

The MSU Student Organic Farm

A ten year review
and
A look at what's new



Consider
Multiple
Perspectives

Farming Perspectives

Over time the boundaries disappear and things just are.



Guiding Principle

A Vision and A Task

A vision without a task is a dream.

A task without a vision is drudgery.

*A vision and a task
Are the hope of the world.*

Guiding Principle

Integral Agriculture

*Farmers, friends and families
using facts and feelings to
physically, faithfully and fearlessly
farm*

*front yards, forests and fields
for food, feed, fodder, fiber, fuel, flowers,
fertility, fun, freedom, fairness
and the future.*

John Biernbaum

Presentation Themes

- Perceptions of the farm – do people in MSU know what we do at the Student Organic Farm?
- What is Organic Farming?
- Students, staff and faculty working together in a culture of mutual caring and support
- Personal, community and ecological sustainability
- Diverse partnerships and connections
- Catalyzing and cultivating growth and development
- Engaged and experiential learning through daily process and “struggle” (resiliency)
- Becoming native to a place
- For the Health of it!
- Integrated teaching outreach, research & service
- Integrated academics and operations – in class and out of class learning through engagement with daily activities.

Working and Learning Together



Every Saturday for 10 weeks,
10 to 30 students working
to build three hoophouses.
Fall Semester, 2002



August 2011 - D-Town Farm



Continued strong interest in hoophouse production systems.



February 2011 - UMOFC Organic University

**Michigan State University
Student Organic Farm**

Core Values

*Diversity, Trust, Love, Curiosity,
Awareness and Oneness*

Mission

*To cultivate a sustainable
community supported student farm.*

Organic Farming

Goal: Practice organic farming methods and maintain annual organic certification.

- Living Soil/Feed the Soil
- Compost Production and Use
- Insect, Disease, and Weed Management
- Whole Farm Management

Diversity

Goal: Increase the diversity of organisms, people, and food on the farm.

- Crops
- Animals
- People
- Food

Local Food

Goal: Expand and refine year-round local food production, harvest, storage and marketing methods.

- Hoophouses
- Storage and preservation
- Community Supported Agriculture (CSA)
- Seasonality

Experiential Learning

Goal: Develop an experiential learning Curriculum for students and people of all ages and learning styles.

- Living Classroom .
- Farming
- Environment .
- Sustainability

2003-2005

MSU SOF 10 Year History/Vision 2005/Rev 07

2000 Early planning and discussions in MSAN RSO, What would a student farm look like?

2001 Salad Greens project - first 2 greenhouses at farm site, SOFI RSO formed, "What is Organic" class..

2002 Vision of year-round CSA funded farm, soil building started, W.K Kellogg grant - 3 more greenhouses built.

2003 "What is CSA" class, CSA initiated with 25 members and ~ 1 acre, USDA grant, RISE & tours.

Past

2004 50 CSA members, ~ 3 acres, many tours, soil building continued, EFFE RSO started.

Present

2005 CSA Core Group, EMLL Dorm, ~7 acres planted, perennial (fruit) planting initiated for biodiversity, purchased tractor, greenhouse barn, OFCP Planning Started.

2000 1 2 3 4 2005 6 7 8 9 2010

Future

2006 Permaculture/polyculture plot planted; new greenhouse, OFCP and new course development

Many Possibilities for the Future:

- Office space - straw bale construction
- Increase emphasis on Permaculture and Biointensive methods
- More perennials (fruit, herb, flowers) in the rotation
- Emphasis on energy efficiency to address decreasing fossil fuels
- More mechanization and alternate bed rotation system
- Use of woodlot.
- Build a pond or constructed wetland
- Teaching certificate program or undergrad specialization
- Coordination of CRAFT internship program in Michigan
- Introduction of animals
- Greater participation by other CANR departments
- Integration of "production", "policy", "environment", "people"

2007 Start OFCP with 10 students, regular campus farm stand, farmer outreach, on-line courses, teaching building at HTRC

2008 OFCP with 20 students, Begin closed nutrient cycle.

2009 ??????????????

