Moving Toward Organic

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What Exactly is Organic?

Produce grown or raised by organic method

- efficient use of resources
- preservation of biodiversity
-ecological balance/natural cycles
-typically limited pesticide use
-ongoing soil health as a primary focus
-certified by third party certifier

“Organic Oreos are not a health food. When Coca-Cola begins selling organic Coke, as it surely will, the company will have struck a blow for the environment perhaps, but not for our health. Most consumers automatically assume that the word "organic" is synonymous with health, but it makes no difference to your insulin metabolism if the high-fructose corn syrup in your soda is organic.”

— Michael Pollan, *In Defense of Food: An Eater’s Manifesto*

What Does *Not* Count as Organic?

- Say no to Miracle-Gro! Even limited use of certain fertilizers and pesticides can drastically affect plant and soil health
- Neglect does not equal organic
- GMO seeds typically are avoided by organic growers

National Organic Program and Certification

- State-run or accredited private agency evaluates farmers
- Those who satisfy standards can market produce as “USDA Certified Organic.” Basically the gold standard for eco-labels
- Guam does not currently have organic certification board
- Produce can still be marketed as “grown by organic method”

Organic Certification Requirements

- Farmland must be free of prohibited substances for at least 3 years
- No GMO products, sewage sludge or irradiation
- Usually, organic or untreated seeds
- No synthetic pesticides, herbicides or fertilizers
- Detailed record keeping

Farm to Table, Guam

So Why Grow Organic?

- Long-term land health
- Higher selling price and growing demand
- Investment in biodiversity of crops and surrounding environment, including community
- Philosophy of sustainability
- Preservation of heirloom seeds preserves both biodiversity and indigenous cultures

Home garden, Atlanta GA

Pesticides: Why Not?

- Produce grown without conventional pesticides is touted as tasting better and as healthier for the consumer.
- Over 98% of sprayable insecticides and 95% of herbicides reach a destination other than their target species
- Runoff carries pesticides to aquatic areas, groundwater sources, grazing areas and human habitation. Agricultural pesticides were found in 90% of wells sampled in 2007 U.S. Geological Survey.
- Active ingredients in conventional pesticides, insecticides, herbicides and fungicides are known to cause adverse reactions in insect, bird, reptile, amphibian and small mammal populations, including beneficial species.
- Repeated application increases pest resistance, which can lead to pest rebound and secondary pest outbreaks.
- Nitrogen fixation problems in higher plants, poor root development.
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Who Grows Organic?

- Prior to 1940, all farms were organic by default
- According to 2012 U.S. census, 16,525 farms classified as organic. Organic farms sold $5.5 billion in organic products in 2014, an increase of 72% since 2008
- Worldwide, organic agricultural land has grown from 27,180,000 acres in 1999 to 107,982,000 in 2014 (Willer, Lernoud 2016)
- Organic farms in U.S. vary from a few acres to thousands, but most are smaller than 100 acres, according to USDA data.

Vilicus Farm, Montana, 4700 acres
Heirloom and specialty grains, oilseeds, pulses

Multiple Organic Approaches

Permaculture Method
Tolstoy Farms, Washington

Permaculture:
Utilizing the land according to its natural features; working with, rather than against, local ecosystems. Focus on relationships between elements, natural patterns.

- **Care for the earth**
- **Care for the people**
- **Return of the surplus**

Agroforestry/Polyculture Technique
Kolea Farm, Pupukea Oahu
Hawaii

Agroforestry:

Tree and shrub crops are grown around or among ground crops and pastureland in multi-story farm systems. Traditional Pacific Islands farm.

Polyculture:

Multiple crops in the same space, mimicking diversity of natural ecosystems

Aquaponics
University of Guam Triton Farm

Aquaponics:

Cultivating plants in water which is also being used for aquaculture (raising fish, snails, prawns). Fish waste is broken down by nitrifying bacteria and utilized as nutrients by the plants. Water is then recirculated into the aquaculture system. Size and complexity of aquaponics systems can vary widely.

Bio-intensive farming/Hügelkultur

Revive the Roots

Smithfield, Rhode Island

Hügelkultur:

Permaculture technique. Raised beds constructed on top of decaying wood and other biomass materials, mimicking natural process of forest floor decomposition. Ideal for areas with poor or compacted soil. Traditional farming technique in Germany/Eastern Europe.

