollution observed that the pheremones used in the lures are possible sources of hormone pollution in the environment. I do accept trapped beetles by the bucket, hold the bucket under a cluster of beetles and shake. Once the beetles get wet, they do not fly. When I throw them to the flock, I set some aside for just-hatched chicks when I do not have excess eggs to feed routinely to the flock, I set some aside for just-hatched chicks to give them a good start. Feeding a little egg is especially beneficial for hatchlings that have come cracked or “just too gross” (chicken-with-diarrhea syndrome) to use. Such eggs can be fed to the flock for a protein boost. I hard-boil the eggs, then crush them by hand as I throw them to the birds. Even when I do not have excess eggs to feed routinely to the flock, I set some aside for just-hatched chicks to give them a good start. Feeding a little egg is especially beneficial for hatchlings that have come through the mail, always a stressful experience.

Last winter I did a successful experiment in live-food winter feeding which I plan to repeat. I don’t allow the winter flock out much onto the pasture, since they would quickly degrade the dormant sod. However, I kept a couple dozen chickens in one end of the greenhouse, and released them every day onto a heavily mulched area I was developing into a garden. The mulch, six to eight inches deep, kept the ground from freezing, resulting in active populations of animal life—earthworms, slugs, etc.—in addition to germinating seeds in the mulch hay—to which the chickens had access right through the winter.

I pulled this mangel in mid-season, long before it was full size. Mangels that weigh ten pounds are not unusual here, and that is nowhere near their top weight. I pulled this mangel in mid-season, long before it was full size. Mangels that weigh ten pounds are not unusual here, and that is nowhere near their top weight.

While also used to reduce the amount of pesticides, fungicides and fertilizers, Biplantol is a liquid formulation that can be applied independently and together with any chemical or biological agent in the user’s normal course of practice.

Biplantol is both a soil and plant amendment to support and activate the plant’s metabolism, the soil organisms and the beneficial fungi, which play an important role in the cycle of nature.

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Harvesting worms from the vermicomposting bins. I simply scoop out bedding (horse manure) that has been largely converted, but still contains large numbers of worms.

Earthworms may top the list as a bioconversion ally. I’ve installed five 4x8-ft. worm bins, dug sixteen inches into the ground, down the center of my greenhouse, filled with manure by the pickup load from a neighbor with horses. Not only do the bins furnish large quantities of worm castings (perhaps the most fertile of all soil amendments), but I “harvest” as well an abundance of earthworms to feed my poultry flocks. This live protein feed helps keep both the level and quality of egg production higher than ever before—even in parts of the winter when flock owners all around me report complete cessation of egg production in their flocks.

Truly intrepid readers—or those not easily “grossed out”—could experiment with cultivating the larval stage of house flies or carrion flies as part of their home feeding program. (It helps us contemplate the possibility if we think of them as “larvae” rather than “maggots,” doesn’t it?) Imagine “harvesting” a source of feed for your flock that is up to 50 percent protein, 20 percent fat, absolutely free—right out of thin air? Inspired by a “recipe” on the Journey to Forever site (http://journeytoforever.org/farm_poultry.html#flies), I based absolutely free—right out of thin air? Inspired by a “recipe” on the Journey to Forever site (http://journeytoforever.org/farm_poultry.html#flies), I based

Last year I began experimenting with a managed colony of black soldier fly grubs to convert “wastes” to live poultry feed (42 percent protein, 35 percent fat, dry weight). The much more aerobic nature of the feeding medium in a soldier grub colony makes harvesting “protein from thin air” with this ally a

In conclusion, the above ideas do not exhaust the possibilities we will discover if we learn to look at our homestead the way our chickens do—as an expanding, more pleasant, and safer, process. (See article on black soldier fly composting for the flock, a couple of times I had a problem with what the old-timers called “limberneck” (botulism poisoning). If you are interested in this option, please review my methods and cautions at http://themodernhomestead.us/article/Feeding-Chickens-Maggots.html before proceeding.

One option for feeding worms from the bins: Bedding at the “halfway point” is spread on the heavily mulched “winter feeding yard” out the north end of the greenhouse (which houses a flock of chickens in winter). The chickens eat the worms and worm eggs, in the process scratching the worm castings into the mulch, which retains their fertility for the coming garden season. Note that fresh grain grasses (wheat, oats, rye, etc.) from the greenhouse are also being fed—a rich source of vitamins and enzymes. for the flock, a couple of times I had a problem with what the old-timers called “limberneck” (botulism poisoning). If you are interested in this option, please review my methods and cautions at http://themodernhomestead.us/article/Feeding-Chickens-Maggots.html before proceeding.

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In conclusion, the above ideas do not exhaust the possibilities we will discover if we learn to look at our homestead the way our chickens do—as an expanding, constantly renewed smorgasbord, a gift we receive simply by cooperating with what Nature is so eager to do in this little bit of Eden.

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An Invitation to the Home Feeding Project

I try harder every year to make my mixed flock of poultry more independent of purchased feeds. I urge readers who share that goal to tell me about your own practices and experiments toward more independent home feeding, using the address below. Sometime this year, I will summarize in *Backyard Poultry* the best ideas that have come in.

For those willing to share, please note the following:

- **Start by reading an overview on this subject, “Feeding the Flock from the Homestead’s Own Resources,” in this issue.**
- **Send your input to feeding@themodernhomestead.us** (If you prefer snailmail: Harvey Ussery, P.O. Box 67, Hume VA 22639)
- **Some ideas are so obvious and commonly employed (“Feed table scraps to the chickens”) there is no need to mention them. Your unique twist on such widespread strategies may be useful, however. (“I've made an arrangement with a local diner to take their food wastes.”)**
- **It is as easy for us to grow seed crops like corn and small grains as for farmers, though harvesting, threshing, and storing such crops are likely to be obstacles. Are there ways to make such options more practical?**
- **If you do recommend growing specific crops to feed poultry, please specify type (e.g. single-head sunflowers with large seeds, or multi-headed types with smaller seeds) and/or varieties you have worked with.**
- **Remember to place your practices in context: species of fowl you are feeding, size of flock, management model, etc.**
- **If you have kept statistics that demonstrate the effectiveness of your practices, please include them.**
- **Remember that some bright ideas that failed to work out in practice may be worth sharing as well.**
- **Be sure to include your location and (if you know) your climate/plant hardiness zone.**

Thanks so much if you participate in this project.

~Harvey Ussery

www.themodernhomestead.us
When I visited Teikei (Japanese CSA) farms in Japan eight years ago, I noticed that all of the chickens were kept in large pens. The farmers I spoke to said they did not have enough land to allow their chickens to range freely or to use chicken tractors. Hayashi Shigunori, an organic farmer near Tokyo, told me that he provides domestic feed for his chickens because he fears that any corn or soybeans imported from the US might be GMO. In designing his ration, he looked to traditional Japanese practices using a mixture of sea products and grains like millet that grow better than corn in their wet conditions. The farmer who started the very first Teikei in the early 1970’s, Yoshinori Kaneko feeds his chickens a mix of ground barley, rice and wheat waste. At the Uozumi family farm to the north of Tokyo, Michio and Michiko feed their chickens a combination of wheat, oyster shells, sake waste and rice bran. Upon hearing the theme for this issue, I emailed Shinji Hashimoto, a Teikei group, Tukaishute, in Kyoto, is doing the same experiment. I expect a deep yellowish color in natural grown eggs and corn brings the deep color. The Teikei group, Tukaishute, in Kyoto, is doing the same experiment. I tasted one but those eggs are not satisfactory. Rice has fewer calories than corn, so a different recipe is necessary. I think it is a good alternative to corn and opens the chance to bring local feed production and consumption by livestock growers in the future. I also think governmental support will be necessary for success to fairly compete with international market pricing.”

This is Shinji’s recipe for bokashi, the traditional home made fertilizer Japanese organic farmers use: 94 K rice bran, 4 K chicken manure, 40 K oilseed cakes, 10K oyster shells, 300 cc molasses. 300 cc EM (Effective Microorganisms), 20 liters water by Elizabeth Henderson

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Shinji mixes all the ingredients in a vat, similar to one he used for chicken feed, then stores the mix in thick paper bags, with a plastic layer between the inner and outer layers of paper, for 2 – 3 weeks to allow fermentation. The final product smells like yeast.

growers in Japan rely for their feed on imported so-called GM free and Post Harvest Application (Pesticide) corn. There are some interesting experiments on a small scale growing rice for livestock feed. The climate in Japan is humid and it is difficult to grow corn which prefers dry weather. Of course, the area of cropland is also limited in small islands with many steep mountains. In the northern part of Japan, farmers have started growing a rice variety that grows faster and has a good harvest for livestock feed instead of using high flavor Koshibari rice, the most popular blend among Japanese customers. Rice has been grown regionally to feed local chicken and chicken dung has been recycled for fertilization. The only problems are its price and the color of the yolk. The price of a 10-egg packet has to be 800 yen while conventional eggs sell for only 100 yen meaning this egg price is 8 times higher. These egg have been sold at a special department store. The yolk is rather light yellow while many costumers expect a deep yellowish color in natural grown eggs and corn brings the deep color. The Teikei group, Tukaishute, in Kyoto, is doing the same experiment. I tasted one but those eggs are not satisfactory. Rice has fewer calories than corn, so a different recipe is necessary. I think it is a good alternative to corn and opens the chance to bring local feed production and consumption by livestock growers in the future. I also think governmental support will be necessary for success to fairly compete with international market pricing.”

**Organic Chickens in Japan**

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— Alan Mesman

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**The Mesman family (l-r) Alan, Vickie and Samantha.**

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MSCA: Before — 80-100,000     After — 70,000  
Somatic cell count (SCC) per 100,000  
We maintain our tank SCC down at 80-100,000 by spraying every fresh udder for 4 to 5 days.**

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Alternative Feeds

Conventional swine rations consist primarily of corn and soybean meal—corn for energy and soybean meal for protein. However, diversified farming makes a variety of other types of grains, crop residues, and forages that lack a ready market or are considered waste products. Pigs—being versatile omnivores—can eat a wide range of feeds, such as pasture grasses and other forage materials, as well as alternative energy and protein sources. The pig’s ability to digest fibrous materials increases as it matures. Since they do not have rumens, pigs digest fiber primarily in their large intestine through fermentation. Jim Van Der Pol—who goes through and direct-markets pork, chicken, and beef in Minnesota—saw this in his “The Pastured pig” series in Graze magazine:

Despite being single-stomached animals that often need some grain, hogs are wonderful pastures animals. They are durable and flexible. They do not Boston, founder on grain, or ingest hard, they eat grasses readily, even prefer them. If conditions get tough for the swine [grass-covered ground], they can be removed and switched immediately to a grain ration with no worries about digestive upset.

Fibrous feeds traditionally have not been used for nonruminants due to their documented de- pression of diet digestibility in pigs and poultry. However, some types of fiber and fiber sources do not exert such negative effects on nutritional digestibilities in older growing pigs and sows. Dietary fiber can have a positive effect on gut health, welfare, and reproductive performance of pigs. Hence, nutritionists are attempting to gain a more thorough understanding of dietary fiber in swine diets.