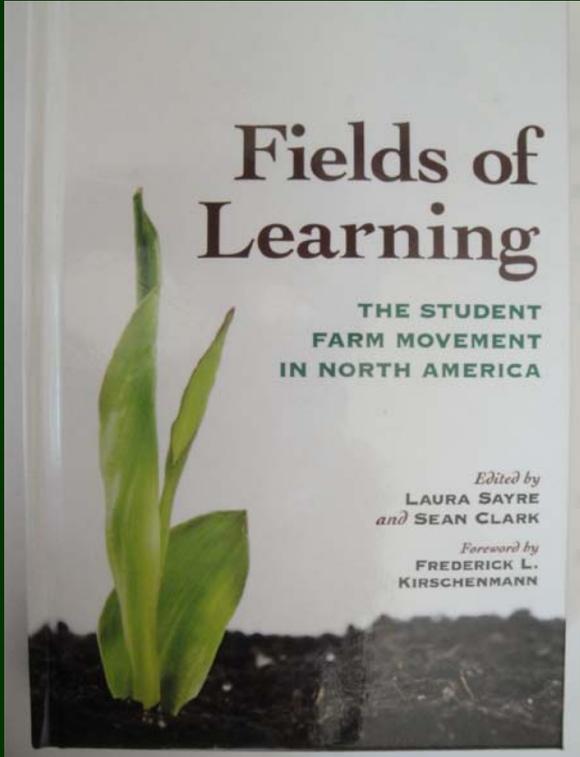
2010 Initiate Plan for the next decade.

Mission

To cultivate knowledge and human capacity in organic and sustainable agriculture for students, farmers and educators.



2008 Strategic Planning



Fields of Learning

THE STUDENT
FARM MOVEMENT
IN NORTH AMERICA

Edited by
LAURA SAYRE
and SEAN CLARK

Foreword by
FREDERICK L.
KIRSCHENMANN

Phases of Development

1994-1999 Preparing the Soil

1999-2002 Sowing the Seeds

2002-2005 Developing Roots and a
Healthy Plant

2005-2008 Flowering

2008-2010 Fruiting and Dispersing
Seeds.

Chapter on SOF 2010

SOF 12 Year Time Line

Planning and Vision

MSAN-Planning

SOF
Planning

LT led visioning

Teaching Plan
EFFS

CANR Strategic Plan
"Program in or program of"
HH Gala 1

Research Funding

USDA/Mott
GREEN

Kellogg FAS
USDA HigherEd

MSU for OFCP
USDA Organic Partnership

Sustainability-Dept of Ed
SMEP- Ethics

Teaching Programs

MSAN
RISE
Bailey Scholar
SpecTop
Organic

SpecTop
CSA
RISE Seminar1

SpecTop
Practicum
Program and
Course Development

OFCP1
SAFS

Sustain
Special

OFTP1
SOH

00

02

04

06

08

10

99

01

03

05

07

09

11

People

John
Susan
Laurie

Melissa
Andy F.
Seth, Michael

Michelle (Spr)
Emily (Fall)
MSJ, Lynn

Jeremy

Corie
Adam
Jay

Tom

Dan

Place / Hoopouses

1&2

3,4, WH

Teaching

Wash
Pack

Salad
Palace

Compost
& Moveable

Markets:

YR CSA 1 (25)