Organic Farming Methods
vs.
Conventional Methods

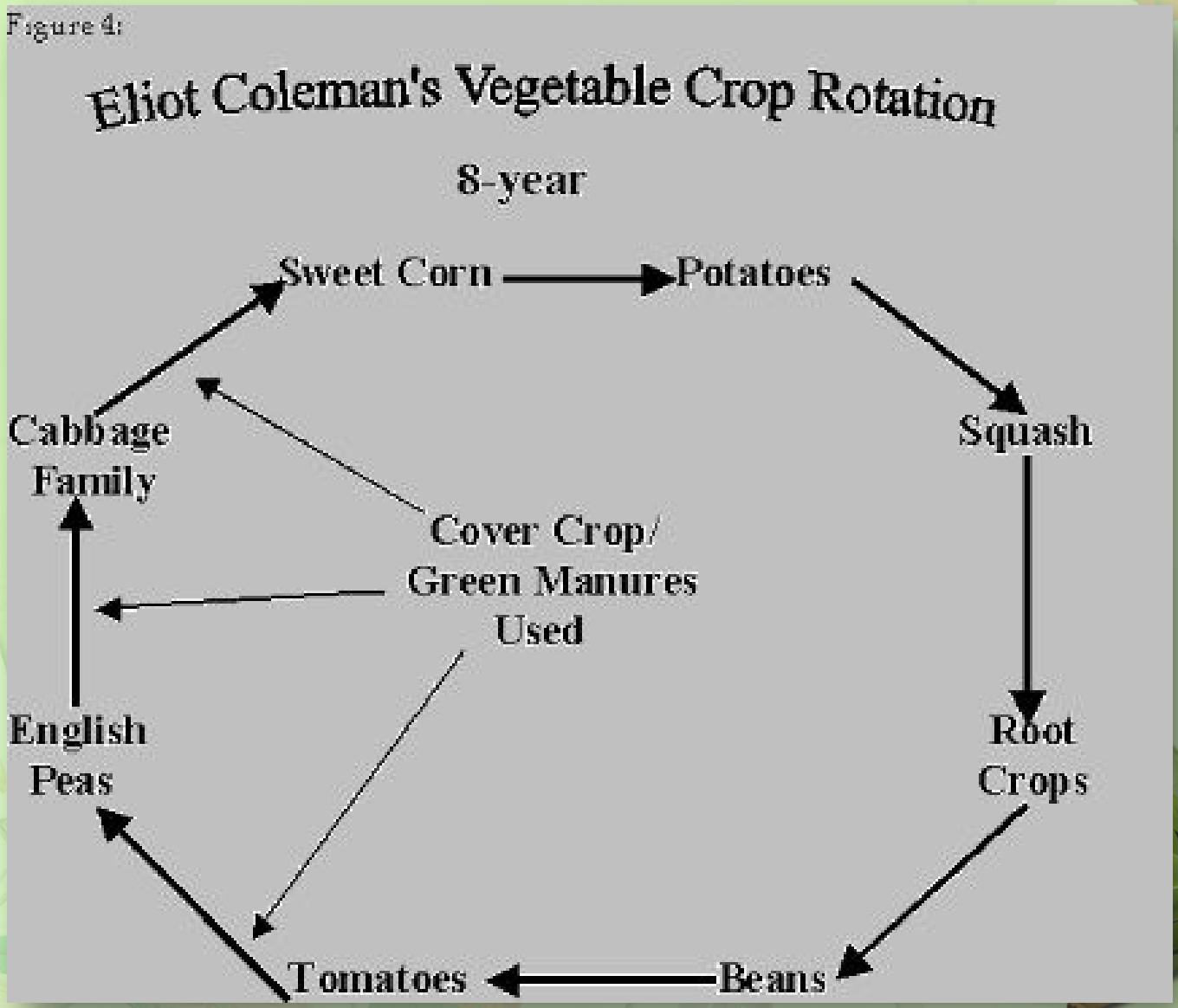
- Hand weeding
- Mechanical control
- Mulches
- Cover Crops
- Crop Rotation
- Dense planting
- Intercropping/Companion Planting
- Natural Fertilizer Production/Composting

- Herbicides
- Persistent pesticides
- Fallow land
- Mono-cropping
- Synthetic nitrogen fertilizers

Natural Pest Management

- Build up your soil's biodiversity
- Intercropping/companion planting
- Utilize beneficial insects, insect traps and barriers
- Sanitation: remove infested plant materials and pest habitat, sterilize tools and planters
- Use bio-rational and organic pesticides/insecticides/fungicides

Figure 4:


Eliot Coleman's Vegetable Crop Rotation
8-year
Sweet Corn
Potatoes
Squash
Root Crops
Beans
Tomatoes
English Peas
Cabbage Family
Cover Crop/ Green Manures Used

So You Want to Go Organic

First Steps:

- What are you already growing?
- Where do you get your seeds?
- How much space do you have?
- What problems do you have?
- What techniques do you use?
- How do you approach land and water management?
- Assess the health of your soil
- Create a plan
- Keep records

Getting There: Your Resources

- **University of Guam Cooperative Extension, ANR Unit**
  (Soil and plant testing, pest diagnostics)
  671. 735.2080
- **Agriculture Development Services**
  (Seedlings, farmer certification, crop compensation)
  671.300.7971
- **Farm Service Agency**
  (Direct operating loans, non-insured crop disaster program)
  671.300.8550
- **USDA NRCS, Pacific Islands**
  (Farm plans, soil and water conservation tactics)
  671.735.2111

Organic Education Resources

- IFAS Florida Extension Service
  www.ifas.ufl.edu

- CTAHR Hawaii Extension
  www.ctahr.hawaii.edu

- Seed Savers Exchange
  www.seedsavers.org

- University of California Extension, Small and Organic Farm Advisor
  www.ccsmallfarms.ucanr.edu

- Texas A&M Extension
  www.agrilifeextension.tamu.edu

Questions? Comments?

Farm to Table Guam

671.647.0100

www.farmtotableguam.org

Thank you!