

Restoring Heritage Wheat

Friday, June 22, 11-6
MOFGA, Unity, Maine



Maryazarian.com

Restore Almost-Extinct Wheat Biodiversity
& Learn Seed-Saving Arts for Gluten-Safe Foods
with

Gary Nabhan – Renewing America's Food Traditions

Glenn Robertson – Anson Mills Heritage Grains



Eli Rogosa, Heritage Grain Conservancy

Will Bonsall, Mark Fulford – Living Soil

Potluck Meals

growseed.org

FUNDED BY SARE

	<h2>Restoring Landrace Wheat</h2> <p>with Gary Nabhan & Friends</p> <p>Friday, June 22, 11 AM - 7 PM - Potluck Meals</p> <p><u>MOFGA.ORG</u>, Unity, Maine</p>	
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Join us to restore the biodiversity of heritage wheat. Biodiversity is at the heart of community seed systems. Modern wheat, bred in agrochemical-soaked fields for uniformity and high gluten, has replaced the rich biodiversity of landraces world-wide. The commodity-based wheat system has eclipsed traditional gift-based community seed systems. As we face unprecedented weather extremes, burgeoning gluten allergies, patented wheats that farmers cannot save, almost-lost ancient wheats open a portal for organic farmers and gardeners. However our landrace wheats are threatened, many on the verge of extinction.

A treasure trove of delicious, resilient landrace wheats, many that *yield higher in organic fields than modern wheat*, are stored in the world's gene banks, but the process of restoring landraces requires unprecedented vision, ingenuity and cooperation of genebanks, researchers, farmers, bakers and people that love to eat.

This seminar will establish GROW working groups to restore landrace wheat biodiversity, to share practical skills for seed-saving landrace wheats and to co-create community seed systems. Participants will receive elite landrace populations selected by the Heritage Grain Conservancy over three years of on-farm organic trials funded by SARE.

Schedule

- 10:30 Registration
- 11:00 Will Bonsall - Small-Scale Grain Growing
- 12:00 Brown Bag Lunch
- 12:30 Glenn Roberts - Why Restore Landrace Wheat <ansonmills.com>
- 12:45 Gary Nabhan - Restoring Landrace Wheat as Cultural Healing
- 1:30 Mark Fulford - Building Living Soil <teltanefarm.com>
- 2:15 June Russell, NYC Green Market - Creating a Local Grain System for All
- 2:30 Ellen Mallory, NE Bread Project <sites.google.com/site/localbreadwheatproject>
- 3:00 Round-Table - On-Farm Conservation and Seed-Saving
- 3:45 Break
- 4:00 Tom Levesque - Cleaning Farmer-Saved Seed
- 4:45 Eli Rogosa - Evolving Landrace Wheat in Living Soil <growseed.org>
Distributing Seed to Teams - Brainstorming Goals and Roles for 'Eat it to Save it'
- 5:30 Potluck Dinner - Bring your Home-Baked Breads to share!

What do you need and what you can contribute to co-create a local grain community?

growseed.org

Cost: \$25. registration at door. Please bring a **brown bag lunch** and a **potluck** contribution for dinner.

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REGISTRATION

Please email the completed form to Eli Rogosa: growseed@yahoo.com

Name _____ Email _____

Address _____

What are your hopes and goals for the seminar?

Describe your background and experience with grains:

commercial grower _____ number of acres in cultivation _____

home-scale grower _____ scale _____

seed-saver _____

educator _____

baker or chef _____

What is your experience saving seed? _____

What amount of land can you dedicate for small-scale grow-outs of rare wheats?

What is the history of your land and fertility management system?

Do you have grain cleaning equipment or experience? Details:

Each person that receives seed must work as part of a cooperative team, and report back to us on successes, challenges and needs. Who will you work with? Team goals?

We encourage you to view the films on:

'Growing Landrace Wheat in France' - <youtube.com/watch?v=vxgOycrG0GY>

Sacred Economics: <<http://sacred-economics.com/film>>

GROW - Global Restoration of Wheat



What is GROW?

GROW is a network of researchers, genebanks, organic farming and culinary organizations working in cooperation with farmers, gardeners and bakers. We are dedicated to:

1. Restoring almost-extinct biodiversity of landrace grains and the stories they tell,
2. Restoring the ecological farming and culinary arts of traditional peoples, and
3. 'Eat it to save it' market strategies for genetic conservation.