Farm Stand 1

CSA Sum1

RHS 1

Outreach

NCSARE

HH at
Giving
Tree
Farm

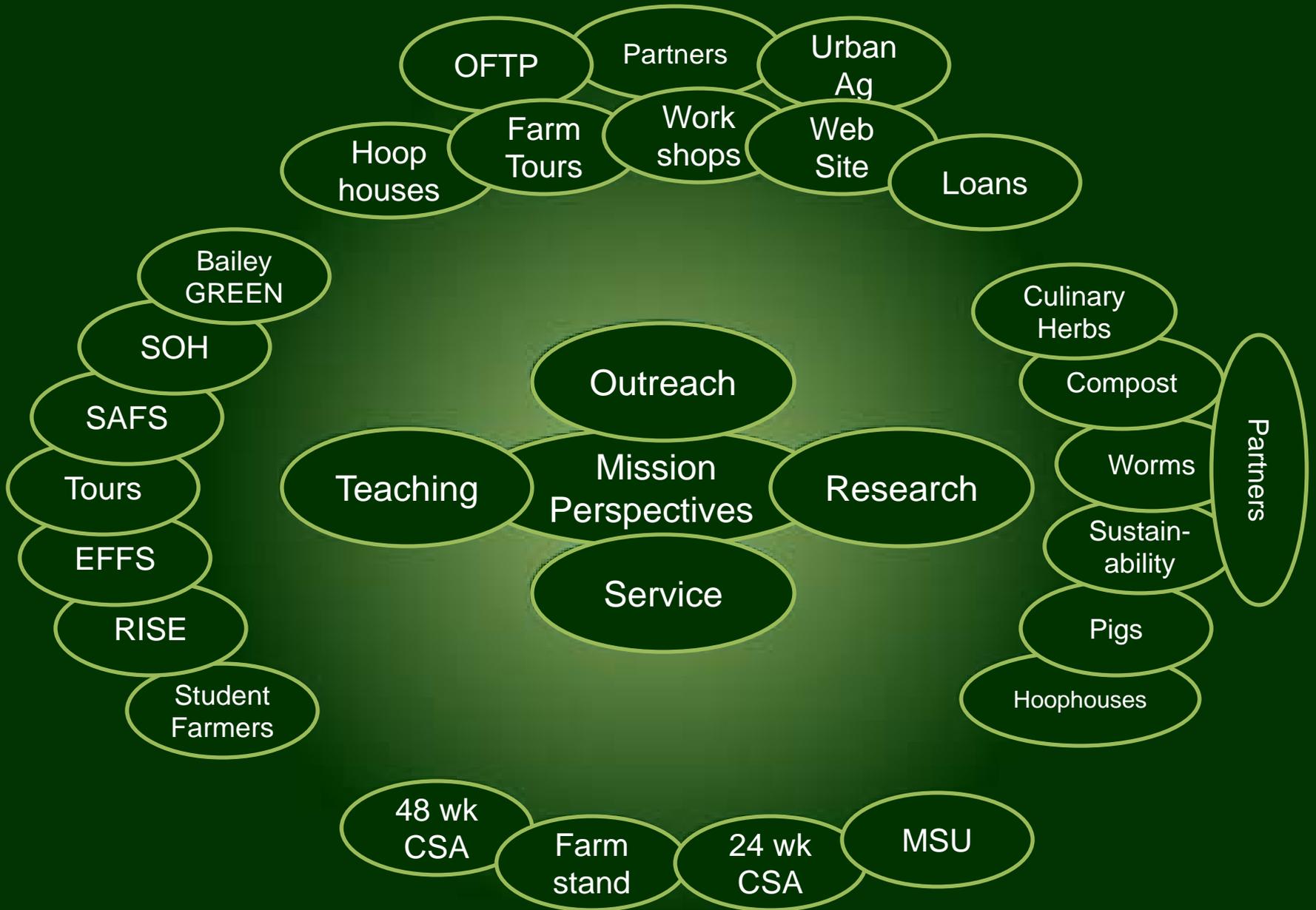
HH at
Riddle
School

MIFFS Workshops

RMA-----
NRI 9 houses--GREEN 3 houses--

Greening of Detroit
Flint Ruth Mott

DELEG
Kellogg



Perspectives

- Purpose and Priorities
- People
- Place
- Process
- Programs
- Partnerships
- Power



Outreach

Teaching

Research

Hoop houses

OFTP

Farming

Markets

Partners

CRFS

Bailey GREEN

MSU Operations

EFG

Grads

Cold Storage

Faculty Staff

People

Development Perspectives

Place

Composting

Employees

Purpose

Livestock

Volunteers

Fields

Students

Hoophouses

To cultivate knowledge and human capacity in organic and sustainable agriculture for students, farmers and educators.