Pasture, Hogging Off, and Fibrous By-products

Colin Wilson, who farms with his father and brother Dan at Paullina, Iowa, has worked the bugs out of a well-managed pasture program, if vitamin and mineral supplements are provided. A 2003 paper presented at the Third National Symposium on Alternative Feeds for Livestock and Poultry held at Kansas City, Missouri states:

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Fencing the pasture is also important for the producer will not be able to drive the hogs through the gate when it is open.

In addition to legumes and grass pastures, nonlegume brassicas—turnips, rape, kale, fodder beets, and mangolds—are high in protein, highly digestible, and make an excellent pig pasture.

Another option is the practice of having pigs self-harvest the grain, otherwise known as “hoggging off” the crop. Some of the benefits of hoggging off are that harvesting costs are eliminated, crop residues and manure are left on the land, and parasite and disease problems may be reduced. Many different crops can be used with this practice, as long as there are also legumes or brassicas available. Some examples of grains that can be self-harvested by hogs are wheat, rye, oats, oat corn, Grohoma sorgum, Spanish peanuts, and popcorn. Such direct harvesting can sometimes turn a profit from even a low-yielding grain crop.

In pastures available to hogs, inspect for weeds that can be poisonous to them, including pigweed, Jimson weed, two-leaf cocklebur, young lambquarters, and nightshades. A couple of Web sites providing information and pictures of many poisonous plants are www.vth.colostate.edu/poisonous_plants/index.cfm and www.sokspeancecounty.org/WeedBoard/content.aspx?c=1443. Your veterinarian or county Extension agent should also be able to help with weed identification. The ATTRA publication Considerations in Organic Hog Production has additional information on using pastures for hog production.

If pastures are not available, feeding feedstuffs high in fiber is another possibility. Homan notes that studies show that fibrous feeds and protein by-products can make up as much as 90% of a gestating sows’ rations, because of the sow’s lower energy needs and large digestive tract. Acceptable feeds include alfalfa hay (need to feed good quality hay; moldy alfalfa can cause abortions), haylage (not more than 20% of a sow’s ration), alfalfa and orchard grass hay, grass silage, sunflower and soybean hulls, corn-cob meal, and beet pulp. Homan says even growing and finishing pigs can be fed 10 to 30% forages, if energy levels are maintained.

Alternative Energy Sources

Small grains can be used to reduce the amount of corn in swine rations. Wheat, tritium, barley, and hullless barley can totally replace corn, but need to be more coarsely processed than corn to reduce dust and flouring effects—continuous feeding of finely ground grains can cause ulcers in pigs’ gastrointestinal tract. The differing nutritional values of small grains means that the ration will have to be formulated to meet the hogs’ energy and protein needs—e.g., the amino acid lysine, tryptophan, threonine, and methionine, and the minerals calcium and phosphorus. Light and/or weedy small grains that would be discounted at the elevator can be fed to pigs with no difference in their performance. Barley and hullless barley need to be stored after harvest before feeding them to swine. In the publication Barley Production in Alberta: Harvesting on the Alberta Agriculture, Food and Rural Development Web site, it states:

Newly harvested barley, whether dry, or high moisture, should always be stored about four to six weeks before being fed to any class of livestock. This storage period is often called a sweat period. Serious losses in cattle, pigs and poultry have been attributed to feeding newly harvested grain. There is some evidence that certain components of the newly harvested grain may be toxic to livestock. In storage, such compounds undergo chemical changes that make them non-toxic. Processing newly harvested barley for feed apparently does not eliminate the problem of toxicity—a rest or sweat period is necessary.

The following publications offer further information about feeding small grains to hogs.

- *Feeding Barley to Swine & Poultry* - www.ext. nodak.edu/extpubs/ansci/swine/eb73w.htm

Some other small grains to consider are oats, rye, flax, hullless or naked oats, and high-fat oats. All of these small grains can be used in varying amounts in hog rations, according to their unique characteristics and nutritional values. Newer varieties of rye are less susceptible to ergot contamination—a fungal infection that can cause abortions—an older varieties and can be used as up to 30% of the energy source.

Oats’ feed value is only about 80% that of corn; it has high fiber content and can be used as 20% or more of the energy source. A 2002 study by Mark Honeyman, Sebblin Sullivan, and Wayne Roush at Iowa State University discusses changes in performance of market hogs in deep-bedded horned sows with the addition of 20% and 40% oats to the diet. They didn’t find any reduction in daily gain, feed intake, feed efficiency, or other crucial factors for either level of oats in the ration. The study is available at www.extension.iastate.edu/ipic/reports/02swine/10 Apr-1819.pdf.

Up to 5% flax can be added to hog rations to increase the omega-3 fatty acids in the pork and improve sow performance. In 1999, South Dakota State University researchers tested feeding flax in a corn-soybean meal ration during the final 25 days of finishing. The results showed that the omega-3 fatty acids had increased. However, a consumer taste panel could detect differences in the bacon in rations that contained more than 5% flax. University of Minnesota researchers replaced other types of the soybean meal and tallow and added 5% flax to gestation and lactation sow rations. The study showed that the sows fed flax delivered more piglets at farrowing, the piglets had heavier weaning weights, and that the sows lost less weight during lactation and rebred sooner.

Hullless or naked oats and high-fat oats are newer varieties with improved nutritional characteristics that make them good alternative feeds. Hullless oats can be used as the total energy source in swine rations; however, because of the limited cropping history and marketing opportunities, their yield potential and economic value are unknown in many areas and first should be tested in small quantities.

Several other alternative grains that can be used in hog rations are cull, unpoppyed popcorn and...
backwheat. Popcorn has nearly the same nutritional value as yellow corn and can replace corn on an equal weight basis. If you happen to be in an area where cull popcorn is available, it can sometimes be less costly than corn.

Backwheat can be used to replace about 25 to 50% of corn. Backwheat has only 80% of the energy value of corn but is higher in fiber and can be planted later in the season as a substitute crop in emergencies. Backwheat should not be used for nursery rations or for lactating sows, because of their higher energy requirements. Backwheat should be limited to 25% replacement of corn for white pigs housed outside. Backwheat contains a photosensitizing agent called fagopyrin that causes rashes on pigs’ skin and intense itching when the pigs are exposed to sunlight. This condition is called fagopyrin or backwheat poisoning.

A 2004 paper by Lee J. Johnson and Rebecca Morrison at the Alternative Swine Program of the West Central Research and Outreach Center in Morris, Minnesota, reported trying alternative ingredients—barley, oats, buckwheat, field peas, and expelled soybean meal—in the ration to help reduce the additional carcass fat in pigs raised in hoop shelters rather than confinement houses. The study shows that feeding a low-energy diet based on small grains slows the growth rate and marginally improves carcass leanness in hoop-sheltered hogs, but doesn’t affect the eating quality of the pork.

Alternative Protein Sources

Soybean meal can be replaced or reduced by the use of alternative protein sources. Canola meal, sunflower meal, cottonseed meal, linseed meal, and sunflower meal, cottonseed meal, linseed meal, or peanut meal may be available locally, depending on your location. These alternative meals can substitute for soybean meal, but they do have different amino acid ratios and mineral levels that need to be taken into consideration when balancing the rations. Cottonseed meal contains various levels of free gossypol—a compound found in cottonseed that is toxic to hogs. The 2003 Oklahoma Cooperative Extension publication Gossypol Toxicity in Livestock, by Sandra Morgan, provides specific information on gossypol toxicity levels for swine and other livestock. You can find this publication at http://osuextra.okstate.edu/pdfs/F-9116web.pdf.

Roasting or extruding whole soybeans is another option; the heat breaks down the trypsin inhibitors found in raw soybeans. Processed, green, frost-damaged beans that would be discounted at the elevator can be used in the ration without any problems. The higher oil content of whole, processed soybeans produces a faster rate of gain than soybean meal. The cost of processing equipment and the fact that the extruded and roasted products don’t store well are considerations that the producer has to take into account. Additional information on feeding soybeans to hogs is available at www.omafra.gov.on.ca/english/livestock/swine/facts/greensoybeanpigs.htm.

Sweet white lupines can make up to about 10% of the ration for most finishing and gestating animals. Lupines’ protein content can vary from 25 to 38%, and they have about half the lysine of soybeans. Lupines should be supplemented with iron at 400 parts/million and methionine.

Field peas are another option. The South Dakota State University publication Using South Dakota Grown Field Peas in Swine Diets states:

Field peas are a good source of energy and amino acids for swine. However, variety differences exist, and producers must know the nutrient content of the peas they are working with to properly formulate them into swine diets. Field peas are a good source of lysine, but the concentrations of methionine, tryptophan, and threonine must be watched closely. While peas can contain anti-nutritional factors, they are usually in such low concentration that field peas can be fed raw.

The publication is available at http://agbio. sdstate.edu/articles/ExEx2041.pdf or by calling the Agriculture & Biological Science (ABS) Bulletin Room at 605–688–5626 or 800–301–9293.

Mung beans can be used as an alternative to soybean meal. Mung beans contain from 24 to 30% crude protein, but about equivalent lysine levels as a percentage of protein. Mung beans contain a trypsin inhibitor just like raw soybeans. This limits mung bean use in swine rations to about 10% for growing pigs, 15% for finishing pigs, and 10% for sow rations, unless the mung beans are heat-treated like whole soybeans.

The Oklahoma State University Extension publication Using Mung Beans in Swine Diets is available by calling the University Mailing Services at 405–744–5385.

Balancing Rations

It is important to remember that any changes to your rations, including adding alternative feedstuffs, may change the growth rate of the hogs. It is best to determine the feed-cost savings and any changes in market patterns before making any changes to your feeding program. Always assess any changes to your rations so that all the pigs’ nutritional requirements are being met at every stage of growth. Alternative feeds have varying food values, so it is important to know the nutritional contents of each feed ingredient. Nutrient testing of alternative feed ingredients will eliminate any guesswork.
What Can Replace Soy in Commercial Organic Feeds?

by Jack Kittredge

Jeff Mattocks is the vice president and nutritionist for the Fertrell Company. As one of the premier suppliers of livestock feed to the organic market, he is well aware of the controversy concerning soy as an animal feed. Ten percent of his calls now, he estimates, are looking for replacements for soy as a source of protein. As a businessman trying to meet his customers’ desires he has extensively investigated soy alternatives. But he, himself, is not anti-soy.

“If properly treated,” he explains, “soy can be a useful component in an organic feed. There are three things that can be problems with soy in such a feed. First, it needs to be organically raised – not GMO seed, not sprayed with pesticides. Second, you want to use whole beans, not soy meal – which is what is left after the oil is extracted from soy. In the extraction process the solvent hexane is used, and residues of this toxin will remain in the meal. Third, you need to deactivate the enzyme urease, which is present in soy. Left active, urease will inhibit the enzymatic action of trypsin, one of three enzymes involved in the breakdown of proteins in the digestive tract. That deactivation can be done by heating the soy to over 270 °F for 20 minutes, soaking it for 24 hours at room temperature, fermenting it as is done in Japanese foods, or sprouting it, which is difficult to do with soy. A couple of other options are higher protein breeds of wheat that come in at 14% to 16% protein, and camelina, a member of the mustard family, which ranges from 35% to 38% protein after the oil is removed. The latter, an oil seed crop, does well on marginal and arid soils, so is widely grown in Australia. No organic camelina is yet available, however.