The network's goal is to support cooperation between partner organizations, farmers, gardeners and bakers to conserve and revitalize the traditional arts of on-farm seed-saving, community seed systems and landrace cuisine. GROW received four years of support from SARE, with start up support from the AnsonMills.com and field support from the Maine Organic Farming and Gardening Association <mofga.org> and the farmers in Wadi Fukin, Palestine <growseed.org/wadifukin.html>.

Join us June 22, Unity, Maine at our seminar with Tom Payne, director of the world's largest wheat gene bank <cimmyt.org> and Gary Nabhan, founder of RAFT - Renewing America's Food Traditions <environment.nau.edu/raft>.

For further info and to register:

growseed.org/landrace.pdf



Wheat in 1900



Wheat in 2000

Why GROW?

Biodiversity is at the heart of community seed systems and healthy, nutritious cuisine. However modern wheat¹, bred in agrochemical-soaked fields for uniformity and high gluten, has replaced the rich biodiversity of landrace wheats world-wide. Organic consumers seek the richer flavor and more digestible, less toxic gluten of landraces. Organic farmers seek the organic-adapted landraces that thrive in our fields, with hard-working root systems for nutrient-uptake in organic soils, tall height to compete with weeds without lodging, artisan baking quality, and high nutrition without the gluten allergic responses plaguing us today. As we face unprecedented weather extremes, burgeoning gluten allergies and patented wheats that farmers cannot save, almost-lost ancient and heritage wheats offer an important resource for organic farmers. However our landrace wheats are threatened, many on the *verge of extinction*.

How to GROW

The first step is to be attend a GROW workshop, and become part of a working group to share seeds and practical skills with local partners. Participants will receive elite landrace populations from the Heritage Grain Conservancy, the outcome of four years of on-farm organic trials funded by SARE. People who agree to return a portion of their best harvest will receive seeds for free. We provide one seed packet of each variety to a person, due to the limited supply. Your job is to multiply the seed using organic fertility management, nutrient-dense mineral amendments and cover crop rotations. Each seed is to be planted at 5 lbs per acre (one seed per square foot). Save the largest healthy seedheads for multiplications. For field production, the seeding rate in 15 lbs per acre (one seed per eight inches). Undersow with clover to suppress weeds. All our seed is public domain. If you commercialize the seed, we request that you credit SARE and the Heritage Grain Conservancy for their contribution.

Who GROWs?

GROW is for everyone. Backyard gardeners and seed-savers have a key role in the program. We offer a free Seed-Saving curriculum for educators on: <fedcoseeds.com/forms/seedschool.pdf>, and provide individualized workshops. See: growseed.org/education.html

GROW Living Seedbanks for Community Seed Systems

Biodiversity is the foundation of food security, agroecological health and nutritious cuisine. Prior to the Green Revolution breeding for agrochemical-based systems, almost every farmer was a seed-saver. Community seed systems fostered the dynamic evolutionary processes of natural mutation, natural and human selection and adaptability. Maintenance of landrace wheat in genebanks is essential for long-term preservation, a key link in a long change of actors needed preserve threatened crops. However today, the vast collections of landrace seeds stored in world genebanks are available in tiny amounts of 1 gram to 5 grams of seeds, and then only if you know how to navigate the complex system designed for researchers and plant breeders.

Planting Guidelines: growseed.org/brochure1.pdf

Seed List: growseed.org/catalogue1.pdf

GROW - The Key Role of the Farmer and Gardener in Evolutionary Conservation

In order to maintain vital agrobiodiversity, the role of small-scale farmers and gardeners in landrace wheat's total evolutionary systems needs to be restored. In response, the GROW (Global Restoration of Wheat) initiative has been established. Our goal is to cooperate with genebanks to preserve and enhance agrobiodiversity in the hands of farmers - in the low-input fields where landraces evolved. Just as wild crops are genetic resources that cannot be contained in *ex situ* facilities, ecological relationships such as gene flows between populations, natural adaptation to the environment and climate change, co-evolution of plants-pest-pathogen complexes with selection for durable resistances, and culinary uses are integral components of a landrace crop's total evolutionary system.