People



People



People

The Hoophouse Gala Scholarship Fundraiser



People

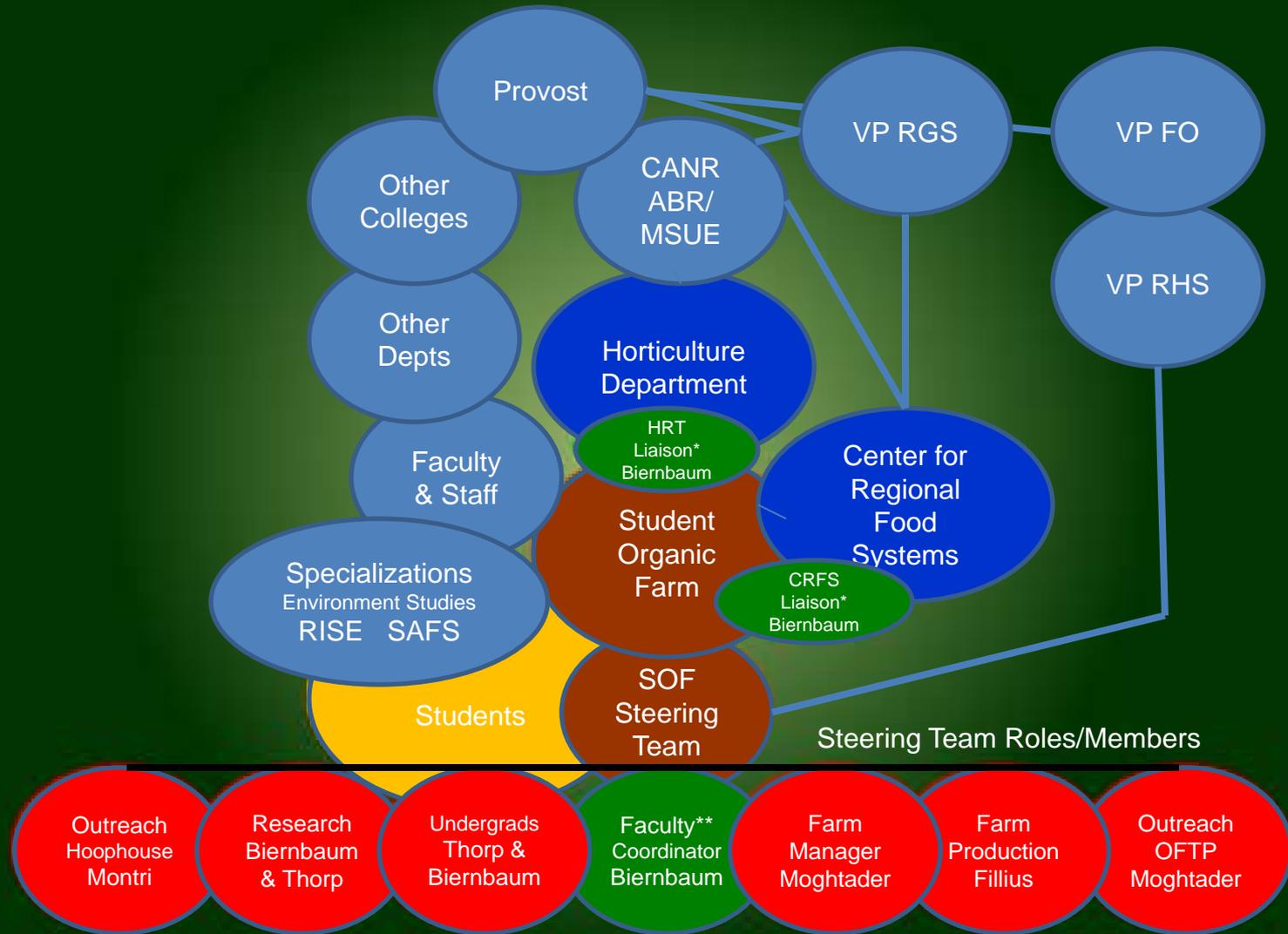
Student Centered Learning



People Meaningful Work



MSU Student Organic Farm Organization and Relationships



*May also be a Steering Team Member
 **May be outside of Horticulture

Student Organic Farm: The Place

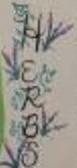
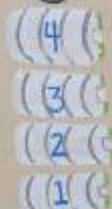
Land was in fruit trees from 1965 to 1995.

Start was hoophouse research in 2001.