Hogs can do well on a mix of barley (13% protein) and field peas, Mattocks feels, but they have a low tolerance for wheat. Chickens, on the other hand, thrive on a mixture of wheat, oats and barley. Mattocks feels that the more different grains in a livestock ration, the healthier the animals will be.

“Some farmers,” he says, “are now planting what I call a ‘succotash’ blend: oats, barley, wheat, maybe triticale (a wheat/rye mix) and field peas. If you plant a minimum of 40% field peas (by seed count, not by weight) this will give you a feed with a protein content of 16% or 17%. You harvest it as a single crop and you’ll get about 75% small grains and 25% field peas. One farmer in New York who has planted this blend has gotten 60 to 100 bushels per acre. Of course you need to find varieties that have roughly the same dates of maturity so you can harvest them at the same time. You can add fish meal or crab meal to boost the protein if you want but you don’t always need to.”

Jeff said it was difficult finding feed ingredients closer to the northeast to meet the need for many NOFA members. There are parts of New York and Vermont that grow excellent grains, but much of the rest of the area is not well suited to large fields and combine-based production.

Actually,” Mattocks says, “animals, especially the infant stages while nursing their mothers, don’t digest plant proteins as efficiently as animal proteins. Their amino acid profile is different. So it would be ideal to get more of the protein in feed from animal sources at this stage of development. But it is not easy to do that. There used to be more animal by-products available from fish or livestock processing plants. But there are no large fish processors left in the northeast. Where there are a few, in the Carolinas, vigorous enforcement of immigration laws has idled several of them. There are no slaughterhouses that segregate organic and non-organic offal, which would be required before the organic material could be used to make an organic feed.”
Sprouting to Enhance Poultry Feeds

by Harvey Ussery

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In the winter, when the flock does not have access to pasture, I sprout the entire small grain portion of my feed mix—and sometimes the peas as well.

When I feed both sprouted peas and sprouted grains, the chickens go for the grains by preference every time. When I return later in the day, however, they have usually cleaned up all the sprouted peas as well. There is no reason I shouldn’t also sprout the whole corn, but doing so would leave little in the dry mix other than extremely fine ingredients—flax seed, kelp meal, dried yeast, etc. Chickens resist eating feed of mostly small particle size.

Since I do not require a green sprout, my system is based not on sprouting trays but on six 5-gallon food grade plastic buckets. Two buckets are soak buckets (if I am sprouting peas as well as grains)—four are drain/sprout buckets. The latter I drill with dozens of small holes, in the bottoms and half-way up the sides. The size of the holes is important: They must permit the flushing through of dusty debris, but not get blocked by a grain of wheat or oats.

Here is the schedule I follow when sprouting both peas and grains, assuming I desire a 5-day sprout:

Day 1 In one of the soak buckets, I soak all the whole wheat, oats, and barley called for in the mix I am currently using. (I would certainly use other whole grains if available.) Since it is usually winter, I set the bucket in my basement to prevent freezing.

Day 2 I pour the small grains into one of the drain/sprout buckets and rinse well, allowing thorough drainage through the holes in the bucket before returning to the basement. I set another batch of small grains to soak in the soak bucket. In a second soak bucket, I soak the amount of whole peas called for in the mix.

Day 3 I again pour the soaked small grains into a drain/sprout bucket. I pour yesterday’s soaked peas into the grains from Day 1. Both drain buckets get thoroughly rinsed before returning to the basement. I start new (separate) batches of grains and peas soaking.

Day 4 Repeat, this time putting the soaked peas into the bucket containing grains started Day 2.

Day 5 Again, repeat. Note that at this point I have contents in four drain/sprout buckets.

My sprouting setup consists of one (or two) soak buckets and several drain buckets. Each drain bucket gets a thorough rinse every day.

Day 6 The most advanced bucket of sprouts is now ready to feed. Note that the grains are five-day sprouts (including the first day in the soak bucket), and that the peas are four-day sprouts. (The peas sprout at a faster rate than the grains, so I enter them at a later point in the rotation.) I take that bucket out to the poultry house and scatter the sprouted seeds onto the deep litter. If it is a day when the birds can be out on the pasture, I scatter some outside as well. Now I put yesterday’s soaked grain into the bucket I’ve just emptied, and the cycle rolls on.

Note that every day, every bucket gets a thorough rinse—otherwise, the sprouting grains get “funky.”

Sometimes I prefer to sprout the grains only, in which case I eliminate one of the soak buckets (and grind the peas instead, adding them to the dry part of the mix). Also, I might reduce the number of drain/sprout buckets, or increase, depending on how developed a sprout I want, and the point in the season. (In the winter, the sprouting process slows down, even in my basement which is warmed by waste heat from the furnace, thus I might add one drain bucket—for an additional day—to the system.)

The above is doubtless confusing when read off the page. If you play around with coffee cups representing the buckets as you follow along, however, you will understand how the system works.
Trash to Treasure

I have always been fascinated by the transformation of something “yucky” into something prized. When my father brought home a bushel basket of manure from my grandmother’s chicken coop in the trunk of our car, and worked it into our garden beds, I was filled with wonder: That stuff they warn us barefoot boys not to step in, it’s going to make our vegetables grow? Wow! When I started growing gardens of my own, I had many reasons to avoid “fertility in a bag,” but first and foremost I shunned chemical fertilizers because they would deny me a role in composting—the miracle of turning manures and rotting vegetation into harvests.

And I’ve been a sucker for the idea that I could make an alliance with another animal species to work this magic myself. For example, I was enough of a kid to jump enthusiastically into composting with worms, turning “pony poop” into fertilizer and chicken feed. (See “The Boxwood Vermicomposting System” on my website: http://themodernhomestead.us/article/Boxwood+Vermicomposting.html.) Now I’m excited about yet another species that magically transforms “wastes” into resources. Let me introduce you.

Meet the Genie: Hermetia illucens

Most of us are annoyed and repelled by “flies.” House flies buzz into the house and onto our food, possibly carrying disease-causing microbes. Horse flies bite. Blow flies lay their eggs in carrion, and the larvae rid the world of dead carcasses—an essential ecological service for which we are grateful, even as we are repelled by the process as “just too gross!”

The wingsed (reproductive) phase of the Black Soldier looks like a pretty (but stingless!) wasp. Though a flying adult never “buzzes” or attempts to land on a person, this one—still “sleepy” after emergence from pupation—was persuaded to sit still long enough for us to admire her.

But none of us within its range are either annoyed or repelled by the Black Soldier Fly. Hermetia illucens—indeed, it is unlikely most of us have ever even noticed this innocuous flying insect. Why would we? They look nothing like the flies we find annoying. They do not “buzz” us or come inside the house. They do not bite. A resting adult looks like a slender black wasp (but without the sting)—quite pretty, actually.

The life cycle of the Black Soldier could be a textbook example of the most common insect life cycle: egg, larva, pupa, adult.

Like countless other essential decomposers, the work of Hermetia illucens in the world is the conversion of organic debris into residues that feed the soil food web, and into new individuals who carry that work into the future. More poetically, decomposers turn death back into life. In the case of the Black Soldier, the cycle starts with eggs laid by the female near a concentrated deposit of moist, nutrient-dense organic refuse such as succulent vegetable matter and manures.

The eggs incubate for four days to three weeks, then hatch into larvae, legless and wingless grubs that are “all throughput”: bucoly feeding mouth on one end, extraction of all nutrients usable for vigorous growth in the digestive system, and ejection of undigestible feed components out the other end. The grubs molt their skins, to allow for their rapid growth, in five successive phases called instars.

Under ideal conditions, the larvae mature in 10 days. Their tissues are now developed enough, and they have stored energy reserves enough, to support the next phase: the miracle of metamorphosis, the transformation into a completely different insect form. Pupation does not take place within the feeding medium, however. When they are ready, the prepupal grubs have the instinct to leave it and find a place to burrow into the earth and initiate metamorphosis. After ten days or so, they emerge as winged adults.

As is the case with many species of butterfly, the adult phase is exclusively sexual: The winged phase is solely about mating, and, for the female, finding the best possible place to lay her eggs. They do not feed at all in this phase, which lasts only five to eight days. Death quickly ensues for both male and female adults, once fertile eggs have been laid to start the cycle anew.

An Alliance with the Soldier

Useful ideas emerge from alert observation. In the case of the Black Soldier life cycle, we should note particularly: They are specialists in a critically important role—the breakdown of organic debris that would otherwise choke the ecology. Their high level of feeding activity and rapid growth in the larval stage imply the concentration of considerable nutrients. Since the adults do not feed—indeed, they do not even have functioning mouth parts—they do not bite, nor do they come buzzing around us or our houses, looking for something to eat. Of special interest is their habit of crawling out of the feeding medium when it is time to pupate.

The entire unit is attached to a sturdy stand, to accommodate an attached sealed jar below, into which effluent drains.

This view of the interior of the BioPod™ shows us a component that is essential, whatever the bin design: means for the mature grubs to “ramp out” of the feeding medium when it is time to pupate. The ramp here is molded into the body of the BioPod™ itself. It ends at the “harvest slit,” through which the migrating grubs free-fall into the collection bucket below. Crawl-off occurs overnight; and next morning Harvey simply removes the bucket and offers his chickens their favorite meal of the day.

These facets of the life cycle hint at an opportunity to make an alliance with Hermetia illucens to: responsibly manage organic residues such as spoiled or unused food, manures, culled fruits and vegetables, etc.; and to reclaim the residual energy in such materials as additions to soil fertility, or even high quality feed (the mature grubs themselves) which we can offer to livestock species such as chickens, pigs, or farmed fish. By channeling the “crawl-off” of the grubs, we can even cause them to self-harvest into a collection bucket! And because the vigorous activity of the larvae keeps the feeding medium constantly
aerated (most pathogenic microbes prefer anaerobic conditions), and because the adults do not feed at all, this species is not a vector for diseases. Happily, soldier grubs tend to inhibit development of larvae of all other fly species—house flies, fruit flies, blow flies—so cultivating the Black Soldier can actually reduce populations of flies with a higher “nuisance profile.”

Much creative work has in fact been done toward making exactly such an alliance. Dr. Paul Olivier has designed systems for grub composting in Vietnam and other developing countries, to reduce the load of food wastes on streets and in landfills, while providing needed employment. Academic researchers such as Sophie St-Hilaire and Craig Sheppard have experimented with soldier grubs to manage fish offal, and manures in commercial poultry and swine houses; and to yield high-protein feed supplements for various livestock species, including commercially raised carnivorous fish. Dr. Olivier and his son Robert have founded a company (ESR International, LLC) which sells the well designed BioPod™, a molded high-density plastic bin similar in some ways to, but more efficient than, home scale “worms eat my garbage” vermicomposting units.