Seed-Saving Tips

'Seed-saving and adaptive selection has been the right and responsibility of farmers since the emergence of agriculture. As practitioners of a traditional art, let us reclaim our power to forge crops for our land, our markets and our imagination.' Frank Morton

Organic farmers today can enhance yield and quality of crops by selective seed-saving to improve traits, as generations of farmers have done before us, using the following guidelines:

- * **Decide what variety has potential for improvement.** Select traits to improve based on the variations of the plants in your field and your market needs, such as winter hardiness in cold climate, resistance to disease or rich flavor.
- * **Grow as large a population as possible for a diverse pool of traits.** Trial and compare the same variety from many different sources. **Plant thin** so you can evaluate each plant. We recommend one seed per each square foot, and undersow with clover to suppress weeds. Use your intuition. Allow **wild native habitats** to grow in your fields to attract beneficial pollinators and predators of insect pests.
- * **Rogue** out weaker plants. Don't baby the crop. **Keep the whole plant in mind** as you select to unwittingly select out valuable but less visible traits. Save the best plants for seed.
- * **Harvest** the now-improved line. Remove smaller, lower quality seed. **Repeat** your selection process year-by-year.

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Forgotten Grains of Georgia - Elkana.org.ge - Photo by Tamaz Dundua

RESOURCES

1. **GROW - Global Restoration Of Wheat** - <<http://growseed.org/brochure1.pdf>>
2. **'Forgotten Crops' - Georgia Organic Farmer Assoc** <thegef.org/geff/node/2339>
3. **Video: 'Growing Landrace Wheat in France'** - <youtube.com/watch?v=vxgOycrG0GY>
4. **FAO Manual for On-Farm Conservation**
<fao.org/sd/erp/toolkit/BOOKS/A_training_guide_for_in_situ_conservation_on_farm.pdf>
5. **Restoring Ancient Wheat' - Palestine, Israel & Jordan Genebank 2007 Conference**
- <<http://igb.agri.gov.il/main/index.pl?page=112>>
6. **'Hulled Wheat' - Proceedings International Conference, 1995, Tuscany, Italy**
<bioversityinternational.org/index.php?id=19&user_bioversitypublications_pi1%5BshowUlid%5D=2163>
7. **Where Our Food Comes From: Nikolay Vavilov's Quest to End Famine**, Gary Nabhan
Renewing American's Food Traditions <environment.nau.edu/raft>
8. **Decentralized selection and participatory plant breeding for low-input systems**
<semencespaysannes.org/bdf/docs/dawson-et-al-reviewppb-euphytica2008.pdf>
Collaborative Breeding in Developed Countries <mdpi.com/2071-1050/3/8/1206>
9. **Cereal Landraces for Sustainable Agriculture:** <growseed.org/cereal-landraces.pdf>
10. **Evaluation of Best Practices for Landrace Conservation: Farmer Evaluation**
<http://www.bioversityinternational.org/fileadmin/bioversity/publications/pdfs/1308_Evaluation%20of%20best%20practices%20for%20landrace%20conservation_farmer%20evaluation.pdf>
11. **European landraces: on-farm conservation, management and use**
<http://www.bioversityinternational.org/fileadmin/bioversity/publications/pdfs/1347_European%20landraces%20on-farm%20conservation%20management%20use.pdf>
12. **Breeding for Resilience - EUCARPIA** <growseed.org/breeding-resilience.pdf>

13. On-Farm Conservation:

http://www.bioversityinternational.org/research/sustainable_agriculture/neglected_underutilized_species_on_farm_conservation_neglected_and_underutilised_species_and_the_challenge_of_climate_change_a_new_bioversity_project.html

13. Country Reports - The State of the Seed

fao.org/agriculture/crops/core-themes/theme/seeds-pgr/sow/sow2/country-reports/en/#europe

14. Conservation of Wheat Genetic Resources: cropgenebank.sgrp.cgiar.org

15. Youth Seed-Saving Guidebook - growseed.org/seedstewards.html

Gluten Allergy Concerns:

Modern Wheat breeding may have contributed to prevalence of celiac disease. Hetty C. van den Broeck ncbi.nlm.nih.gov/pmc/articles/PMC2963738/pdf/122_2010_Article_1408.pdf

15. Dr. William Davis, Wheatbelly, wheatbellyblog.com

16. Transforming the Commodity Wheat System sacred-economics.com



Heritage Grain Conservancy



Order on: growseed.org or email: growseed@yahoo.com

COST: \$1. per gram (~100 seeds/gm), or \$20. ~ 1 oz (28 grams) per person.

Seed Gifts*: Request what you can restore to the highest quality & return half of your best harvest to HGC to receive a new variety as a gift-exchange.

Banatka - a Hungarian landrace - Nikolai Vavilov, the renowned Russian plant explorer, characterized Banatka as 'distinguished by high productivity, excellent baking quality and broad adaptability'. Banatka's height out-competes the weeds. Our 'Banatka' is a genepool of Bankuti (Tzsavedeki x Marquis) x Ukrainka, a Banatka selection brought north x Hungarian Banatka.