Student Organic Farm

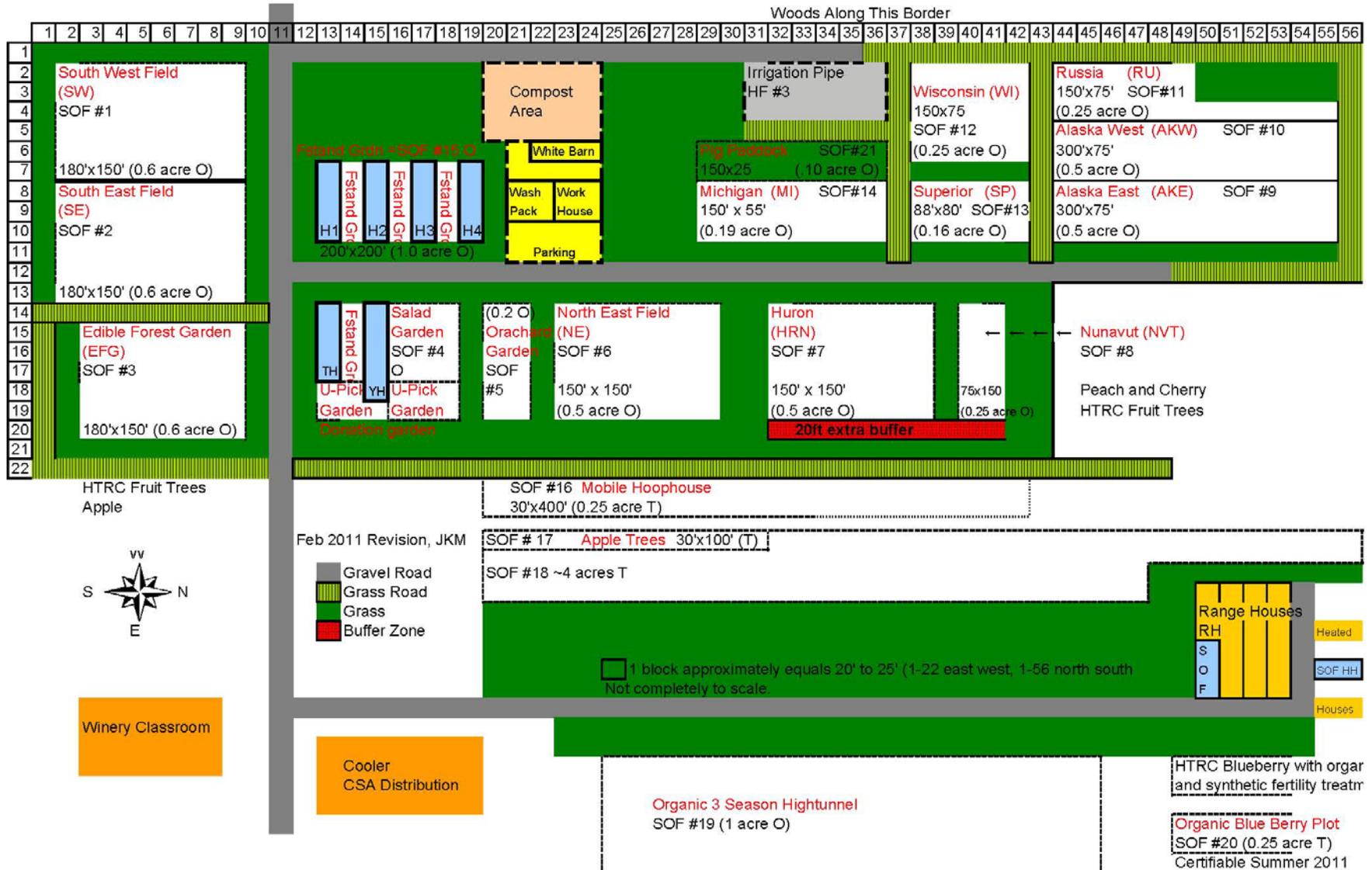
15 08



Student visualization of the farm painted on a wall in the central farm “work house”.