Parameters for Black Soldier Composting

In the summer of 2009, I began working a soldier grub colony in a BioPod™. In the coming growing season I will experiment as well with some more low-tech, less expensive, do-it-yourself projects for soldier grub composting. My goal is to replace 25% of purchased feed I offer my chickens with nutrient-dense soldier grubs (42% protein, 35% fat, dry weight).

For now, these are some of the parameters that govern the design and management of a successful operation.

**Range**

If you live in climate zones 7 through 10, there is almost certainly a native Black Soldier population ready to work for you. (I’m in Zone 6b, and I found soldier grubs in my vermicomposting bins for years before I started cultivating them.) All you have to do to start a working colony is to set up feeds and protected conditions that fit their life cycle; and the gravid females (mated, ready to lay eggs) will come. Soldiers can survive considerably farther north than Zone 7. If there is no wild population, you can purchase “starter” grubs through the mail. How easy it will be to keep a local population going will depend on just how far north of their natural range you live.

**Bin**

There are no requirements for bin design, so long as it protects the colony from predation and rain, is readily accessible to gravid females, ensures compatible living conditions, and provides for “crawl-off” by the mature grubs. The unit should be set up in the shade: The high metabolic level of the grubs generates a good deal of heat—additional heat supplied by direct sunlight could be disastrous for the colony. Otherwise, placement of the bin depends on your own convenience. It does not have to be stuck off in “the back forty”: Aerobic (oxygen-rich) conditions in a well managed colony prevent unpleasant odors.

**Feeds**

Most efficient conversion to biomass occurs in typical food wastes. But if yours is a frugal household such as ours, there is no edible food wasted, other than...
castoffs like coffee grounds (which grubs love), tea leaves, peelings, and trimmings. (It might be possible in a larger project to receive food scraps from local schools and restaurants.) In the absence of such “food residuals,” any mix of succulent vegetable and fruit matter works well, such as over-mature and cull fruits and vegetables (the lurking Monster Zucchini perhaps). Since grubs love the big outer wrapper leaves of cabbage (and still-succulent spent broccoli plants), I plan to grow more rape (a close relative of kale, thus of cabbage)—which I grow as a cover crop anyway—to harvest as feed. I’m experimenting with comfrey as well—it’s succulent large leaves are packed with protein and minerals. Perhaps next year I’ll plant more of the big pumpkins and Hubbard squashes for feeding grubs.

Manures can make good feed. Low-fiber pig and chicken manures are best—there may be no better way to deal with these manures than using energy-hungry grubs. The larvae will work horse, rabbit, and chicken manures and suburban yard trimmings. The fiber content of these manures reduces feeding efficiency (since the larvae cannot digest the cellulotic residues of plant stems). Of course, if the manure available to you for processing is a high-fiber type (horse manure in my case), you could simply increase bin capacity to meet your production goals, and plan on cleaning out the bin a little more frequently.

Meat and fish scraps, and dairy products, can be fed to active colonies, but in limited amounts—the grubs will not thrive with too much high-protein feed. Such foods should not exceed 5% of total feed offered.

Do not use as feed materials that are dry, fibrous, high-cellulose, tough—such as weeds, grass, leaves, stalks, paper, cardboard.

Drainage

Look again at the list of appropriate feeds. Note that all have high moisture content; and that grubs do not thrive in anaerobic conditions. Conclusion: Effective drainage out of the bin is essential, and will likely be your major management challenge. If conditions in the colony do become too wet, either cease feeding for awhile or add a moisture-absorbing material such as shredded office paper (not newspaper). I used coconut husk fiber extraction, and the like.

Note that the effluent from the bin can be used exactly like a “manure tea.” Some sources advise against using it on garden crops, just to play it safe, but you can use it to encourage cover crops and other non-food plants.

The crawl-off

An essential feature of any bin design is provision of some sort of “ramp” the mature grubs can use to exit the feeding medium. If the incline is not gentle enough, they will have no problem wriggling up the ramp, which might end in some sort of gutter to direct their further migration. The grubs have no hesitation crawling off the end of the gutter and launching themselves into space, assuming they’re going to land on earth, where they can burrow and pupate. Uh-oh! —wily you have placed the spout over a collection bucket. Next morning you only have to pick up the bucket and go feed the chickens. (They love soldier grubs.)

Do remember, though, to scatter a few grubs where they can burrow, pupate, and emerge as adults ready to carry on the cycle.

Productivity

A colony of soldier grubs is like a chicken flock: A well managed colony is a lot more productive than a wild one—that is the essence of the almost symbiotic relationship between Homo sapiens and another species which we call “domestication.”

What levels of production might we expect? That depends on many factors—bin design, feeds offered, ambient temperatures, management experience and skills (the “your mileage may vary” factor). But the equation, at whatever level of production, is all positive: If we offer the grubs 100 pounds of food wastes, for example, they will reduce it to 5 pounds of residue usable as a superior soil amendment; in the process generating 10 and possibly up to 20 pounds of live grubs that can be fed to livestock; in addition to liquid effluent (how much depends on the moisture content of the feeding materials) which can be used to feed crops. Hey, wait a minute—what happened to the “wastes”? There is absolutely no waste remaining after this conversion—it has all been transformed into valuable resource.

In the future, widespread farm-scale conversion by soldier grubs of organic residues like manures could reduce dependence on purchased feeds for poultry, pigs, and fish. Or the grubs could be sold for drying and addition to livestock feeds—as a replacement for the thousands of tons of ocean fish harvested annually for fish meal (at today’s prices, approaching $10,000 per ton and rising).

Flexibility

This species is enormously adaptive in response to changing environmental conditions. If food supply runs out, the grubs go dormant until more food is available. During winter, they delay maturation for several months before resuming development. This adaptability gives the operator great flexibility in managing the colony.

Clean-out

Because of the enormous reduction in volume of the feedstocks offered to the colony, cleaning out the substrate—the indigestible residue at the bottom of the bin—need not be frequent. This residue makes a great soil amendment, or it can be added to vermicomposting bins for even better natural fertilizer production. (See below.)

Winter

It is possible to maintain a ready-to-pupate colony through the winter, ensuring an earlier start on bioconversion in the spring (or survival of an active colony in areas north of their natural range). Remember that an active colony generates heat energy by their high metabolic rate, making it easier to provide the conditions for their survival.

Addendum, December 31, 2009

I believe grubs that have entered the pupation stage in the soil survive freezing. Developing grubs in an active colony will die, however, if allowed to freeze. I have been experimenting with my colony’s winter requirements. Until the heavy frosts came in, I kept my BioPod in the greenhouse. Then I moved it to the basement, where the average temperature from the furnace keeps the temperature around 55 degrees. This temperature proved too warm: The colony began producing a heavy crawl-off (representing a drain from the population that cannot be replenished before the warm season, when mating adults will be active)—and even premature metamorphosis of grubs into bewildered-looking adults. My solution was to remove the colony from the BioPod and return it to the greenhouse, but this time placed into one of the earth-bermed vermicomposting bins, well protected from freezing. The grubs have remained active, eating all the castoffs from the kitchen such as coffee grounds, tea leaves, and trimmings—but not completing development into the pupal stage.

They’re obviously quite compatible with the resident redworms.

Partners in Vermicomposting

Those who compost with worms for managing organic “wastes” may enjoy expanding their repertoire to include a soldier grub colony. There are important differences between the two: Redworms live and feed in a large, undifferentiated feeding mass; grubs should be fed only what they will consume in a day. The population in a worm bin is self-sustaining; whereas a soldier grub colony requires renewal from an ambient wild population—otherwise, there will be no egg-laying females to ensure a new supply of grubs in the bin.

In some ways, soldier grubs are superior to redworms for composting: They are more active, yielding greater production of live biomass; and grubs so conveniently self-harvest into our collection buckets.

However, we needn’t choose between the two on the basis of which is “better” — actually, the two species make wonderful partners. Grubs digest their fresh, putrescent matter in a hurry (worms wait until bacteria are consuming them, then feed on the bacteria); while redworms convert the cellulotic residues grubs are unable to digest. Studies in Asia demonstrate that redworms grow three to four times faster on the residues from soldier grubs, than on food wastes.

The Big Picture

To paraphrase Wendell Berry, our modern habit is to take a beautiful natural solution—the recycling by decomposer organisms of residual energy in “wastes” into food for other members of the ecology, including those in the soil food web—and neatly divide it into several hideous problems. Nature does not know the meaning of the term “waste”—we have created “waste,” the loss of reclaimable energies in organic residues, as a new phenomenon inherent in the human economy. The refuse in landfills consists of up to 12% uneatable or unused food, whose breakdown there not only squanders its resource potential, but generates methane, an even more potent climate-altering gas than carbon dioxide. Manures from livestock operations are seldom fully utilized for soil improvement, and run off to natural water systems, where they function more as toxin than fertilizer.

It is easy to despair of making an individual difference where some of our Big Problems are concerned. But with regard to the organic residues from our tables, gardens and orchards, and backyard livestock operations, we can—with forethought and dedication, and in ways that are fun—help end the inexcusable and unsustainable shitting of unreclaimed resources down a black hole from which they do not return. Hemerita ilucens is ready to help.

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Spring 2010

The Natural Farmer
For More Information on the Black Soldier
• http://blacksoldierflyblog.com A blog maintained by “Jerry aka GW,” who has been cultivating soldier grubs to feed pond fish for several years. GW also serves as a distributor of the well designed BioPod™, which I am currently using to house my grub colony. Quoting GW: “If you like gardening, traditional composting, or vermiculture, then you’re a likely candidate for black soldier fly culturing. Likewise, if you watch nature and science shows you will probably find BSF as fascinating as I do.”

• http://www.theBioPod.com The website for ESR International, LLC, the company that designed and sells the BioPod™ for soldier grub composting. Lots of useful information about managing a working colony, and about many other bioconversion/waste management issues. (BioPod™ is a trademark of ESR International, LLC.)

• http://www.theBioPod.com/forum An online discussion forum, sponsored by ESR International, LLC, for enthusiasts working with this fascinating species.

• http://www.esrint.com/pages/bioconversion.html Background to the development of the major BioPod™ designs to date.

• http://aggie-horticulture.tamu.edu/galveston/beneficials/beneficial-51_black_soldier_fly.htm One-page summary of facts about Hermetia illucens and what it has to offer.


• http://www.nabuzz.com/files/attach/2006/07/task/11281_46de63ee5b5f.pdf Detailed proposal for solving waste management problems in Vietnam, while providing or enhancing thousands of jobs, centered on soldier grub conversion of organic compostables.

January, 2010 update from ESR International, the maker of the BioPod™
by Jack Kittredge

TNF: Is the BioPod still available?
ESR: The BioPod Classic is being replaced in early 2010 with the second generation BioPod. The BioPod Plus. We are also releasing a commercial sized unit, the Commercial Prota Pod. We are still undecided about continued production of the older system.