Bezbanat - a steady workhorse whose productivity and fat seed with stiff-straw. Bezostaja (Kiev landrace x Ukrainka x Crimean Red Turkey) x Banatka. Selected for height for weed competition, high yield and high protein for dependable high yield and quality.

Black Winter Emmer - Majestic, resilient Emmer withstands weather extremes, thriving in drought, almost no fusarium in the torrential rainy season of 2009 when other varieties fell by the wayside. Collected in the Carpathian Mountains by the Hungarian Gene bank and generously contributed to our program. Versatile emmer is savored in soups, as a cracked grain for a hearty breakfast cereal, cooked like rice or milled into fine flour for bread or noodles. In folklore it is recommended for infants, the elderly and pregnant women for high nutrition and digestibility.

Canaan Rouge - Majestic plants, towering tall about the others, were selected from a field of Rouge de Bordeaux in Canaan, Maine, and grown out season by season. Their unusually large awns are highlighted in glowing mahogany hues, with generous seed imparting a rich complexity of flavor and high protein for artisan bread.



Ethiopian Purple ~ This deep blue - purple seeded wheat is rich in anti-oxydents, facultative - both winter and spring. I collected the seed in the Ethiopian shop at the open air market Machane Yehuda in Jerusalem, Israel.

Melange ~ A diverse polyculture of heritage French and Caucasus wheats selected for rich complex flavors, baking quality and health. Gifted by Elkana Georgian organic farmers and French peasant farmers at a biodiversity conference sponsored by INRA French wheat researchers that work closely with the farmers to revive the arts of on-farm wheat breeding for artisan French breads. The farmers grow-out the Melange and select for the traits that do best on their unique farm landscape, then exchange their best seed to restore a community seed system for dynamic crop evolution and community vitality. Some of the varieties have seedhead as big as a ear of corn! Available to seed-savers only for multiplication in cooperation with HGC. We ask experienced growers to return back half of your best harvest in the first year, and you keep the rest.

Poltavka ~ a voluptuous, robust landrace collected in 1915 from Poltavka village in the Ukrainian steppes, a site of ancient cereal culture and grain goddess artifacts.

Red Lamas ~ earliest wheat grown in colonial Mass, brought over in the 1600's. In 1784, William Ellis wrote: 'Red Lammas is deemed the 'King of Wheats' for having deservedly the reputation of the finest, full bodied flour. It fetches the best price at market.'

Rogosa ~ Banatka x Bezostaja selected for fat seed, sturdy stalks & fusarium resistance.

Rouge de Bordeaux ~ beloved by artisan bakers, this French landrace was gifted to Eli by Jean Francois Bethelois, a French farmer-baker-seedsaver extrodinaire

Zyta ~ Highest yielding modern wheat in organic trials in Poland, Zyta, first to emerge in spring in our trials, continues to be a winner with sturdy stalks, wide deep green leaves and high protein.

* Seed as Embodiment of Gifting *

Imagine visiting your local organic farmer, filling your basket with what you need, but instead of paying cash with a thank you, you ask the farmer what is needed, what you can offer in return. Imagine that instead of buying seed in a little packet, a seed bred with dependence on chemicals to survive, a seed bred only to make money, you are given a rare seed cherished over generations, selected for health and nutrition, for rich delicious flavor, selected to grow in your healthy organic soil. Imagine.

*'Hold one seed in your hand and you want to plant it.
Hold a handful of seeds, and you want to share them.'*

Seed-Exchanges arose through community relationships of mutual benefit before a money economy arose. Seeds are the Commons. They are rooted in honesty, good will and creativity. Our money system is an abstract exchange that enabled large-scale impersonal economies. In contrast, a seed-gift is a person-to-person relationship. It is more rewarding than anything money can buy. It fosters the healthy relationships that are the foundation for a local food system. As skill-sharing, open-source coding and time banks are emerging, a community seed system can not only restore almost-extinct landrace seeds but can transform today's industrial wheat system back into the life-giving relationships of community traditions. It starts with the seed.

Gifting transcends yet includes money. Money can be involved, but it's not primary. The value of a Gift is unique, expressing direct caring, not a monetary exchange. It can invite holiness into our lives. We give because it is good, not to get anything in return, but to create a caring relationship. We give of our hearts, not only with money, but through our talents, our skills, our leadership and our love.

The creative community that emerges from a community seed system is dynamic and vital. Anyone can be passionately involved in the community that is created through their seeds. We become producers of our seed and our food culture—as a collaborative community that the Gift Economy nourishes.