TNF: How do the units work out in the northeast for raising grubs?
ESR: These units work well in areas where the Black Soldier Fly exists naturally; however, no range maps exist for this insect, unlike other animals - so the buyer needs to find out if they are present locally. Unfortunately, we are not aware of any range maps and we suspect that information has never been compiled (we would love to see a university study that could help determine this natural range). Our guess is that regions with zone 5 or colder would probably have to obtain starter colonies and rev up the local populations to a sustained level (this can be accomplished by allowing 10% of the pupae to hatch out to adults, which will then in turn breed and lay eggs - amplifying the population). Starter colonies are available online from a few growers that supply redworm colonies for newly set up worm bins. We do not supply grubs at this time, but may start offering those in the future. Insulation would also be necessary to extend the bioconversion season into the cooler months. Think of this as a warm climate crop that can be grown in the northeast with a little help to maximize production and harvest (like with sweet potatoes, okra and cowpeas).

TNF: If a farm were interested in the larger production possibilities of the Prota Pod, how much waste is it designed to use per day, and what can be used?
ESR: The bioconversion rate is predicated on temperature and what the grubs are being fed. The smaller BioPods can easily consume the daily food scraps from a 4-6 person household. A good rule of thumb for the smaller unit is approx. 5 lbs of scraps per day. Pull some back if they cannot consume the food in 24-48 hours. The larger ProtaPod has approx. 4 times the processing capacity of the residential unit. Here are some figures from the website:

Capacity of BioPod Classic:
15-20% Bioconversion of food waste into BioGrunts Food scraps (including meat) from 4-6 adults Digestion Rate = up to 5 lbs (2.2 kg) per day Approx. volume of 35 liters / 9.2 gallons 5% bioconversion of scraps into black friable castings

TNF: Can outdoor waste such as crop residue, soiled bedding, and even the occasional poultry mortality be used?
ESR: I would say that crop residue should be fine, but I would not recommend adding the other two items to the pods, if the grubs are going to be fed back to the poultry - you don’t want to ever practice that form of recycling due to viruses and prions. If you are going to feed the grubs to fish or animals from a different CLASS (not Aves), that should be OK. Best to play it safe. The grubs will definitely consume the carcasses, but best to use a separate pod for those. They will also eat manure, but the bedding has little nutritional value so that component will be overlooked. Plus the bedding may contain chemicals.

TNF: What ambient temperature is necessary for these to remain active.
ESR: Optimum outdoor temps range from 65 to 100˚ F - though the indoor temperature will be maintained in the 90’s due to the high rate of exothermic digestion. Temps over 105˚ F inside the pod can cause premature crawl off of the grubs, before maturity is reached. These juvenile grubs will have to be re-added to the unit when it cools. Always place unit in full shade. Despite cool nights, the pods can continue to function well into the fall as long as you continue to feed them - maintaining digestion activity (which produces heat). An insulation blanket can assist in extending the active season for several weeks by retaining internally generated heat. Of course, you don’t want it to overheat. No breeding occurs once outdoor temps drop, but the grubs will continue to digest and get bigger.

TNF: What happens at colder temperatures, and what if they are cold just at night versus for longer periods?
ESR: Eventually the whole unit will go dormant when the internal temps are not sustainable enough to maintain adequate activity. At that point the whole system can be dumped into the redworm unit (for additional processing into castings) or added to a compost bin for over wintering.

TNF: How long can the two units remain functional if well filled and then untouched?
ESR: You never want to deprive them of food for more than a week or so or the colony may collapse (go dormant, especially after snow has dropped. Fresh foods keeps them active, growing, and attracting additional gravid females to lay new eggs to continue the cycle.

TNF: How about pricing?
ESR: Retail pricing for a single BioPod Plus will range from $180-200 depending on the retailer from which it is purchased. Our price for direct orders has not yet been set. We are still looking for a few more resellers at this time.
How To Culture Mealworms

from the Primer of Wildlife Care, Bruckner Nature Center, Troy, Ohio

Life Cycle
Mealworms are the larvae of the beetle Tenebrio molitor. During their life cycle these beetles undergo complete metamorphosis: egg, larva, pupa, and adult. Times required for each stage under average conditions are listed below.

- Egg.......4 weeks
- Larva....10 weeks
- Pupa......3 weeks
- Adult.....4 weeks

Culturing Mealworms
Mealworms are handy for feeding to a variety of animals, such as birds, bats, amphibians, and reptiles. To culture mealworms, use a plastic, metal, or glass container with smooth sides to prevent escape. Cover the colony with a screen; secure the screen with an elastic band. The size of the container will be determined by the number of larvae to be cultured:

- wide-mouth gallon jar....1,000 mealworms
- 15 x 12 x 6 inches........5,000 mealworms
- 36 x 24 x 12 inches.....50,000 mealworms

NOTE: To discourage mites from invading the mealworm colony, place the container in a bowl of water.

Feeding Mealworm Colonies
Use any of the following mixtures:

1. Wheat bran
2. One part pulverized dry cat or dog chow + 3 parts wheat bran
3. Quaker oats + 1/2 cup bone meal powder + 1/4 cup multivitamin powder

Cover food and mealworms with 2-3 layers of moistened burlap. Sprinkle with water once weekly to maintain moisture level in colony. Burlap also simplifies collecting mealworms. The larvae gather between the burlap layers and can easily be scooped by hand or picked out with forceps.

NOTE: Mixtures of foods, such as oats, intended for human consumption are less likely to contain contaminants, such as mites, that can destroy a mealworm colony.

Moisture
Lay slices of apple, potato, carrot, or over-ripe banana over the surface of the colony to provide fluids for the mealworms. In addition to obtaining moisture from these vegetables and fruits, mealworms lay their eggs on them. Collect these and save them when starting a new colony.

NOTE: Mixtures of foods, such as oats, intended for human consumption are less likely to contain contaminants, such as mites, that can destroy a mealworm colony.

Temperature
Mealworms thrive in a warm (80-90 degrees F) environment. To maintain the larvae in a state of dormancy, cover the container with cloth to prevent condensation, and set in the refrigerator (40-50 degrees F). Mealworms will die at lower temperatures.

Cleaning the Colony and Starting New Colonies
Over time, a build-up of powdery residue will appear in the container. This residue, called frass, consists of mealworm wastes and eggs. Sift this out once a month using a colander, window screen, or tea strainer. Keep frass in a separate container and add bran and potato slices. The eggs will hatch in about one month. Two weeks after hatching, sift out the tiny larvae and put them in a container with fresh food, burlap, and vegetable slices as described above.

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I just wanted to tell you that last winter was the 1st year to feed hay fertilized with your Fish. 10 to 12 pounds per day as opposed to 20 to 25 for conventionally grown hay, to maintain a body condition score of 4. These cattle are fed on winter range so they have “pickins” other than hay. Outstanding product!!!

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Mantle Ranch
Dinosaur, CO 81610

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More pork is eaten around the world than any other kind of meat. The quality, flavor and healthfulness of pork fat — lard, that is — has more to do with the diet and lifestyle of the pig than anything else, a fact much more true for hogs than it is for tallow from a ruminant animal. When ruminants are fed whey, peanuts, acorns or other fats, the fat content of the ration is actually digested “twice” thanks to the rumen bugs. Therefore, less direct flavor from the dietary fats comes through. The rumination process also hydrogenates the fat so that it becomes more of a hard fat like butter. Soft, or unsaturated fat creates more flavor, more mouth feel, and gives us the rainbow of scents and flavors with the aging of meat.

This is one of many reasons why we don’t want to eat “garbage hogs,” the factory farm hogs fed and fattened on such commercial waste streams as bakery waste. In fact, consuming this kind of factory pork is a great way to mainline huge quantities of trans fats into one’s diet. Trans fats, a dietary death trip, come straight across your plate all the way from the hog trough. If you have a true death wish, just go eat the donuts yourself and get your trans fats direct, not second-hand from a pig.

To make juicy pork chops and the ultimate ham we need soft fat. Soft fat comes primarily from a ration that includes a substantial quantity of quality cheese whey, skim milk or other dairy products, as well as a pleasing quantity of peanuts, tree nuts such as acorns, almonds, pecans, or even walnuts (ever hear a woods pig cracking walnut hulls with their teeth? They can do it!).

Most people don’t know this, but good lard is a health food! Good free-range pastured pork is usually around 55 percent monounsaturated fat (the good stuff), primarily oleic acid with nice levels of linoleic acid, especially if the hogs have access to acorns as part of their diet, acorns having about 62 percent oleic acid and plenty of linoleic acid. These monounsaturated fats lower LDL cholesterol and raise HDL cholesterol, and that’s good.

In addition to whey or nuts and seeds, hogs need a “balanced diet,” which should include plenty of grass, alfalfa and other weeds or forbs. These greens supply plenty of antioxidants, which protect the fat from rancidity and oxidation during storage, curing and processing.

Another excellent seed to incorporate into hog rations is ground flax seed or flax seed hulls that have had the flax oil extracted. By incorporating up to 400 pounds of hulls per ton of concentrated feed, the resultant hog fat can have as much of the very desirable omega-3 fat as a wild salmon or a streak of meat. The quality, flavor and healthfulness of pork fat — lard, that is — has more to do with the diet and lifestyle of the pig than anything else, a fact much more true for hogs than it is for tallow from a ruminant animal. When ruminants are fed whey, peanuts, acorns or other fats, the fat content of the ration is actually digested “twice” thanks to the rumen bugs. Therefore, less direct flavor from the dietary fats comes through. The rumination process also hydrogenates the fat so that it becomes more of a hard fat like butter. Soft, or unsaturated fat creates more flavor, more mouth feel, and gives us the rainbow of scents and flavors with the aging of meat.

It’s both possible and desirable to promote pork raised in this manner as “high omega-3 fat” and “selenium enriched” pork. It’s the truth, and many consumers are seeking it.

Modern commodity hogs have an average of 42 percent less body fat than similar hogs as recently as the 1980s. While the short-sighted producers and politically correct diet dictocrats — as lipid-lover Sally Fallon calls them — actually brag about this sad fact, we bemoan it and have thus returned to raising and fattening the heritage breeds that haven’t been engineered to resemble greyhounds. For the most part we want black hogs because this is where we find the good red meat and the good fat. White hogs, which suffice for the everyday Serrano hams, are more known for maternal instincts and fertility than for tasty eating.
We love our lard, we love juicy pork chops, and we grow our hogs big and fat. We rarely harvest hogs before 300 pounds body weight even going up to 400 pounds in some cases. To achieve finish, we want to see some visible rolls of body fat. This pays off with big-time benefits in flavor, quality and even healthfulness. Without question, hogs, like any other animal, develop flavor as they age.

Pork fat harvested from these hogs should ideally be rendered with low-temperature heat and strained away from the cracklings, which can also be sold to restaurants or chefs. Hogs can also be rendered with low-temperature heat and strained away from the cracklings, which can also be sold to restaurants or chefs.

All cooks should avoid cooking food, especially at fry temperatures, in any of the common vegetable oils, which include canola, soy, corn or even coconut or palm oil. We know that farm chickens are a more efficient source of protein than pigs. They also give us eggs. The chicken was a handy-dandy meal-sized unit. Unlike temperamental sows, I don’t think any farm chicken has ever been pecked to death by a rooster, so there’s another point for the birds. There is, however, no reason why we can’t have both chickens and hogs on our farms. Hogs can also wander through forest land virtually impervious to predators and grow fat and delicious on land that is otherwise fairly unfarmable. It’s also desirable to reclaim brushty, shrubby land using hogs to landscape.

When we are talking dairy farms, one can almost watch the whey turn to delicious, juicy pork. A by-product of careful aging has transpired. One leg from the top-quality Iberico black-toed pigs can sell for $10,000 and is served exactly 100 grams (about 3.5 ounces) of sliced ham. The meat is sliced so thinly it is translucent and is arranged on a 9-inch dinner plate so that it looks like the delicate petals of a flower. The man slowly eats the meat, savoring each bite. For this privilege he pays over $100 and walks out very, very happy.

Where does this occur? Hint: not in America (yet).

The equally famous Parma ham, a.k.a. Prosciutto di Parma, comes from the region of Northern Italy where Parmigiano Reggiano cheese is created. In the oak savannas of Spain, where ground-fall acorns stand several inches deep, luring in these free-ranging forest hogs. The nearly-as-famous Jambon de Bayonne is a “French cousin” ham. No Iberico ham can be sold before 22 months of careful aging has transpired. One leg from the top-quality Iberico black-toed pigs can sell for 100 pounds in some cases. To achieve finish, we want to see some visible rolls of body fat. This pays off with big-time benefits in flavor, quality and even healthfulness. Without question, hogs, like any other animal, develop flavor as they age.

Consider this scenario: A man walks into a bar (this is not a joke) and is served exactly 100 grams (about 3.5 ounces) of sliced ham. The meat is sliced so thinly it is translucent and is arranged on a 9-inch dinner plate so that it looks like the delicate petals of a flower. The man slowly eats the meat, savoring each bite. For this privilege he pays over $100 and walks out very, very happy.

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growth, proper function of the brain and nervous system, protection from disease and optimum energy levels.

She is also well known as the co-founder and president of The Weston A. Price Foundation. The Weston A. Price Foundation is a nonprofit organization founded to disseminate the research of nutrition pioneer Dr. Weston A. Price, whose studies of isolated non-industrialized peoples established the parameters of human health and determined the optimum characteristics of human diets. Dr. Price’s research demonstrated that humans achieve perfect physical form and perfect health generation after generation only when they consume nutrient-dense whole foods and the vital fat-soluble activators found exclusively in animal fats.

Sally also helped in establishing the Farm-to-Consumer Legal Defense Fund which aims to help protect the rights of farmers to provide meat, eggs, raw dairy products, and other foods directly to consumers. This includes protecting consumers’ freedom of choice to consume raw milk.

Sally’s goal is to have every child be a healthy child - she aims to turn around the tragic epidemic of childhood illnesses, autism and ADD with nutrition and not just any old nutrition - accurate nutrition. To that end, her main message is “grass fed animals have the highest levels of three key vitamins - A D and K. Dr Price found good health comes from good nutrition, in particular, from the fats, yolks, organ meats and butter from grass fed animals.

Sally hopes to bring another message to the NOFA Summer Conference too. Although, as she says, she “doesn’t know farming” she does know that organic and sustainably farmed food is better for your health. And she’s not afraid to let everyone know that.

Our second keynoter, Dr. Fernando Funes has also “doesn’t know farming” she does know that organic food, our second keynoter, Dr. Fernando Funes has also

Following the 1989 collapse of the Soviet Union, imports shrank by 75% and Cuba was suddenly forced to produce their own food. Dr. Fernando Funes played a significant role in Cuba’s aggressive shift toward a new model of agriculture based on organic agriculture. Today nearly 70% of food is grown in the cities of Cuba, employing half a million people and using integrated organic urban agricultural techniques.

“In the early 1990’s a strong urban agriculture was born in which thousands of people produce food using organic methods that help supply basic foodstuffs to urban families,” said Dr. Funes. “The effectiveness of organic techniques in urban gardening has been clearly demonstrated, and it is here that we are possibly closest to the ideal of sustainable agriculture, due in part to the prohibition of the use of chemicals because of the proximity to dense human populations.”

Funes is a co-author of the book, “Sustainable Agriculture and Resistance: Transforming Food Production in Cuba.” The book chronicles the story of Cuba’s remarkable achievements in the use of sustainable agriculture, organic farming, urban gardens, smaller farms, animal traction, and biological pest control to feed the country.

NOFA Summer Conference Registration information is nearly ready and will be available on the website at www.nofasummerconference.org in mid-April. If you are eager to spread the good news, posters and post cards are ready now - contact the Summer Conference office at info@nofamass.org or call 978-355-2853 for copies.

Lots more information is already available on the website, including specifics about advertising, sponsorships, exhibits, and food donations. Again, the website address is www.nofasummerconference.org.

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We work hard to keep the cost of attending the Summer Conference as low as possible. To that end, we’ve decided to keep the registration costs the same as last year, as dorm housing. However, we did decide to raise the tenting fee, up $1 from last year, and the children’s meals will increase by $1 at lunch, adults will increase by $1/meal due to increases in our expenses at U/Mass. As in years past, our popular Farming Education Fund and Work Exchange offer ways to save money on registration.

Our workshop selection process is now closed, thank you to one all! We have 200 fabulous workshops, and a concurrent children’s and teen’s conference. All this information will also be up on the website by mid-April.

Book Reviews

Feeds and Feeding
by W. A. Henry and F. B. Morrison
published by the Henry-Morrison Company, Ithaca, NY
1928, 770 pages including appendices $9 to $40 as a used hardcover book depending on year of publication
review by Jack Kittredge

This is a classic, first published in 1898, which was regularly updated and used for half a century by farmers, ag school teachers, and anyone else involved in livestock nutrition. The book is divided into 3 sections, plus a number of appendices listing key aspects of feeds.

Section one deals with plant growth and animal nutrition. This focuses on the biology of various plants, their stages of growth, their various parts and where on them valuable foodstuffs can be found. It also deals with the biology of various livestock animals, their digestive systems, their ability to digest various feeds, their need for energy and...
Lemons.

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words, the extra demands of growth and fattening, of milk and wood production, and of farm labor. It also introduces the reader to the science of calculating proper rations, and how to economize by not providing too much of anything, which would be wasted.

Section two deals in detail with the various feedstuffs in common use: grains, oil and legume seeds, corn, sorghum, grass and hay, roots, tubers, silage and miscellaneous feeds. There is even a chapter on the manure value of different feeds. They discuss various byproducts of these items such as the bran left over after milling grain, the meal left over after extraction of oils from oilseeds, the butter milk and whey left after making milk into butter or cheese, tankage and meat scraps left over after slaughter, fish and bone meal, sugar beet pulp and molasses, distillers' grains remaining after fermentation, acorns, and cocoa shells left from chocolate making. The proprietary commercial feed industry was in its infancy in 1928, and a short section deals with the state regulations that were emerging to control it.

Section three, more than half of the book, deals with actually feeding livestock. It is broken into chapters on the primary animals involved: horses, cattle (dairy and beef), sheep, and pigs. Goats get only a few paragraphs in the sheep chapters, and poultry are not providing too much of anything, which would be wasteful.

At the time this book was written, in 1928, raising such usefulness would do well to understand how farmers of old did it, when it was standard practice. Section three, more than half of the book, deals with actually feeding livestock. It is broken into chapters on the primary animals involved: horses, cattle (dairy and beef), sheep, and pigs. Goats get only a few paragraphs in the sheep chapters, and poultry are not providing too much of anything, which would be wasteful.

There is a great deal of information in this manual and contemporary livestock farmers would do well to read it to better understand their feeds, their animals, and their business. Although many of us now buy commercial feeds, knowledge of the options (which have not changed a whole lot) will make us wiser purchasers. Those of us who are able to raise our own feeds would do well to understand how farmers of old did it, when it was standard practice.

The Raw Milk Revolution: Behind America's Emerging Battle Over Food Rights

David E. Gumpert
Chelsea Green, White River Junction, VT
2009, Softcover, $19.95, 254 pages with endnotes and index
review by Winton Pitoff

Even after reading what is certainly the most detailed and thoughtful chronicling of the raw milk issue in the U.S., one is still left to wonder just what it is about this food that inspires such passion, in equal measure, on both sides of the battle. What could be more basic than milk—milk in its unadulterated form at that?

Both sleuth and storyteller, Gumpert relies heavily on text from his blog, The Complete Patient (www.thecompletepatient.com), to chronicle the stories of a handful of cases involving raw milk in the last several years. He quotes extensively from his own entries, but also reprints long excerpts from comments-others have written in response to his pieces, some of them family members of children who allegedly became ill from consuming raw milk. Many of these quotes are heart-wrenching, all of them deeply personal, but it is telling that not even family members of children who were sick suggest that raw milk ought to be banned outright.

The stories detail the ordeal these families and farmers have gone through, not just in terms of health concerns but also at the hands of inspectors and agencies often literally adding insult to injury, in the name of determining cause and seeking solutions. Particularly disconcerting are the cases where Gumpert finds that the evidence linking the illness to raw milk is only circumstantial.

What’s startling is how the book slices and dices the statistics in many different ways, each time coming to the conclusion that raw milk simply isn’t the demon the regulators make it out to be. Data from the CDC, for instance, reveals that eating deli-meat has sickened far more people per capita than drinking raw milk. Gumpert touches on advocate’s claims that raw milk has health benefits, and references the studies (mostly European) that back up such claims. The evidence, but doesn’t need to rely on arguments that demonstrate why raw milk is ‘good’ to show why it should be legal to sell and purchase.

At its core, this is an argument about responsibility—how the regulators of farmers to follow practices that have been proven safe, the responsibility of regulators to balance public health issues with consumer demand and the livelihoods of farmers, and the responsibility of consumers to understand what they are eating and that with every bite of any product comes a risk. When any of these players decide to abdicate their responsibilities the system fails, and Gumpert is just as clear about the need for farmers to take responsibility for their products as he is about the need for regulators to seek reasonable solutions rather than simply banning raw milk outright.

He concludes with a bit of optimism, tempered by an honest depiction of food and regulatory systems bent on sterilizing everything Americans ingest—both literally and metaphorically. The rise of consumers demanding the right to choose for themselves to make their own decisions about what is healthy and right for them tops his list of trends that give him hope that there will remain an alternative to what we are all being fed.

What’s most valuable about this book is that the author approached the topic not as an activist, but as a reporter, and so hopefully be received as the balanced work that it is. His tales of pursuing regulators for interviews and being turned down are just as telling as the stories of farmers and advocates who had a great deal to say. But through the lens of a thorough, researched based analysis, many of these claims and the same conclusions advocates have long espoused—most importantly that raw milk, produced and distributed cleanly and safely, should be available legally to consumers who demand it. What’s even more remarkable is that this book depicts this conclusion as a middle ground, rather than an activist’s dream.

Gumpert may not have set out to be an activist, but in a world where the lies are so loud and so prevalent, even quietly telling the truth is a form of activism.

Natural Beekeeping - Organic Approaches to Modern Apiculture

by Ross Conrad
review by H. Paul Berlejung.

"First, do no harm."* "Attributed to the Hippocratic Oath.

Conrad’s book is both a “Hippocratic Oath” and a “How To” book for beekeepers – with a twist. The book tells you how to raise honeybees so that the beekeeper is as omnibus into the hive as possible; and without harmful synthetic chemicals. Conrad must be doing something right; his losses, whether wintered or otherwise, are less than the conventional beekeeper.

The beekeeping books and magazines I’ve read don’t even come close to Conrad’s environmentally sensitive approach to bees and beekeeping. I’m glad I read it and plan to follow most if not all his suggestions.

Some of the techniques Conrad is for and against are: the wide-spread use of sugar syrup and pollen substitutes should be used sparingly if at all, and you can’t harvest any honey from that source as it isn’t from a truly natural source and it also might not be organic sugar. Once you’re confident in your beekeeping he feels you can dispense with all the protective equipment you own except your smoker and a “calm head.” Conrad doesn’t believe in killing or replacing old or poorly performing hives even when local inbreeding claims, but he does suggest alternatives. Another is the use of "drone comb" to eliminate varroa mites for interviews and being turned down are just as tell-
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Don't take it so hard!


This is a completely revised and updated edition of Reich’s 1997 classic by the same name. If you have been reading The Natural Farmer you probably know of my respect for Reich’s work. He is an excellent teacher and his workshops at the NOFA Summer Conference are among the best. Likewise, his books on fruit and vegetables are thorough, well illustrated, and tell you what you need to know just when you realize you need it. I have used the original pruning book as the basis of my own orchard and small fruit plantings, and also for the pruning workshops on our farm that I give annually.

The Pruning Book is divided into three sections. The Basics talks about the purposes of pruning, the tools used to prune, and the plant’s physiological response to pruning. The Plants is the longest section and gives specific advice and instructions about pruning each type of plant. It is broken into chapters on deciduous ornamental bushes, deciduous ornamental trees, evergreen trees and bushes, ornamental vines, edible fruits and nuts, houseplants, and herbaceous plants. Each chapter discusses the forms and habits of growth of the type of plant, lists the members of that group (he uses Latin names for this purpose, but if you didn’t know you can cross check the index to learn that an oak is a Quercus spp.) and gives instructions for how to prune that class of plants. In the third section, Specialized Pruning Techniques, Reich discusses pollinating (pruning trees so that there is only a trunk and a bunch of leaves, without significant limbs or branches), pleaching (“braiding” the limbs of plants so they are interconnected and can form a wall or arched vault over a walkway), topiary (growing trees and bushes as living sculptures in various shapes), standards (a naturally bushy small plant trained to have an upright stem capped by a mop of leaves), mowing (it is, after all, pruning grass!) to different heights, purposes, and effects, bonsai (miniaturization) for various artistic effects, and finally espalier (training a plant to a 2-dimensional form, as against a wall).

Reich wisely knows that his market is far wider than folk like me—who is focused primarily on getting high quality fruit—and includes professional landscape scapers, rose fanciers (there are 8 full pages devoted to the humble genus Rose), back yard gardeners, botanists, and a host of people who simply love to surround themselves with nature. This book contains enough beautiful full color pictures of lovely bushes and trees, cleverly shaped and tended to serve human purposes, to convince anyone that pruning can be a true art.

But readers like me will eschew pruning for subjective things like beauty when instead we can prune for quantities of luscious fruit. So I head straight for the 47 pages on edible fruits and nuts. I have found these pages, explanations, and diagrams most beneficial over the years. The simple drawing “Bearing Habit of Grape” on page 151, for instance, gives you the information you need to get plentiful fruit out of that overgrown tangle of vines on the fence, especially if you were studying with Reich writing on the next page of how to identify and tag the fruiting canes you want to select for bearing next year, identify the buds from which you want the following year’s canes to come, and then severely amputate the rest of the plant, confident that you haven’t ruined it forever!

If you are into fruiting plants—or any perennial plants at all, actually—you will use this book a lot. Take it from me!
This book is sure to inspire action for those already involved with the farm and food crisis in America as well as those interested in learning about it. The three sections of the book look deeply into the history of family farming and the take-over of it by big business, the disastrous moral, social and health consequences of this development and what we can and are doing to solve this crisis. Ron Krupp’s tale weaves facts and personal stories in easy to read prose that is engaging and meaningful. For those considering farming or otherwise engaging with the food system in Vermont, this book is a must read, as most of the inspiration is drawn from Krupp’s life-long experience as a Vermont farmer and food advocate. During the current renaissance of the small family farm and interest in health, farmers, consumers, politicians and writers such as Ron Krupp to be able to provide nutritious food without harming the environment and ourselves for generations to come. If this subject interests you, please read this book.

Managing Breeds for a Secure Future: Strategies for Breeders and Breed Associations

D. Phillip Sprenenberg and Donald E. Bixby

Published by The American Livestock Breeds Conservancy

2007, soft cover, 208 pages, b&w pictures

review by Elizabeth Coe

This book describes the whole book in its title. Published by The American Livestock Breeds Conservancy, and written by the two top veterinarians that have worked many years with that organization, the book outlines the steps needed to be taken to conserve many of the breeds and landraces of farm animals common to our agricultural history over the past centuries. Step by step they define the biology of breeds, breed standards, maintaining breeds, especially delving into how to maintain disappearing bloodlines, associations and registries. The authors accomplish the objectives of their title by giving clear examples of the definitions with relevant pictures of breed examples and histories. I found this especially interesting reading for the information about breed relationships, but had knowledge of the definitions from past experience. Therefore this book is exceptional for those ready to help conserve these dwindling breed gene pools, but may be rather dry reading for those just wanting information about a particular breed, or for a novice reader. It is hoped by the authors, and this reviewer, that many more farmers or beginning farmers will keep these unusual animals for pleasure, profit or, hopefully both. They are not only interesting to look at, but also important specific genetic pools of genes needed for the diversity of life.

Balance: A late Pastoral by Russell Libby

Blackberry books, 617 East Neck Road, Nobleboro, Maine 04555 or chinfarm@gwi.net

2007, paperback, $10.00

review by Jenn Caron

I have long felt that poetry and farming are natural companions as they often give energy and inspiration to each other. In this book Russell Libby shares with us a lyrical harvest from the life he shares with his family on Three Sisters Farm in Mount Vernon, Maine. The deep love and respect he has for the land and his family sings through the words of this volume of 70 or so poems. He shows us many facets of what it is to be a keeper of land and animals that stay with the reader long after the book has been put down.

In Fifteen Summers he speaks to the responsibility and planning that comes with this stewardship:

Now the full extent of the work lies clear ahead.
Take the pine seedlings out of the pasture,
And grace that area carefully;
Keep thinning and cutting down;
A few saw logs there wait for time and need.

In the poem Force of Will Libby questions the sense of our bigger, faster, buy now, pay later culture:

How much can be done through sheer force of will?
With necessity, an ox and an ox.
Fields were cleared,
Stone walls built,
Families fed.
Now we’re scared to slow down to that speed and scale.
We want instant solutions
Investments must be repaid without delay;
Patience is no longer a virtue,
Everything must be done large, big fields, big tractors, big farms

Libby also gives us a bit of a history lesson in Rogation Day, when he explains how on the fifth Sunday after Easter farmers would come together to walk their shared boundary.

Rogation Sunday has disappeared from the calendar, an oversight I choose to ignore.
I just pick my own day to walk the boundaries, Putting the lines of this land in my feet and head.

Libby also includes many beautiful haiku-like poems. The spareness with which he describes a complex meteorological occurrence in Cloud is a fine example of this.

Cloud drops enough rain
to lift it over hill.

In addition to being a practicing pastoralist Russell Libby is also the long time director of Maine Organic Farmers and Gardeners Association. In the poem Fall, he makes a poignant statement that very much encompasses what it is to an organic farmer:

Morning, two lambs tottering, still wet.
Afternoon, lobbyists line up.
Emphasizing costs to their clients of telling us what we eat.
Evening, plant seeds to show faith and control over famine.

This is a very fine collection of poetry that I know I will turn to again and again to give me heart for the
The 3rd Domestic Fair Trade Association (DFTA) Annual Meeting Progress Report

by Bali MacKently with help from Elizabeth Henderson

This is the second year that I have had the privilege to attend the DFTA (Domestic Fair Trade Association) annual meeting as a NOFA representative and I can't help feeling proud. I grew up going to NOFA conferences and always felt that I was part of a movement that was as much about environmentalism and human rights as it was about growing delicious food. The following article is a conglomeration of my thoughts about the topic of fair trade agriculture in respect to the DFTA and a report of the annual meeting.

What qualifies as a basic human right? Freedom of religion, freedom of speech, access to affordable healthcare, etc. I think that everyone would agree that the pursuit of a healthy happy life is front and center. That said, it is odd that although food is fundamentally important to being healthy and happy, it has been reduced to a mere commodity. We pay large amounts of money for vehicles that transport us to where we need to go to earn money to buy our food. We pay for clothing and computers and cell phones, all which makes our lives easier and our time more efficient, but when it comes to buying the food that will determine our health, maybe we don't get what we pay for. We pay large amounts of money to the companies that produce our food, but we do not get to vote on the companies or the food products that we buy (except by purchase and consumption). We pay large amounts of money to the companies that produce our food, but we do not get to vote on the companies or the food products that we buy (except by purchase and consumption).

The DFTA is a transparency service. It aims to endorse ability to trace one's food from the farm to the table. Of all the groups that are working so hard to make change, many challenges to face right now, that we cannot afford to ignore. Our economy, people and planet have so much to lose. The model of food production is not a system that can endure, and how long as an open dialogue continues, we can all work toward achieving an equitable food system.

The DFTA board includes two people representing each of the following categories: processors/marketers, farm workers, farmer groups, retailers/food co-ops, and NGO/civil society. It is fundamentally crucial to the work of the DFTA that all sectors of the food industry are represented.

There are three committees that are currently active: the marketing committee, membership committee, and criteria committee. These committees are working hard to build a solid foundation on which the DFTA can investigate claims and recruit more members. It must also be noted that since many people involved in US agriculture speak Spanish, translations of all documents and translators at the annual meeting are provided to ensure participation of all.

The 2009 DFTA Annual Meeting

The 2009 DFTA annual meeting, once again held at Organic Valley headquarters in Lafarge WI, commenced with a quick review of the consensus decision-making process by which the DFTA operates followed by reports from the board and committees. One of the greatest achievements of 2009 was hiring Kerstin Lindgren as an executive director. Plans for 2010 are to move ahead with 501(c)3 status as well as continuing to revue the dues structure.

Thanks to the marketing committee, the DFTA now has a logo and brochure.

The membership committee reported that they were making a peer-review initiative a priority for 2010. Discussion continues about inclusion of organizations that want to be involved but are not actively or primarily engaged in the agricultural industry, such as faith-based communities.

Changes to the by-laws regarding clarification of what triggers a board vacancy as well as the removal of the executive director. Plans for 2010 are to move ahead with 501(c)3 status as well as continuing to revue the dues structure.

About the DFTA

International fair trade products, especially ones such as coffee and chocolate, have become familiar and sought after by US consumers. The DFTA is an organization that is a common ground for fair trade farmers and consumers. The DFTA is a clearing house for consumers on food justice, holding a fair trade填充 environmentalism and human rights as an equal to growing delicious food. The following article is a conglomeration of my thoughts about the topic of fair trade agriculture in respect to the DFTA and a report of the annual meeting.

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the long term - replace the profit-driven food production model with cooperative values. Make transparency the norm - knowing where your food comes from and who made it. Transform the food system into one that is fair and just without increasing the cost of food to consumers. Redistribute the money in the food system. Shorten supply chains. Get rid of the fast food industry and monopoly of food markets. Eliminate hunger. Establish fair trade as a human right.

Sunday began with presentations by individuals representing the Agricultural Justice Project (AJP), Center for Fair and Alternative Trade at Colorado State University, California Institute for Rural Studies, Equal Exchange, Fair Deal and Farmer Direct Co-operative. Each committee was allowed some time to gather separately to discuss and report to the group at large on existing and ongoing affairs and short and long term goals. The membership committee reported that peer review, categories of membership, and the membership application and review process will be the focus for 2010. The marketing committee reported that redesigning and enhancing the website, developing a new member packet, and outreach to partners and stakeholder groups were its priorities. The membership and marketing committees may coordinate their efforts to design a member recruitment plan. The criteria committee agreed to continue to review and revise the draft criteria addressing membership and outreach to partners and stakeholder groups will be delegated to the committees. It was also decided to develop a plan for DFTA progress. Some of the list priorities. The membership and marketing committees may coordinate their efforts to design a member recruitment plan. The criteria committee agreed to continue to review and revise the draft criteria addressing membership and outreach to partners and stakeholder groups will be delegated to the committees. It was also decided to develop a plan for DFTA progress. Some of the list.

The annual meeting wrapped up with a decision that the membership committee will be given the opportunity to be in on the ground floor and to help set the agenda for the 2010 meeting. The NOFAs have announced that they will be giving a series of workshops on this material. I did the first one at the MOFGA Farmer to Farmer conference in November and will do others across NYS together with Cornell Extension Agent Robert Hadad. I am available to do workshops on labor topics for other NOFA chapters as well. The work that AJP has done so far and the founding of the Agricultural Justice Project (AJP), NOFA's Continual Improvement and Growing Food and Justice for all (GFJI) conference in Milwaukee where I was the "germinator" for a dialogue on bringing fair trade home. The conference took place near the headquarters of the organization founded by Will Allen. Growing Food and Justice was begun as a committee of the Community Food Security Coalition. In 2004 a group of individuals, organizations and institutional partners aimed at dismantling racism and empowering low-income and communities of color through sustainable and local agriculture, but also linking with parallel social and environmental movements."

The theme of the conference was "Food and Spirit: Cross Cultural Understanding for Systems Change." Pre-conference they offered a three-day intensive leadership training and a week of workshops on this material. I did the first one at the MOFGA Farmer to Farmer conference in November and will do others across NYS together with Cornell Extension Agent Robert Hadad. I am available to do workshops on labor topics for other NOFA chapters as well. The work that AJP has done so far and the founding of the Agricultural Fair Trade Association is attracting the attention of the Fair Trade world to the possibility of domestic fair trade in the US. Transfair and IMO, international fair trade certifiers, have both announced that they may be looking to develop domestic fair trade programs. The NOFAs have the opportunity to be in on the ground floor and to help set high standards so that when commercial entities in the US market the claim of local fair trade, it will have real meaning for the lives of farmers, farm workers and other food system workers.

Growing Food and Justice for all Initiative: In my capacity as NOFA's representative to the AJP, I attended the Growing Food and Justice for all (GFJI) conference in Milwaukee where I was the "germinator" for a dialogue on bringing fair trade home. The conference took place near the headquarters of the organization founded by Will Allen. Growing Food and Justice began as a committee of the Community Food Security Coalition. In 2004 a group of individuals, organizations and institutional partners aimed at dismantling racism and empowering low-income and communities of color through sustainable and local agriculture, but also linking with parallel social and environmental movements."
VT NOFA has been working on enabling the markets to accept Food Stamps, which these days take the form of EBT swipe cards. In all, Vermonters spend $8M in food stamps and until this project CSAs, farmers markets and roadside stands have not had access. 16 farmers markets are working with them for 2010.

NOFA NH is helping with refugee farmer organizations and spreading the word about the Agricultural Justice project.

NOFA-NY recently hired a Food justice coordinator, Kristina Keeffe-Petry to work with CSA programs for low income food access. Funding comes from a national Heifer International project to support farmers in transition and connect them with low income consumers. Kristina is also helping to lay the ground work for a network of regional food policy councils in NYS. At the NOFA-NY winter conference, there was a full day on urban community gardens and workshops on how to work for food justice.

NOFA NY has had a change in staff. A dynamic new Executive Director team, Michelle and David Glenn are just getting started. With its new headquarters at Duke Farm, NOFA will be setting up community gardens on some of the land and plans are in the works to distribute some of the produce through food pantries.

NOFA CT is working in partnership with a community gardening organization and planning an urban farming workshop.

NOFA Mass is in the process of spinning off its successful Springfield youth gardening program. The chapter held a popular organic gardening day on April 18, 2009 with 14 sites around the state and a similar food preservation day in September. Goals for 2010, besides re-running these popular workshops in urban areas include taking a hard look at our programming and building a strong component of outreach and delivery of educational services to inner city, low income and gardeners/farmers/landscapers of color. NOFA/Mass is partnering with Nuestra Raices, a Holyoke incubator farmer program to provide 5 on site workshops with NOFA farmers this upcoming summer. The NOFA Summer conference attracts many teen and urban program participants from all over the Northeast. Many of these participants attend with help from Farming Education Funds donated by grants and other conference participants.

NOFA RI hosted an event at Brown University with Elizabeth Henderson speaking on “Local, Organic and Fair Farming”. The event was well attended by interested farmers, consumers, and students.

NOFA’s most basic agricultural justice work has been through developing organic farms and gardens as an alternative to industrialized chemical food production. As I said in concluding my keynote at the NOFA-NY conference: “It’s hard when you’re sweating mosquitos in the sweltering heat of a muggy morning to feel the world-scale importance of your actions. But when we view our simple, everyday actions – growing food, canning, freezing, cooking, buying-selling among people who know one another – in context of their full significance – we are taking power over our lives. We are placing at the center of our convivial communities the people - farmers, farm workers, gardeners - who do that vital work along with those who eat their produce. When we work together in a spirit of mutual respect and caring, we can overwhelm greed. We can learn to cooperate and share in local self-reliance connected with interdependent communities around the world. And when we choose community, the unpredictable becomes possible.”

The Agricultural Justice Project announces the opening of the second of two public comment periods in our 2009-2010 standards revision process. The revised draft standards are available on the project website: www.agriculturaljusticeproject.com

We would like to invite you to participate in this revision process by reading our standards and submitting your comments or suggestions. Comments must be submitted by March 31, 2010. You can email your comments to agjusticeproject@gmail.com, or mail them to AJP Project, P.O. Box 640, Pittsboro NC, 27312.

The AJP standards for social justice have been expanded, with the help and guidance of our Standards Committee, to cover food businesses such as retailing or processors, protection of indigenous rights, and an increased scope of workers rights issues. You may choose to comment on our complete standards document, or on the sections specific to your area of expertise.

Thank you for your participation!
NOFA Membership

You may join NOFA by joining one of the seven state chapters. Contact the person listed below for your state. Dues, which help pay for the important work of the organization, vary from chapter to chapter. Unless noted, membership includes a subscription to The Natural Farmer.

Give a NOFA Membership! Send dues for a friend or relative to his or her state chapter and give a membership in one of the most active grassroots organizations in the state.

Connecticut: Individual $35, Family $50, Business/Institution $100, Supporting $250, Sponsor $1000, Institutional $500

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New Hampshire: Individual: $30, Student: $23, Farm: $40, Sponsor: $100, Basic $20*

New Jersey: Student/Intern $20*, Individual $40*, Family/Farm $70*, Business/Organization $150*, $10 additional per year for subscription to The Natural Farmer

New York: Limited Membership $20*, Individual $40, Family/Farm/Nonprofit Organization $50, Business $155* 

Contact: Mayra Richter, NOFA-NY, PO Box 880, 05477, (802) 434-5202, info@nofany.org

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* indicates voting representative

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VOF Administrator: Nicole Dehne, nicole@nofastaf.org

VT FEED Administrative Manager: Elizabeth McDonald, elizabeth@nofastaf.org

VOF Certification Specialist: Cheryl Bruce, cheryl@nofastaf.org

VOF Certification Specialist: Brenda Hendrix, brenda@nofasummerconference.org

CT NOFA, Box 164, Stevenson, CT 06491, (203) 888-5146, or email: ctnofa@ctnofa.org or join on the web at www.ctnofa.org

NOFA Mass workshops and events

April 10: Gardening Workshops 9-12 am

March 19: Cheesemaking Workshops

NOFA/NH Annual Winter Conference, Concord, NH, for more info: WinterConference@NOFANH.org, 603-654-7595, www.NOFA/NH.org

CT-NOFA Cultivating an Organic Connecticut Conference, Manchester, CT, for more info: 203-888-5146, deb@ctnofa.org

Many Hands Sustainability Center workshops and events, Barre, MA

March 20: Pruning Fruit Trees and Bushes for Greater Health and Production Workshop 1-5 pm

May 15: Farm Work Day 9-12 am with pot luck lunch

for more info: 978-255-2853, farm@mhdf.net, www.manynhands sustainabilitycenter.org

NOFA/NH Annual Winter Conference, Concord, NH, for more info: WinterConference@NOFANH.org, 603-654-7595, www.NOFA/NH.org

Saturday, June 5: HerbFest 2010, Somers, CT, for more info: www.ctherb.org, http://journals.fuquay.com/pages/home.htm, or www.herbfest.com, 860-763-5206, or hawthorne@newman.com

Wednesday, June 9- Mon, June 14: American Society of Dowser Conferences, Lyndonville, VT, for more info: 802-684-3417, www.dowsers.org or info@dowsers.org

Cobleskill, NY 12043, Voice (607) 652-NOFA, Fax: (607) 652-2290, email: office@nofany.org, www.nofany.org

Rhode Island: Student/Senior: $20, Individual: $25, Family $35, Business $50

Contact: Membership, NOFA RI, c/o Dan Lawton, 247 Evans Road, Chepachet, RI 02814, (401) 523-2645, dlawton@comcast.net

Vermont: Individual $30, Farm/Family $40, Business $50, Sponsor $100, Sustainer $250, Basic $155*

Contact: NOFA-VT, PO Box 697, Richmond, VT 05477, (802) 434-4122, info@nofavt.org

*does not include a subscription to The Natural Farmer
Hogs enjoy getting much of their nutrition from a mixed alfalfa and grass pasture. This issue contains news, features, and articles about organic growing in the Northeast, plus a special supplement on Alternative Organic Animal Feed.