Map for Certification

MSU Student Organic Farm: 2011 Site Layout





The Place – About 15 acres



Seven Fields at 0.5-0.6 acres

Initial Hoophouses - 2003



Additional Hoophouses 2006 & 2008



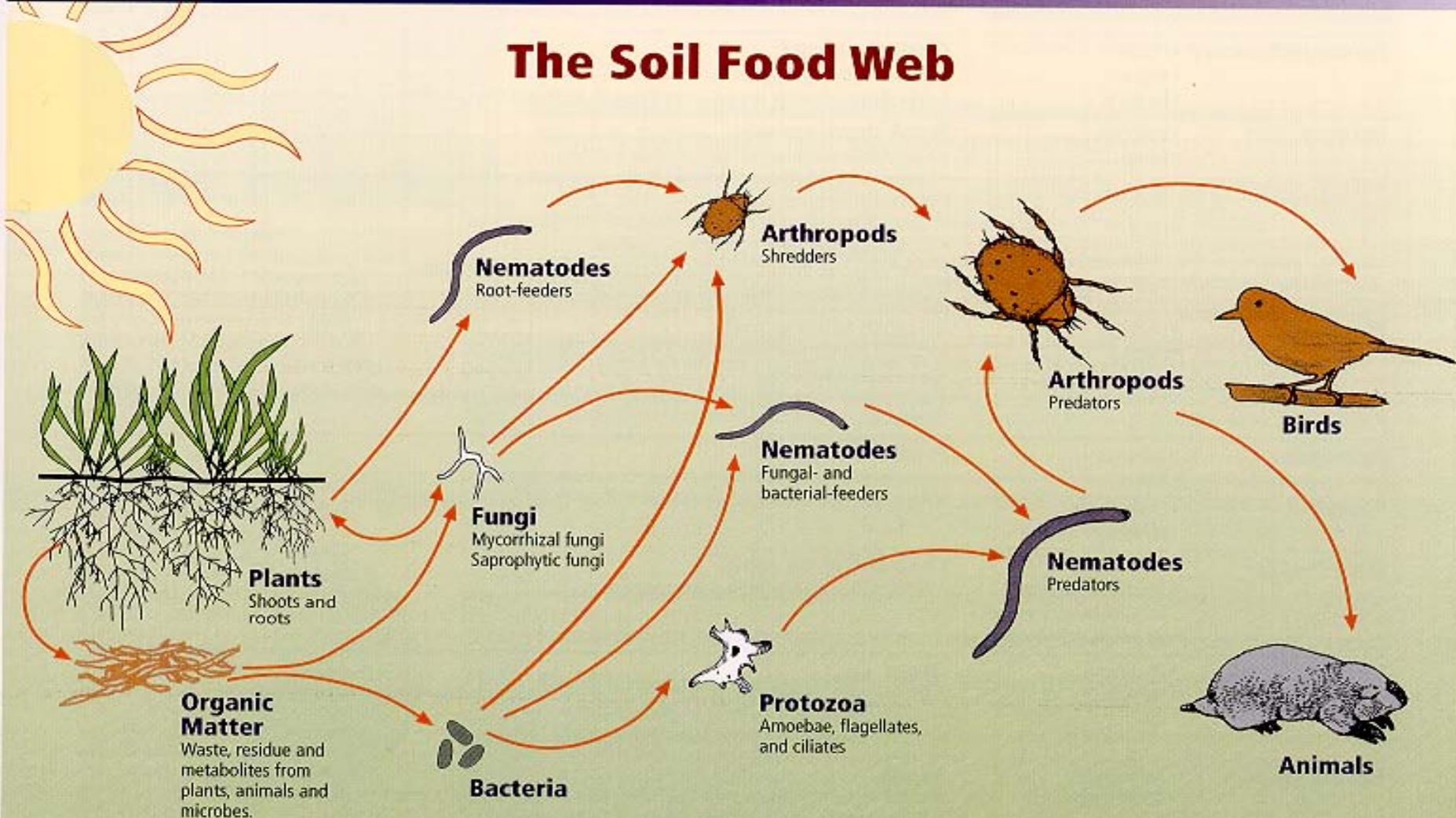
Common Curriculum (Programs)

- Build Soil Organic Matter
- Cultivate Diversity
- Balance the Farming Seasons
- Diversify Marketing Opportunities

Living Soil – Billions of Organisms



The Soil Food Web



First trophic level:
Photosynthesizers

Second trophic level:
Decomposers
Mutualists
Pathogens, parasites
Root-feeders

Third trophic level:
Shredders
Predators
Grazers

Fourth trophic level:
Higher level predators

Fifth and higher trophic levels:
Higher level predators



Why Organic?

Healthy People



Healthy Animals



Healthy Plants



Healthy Soils

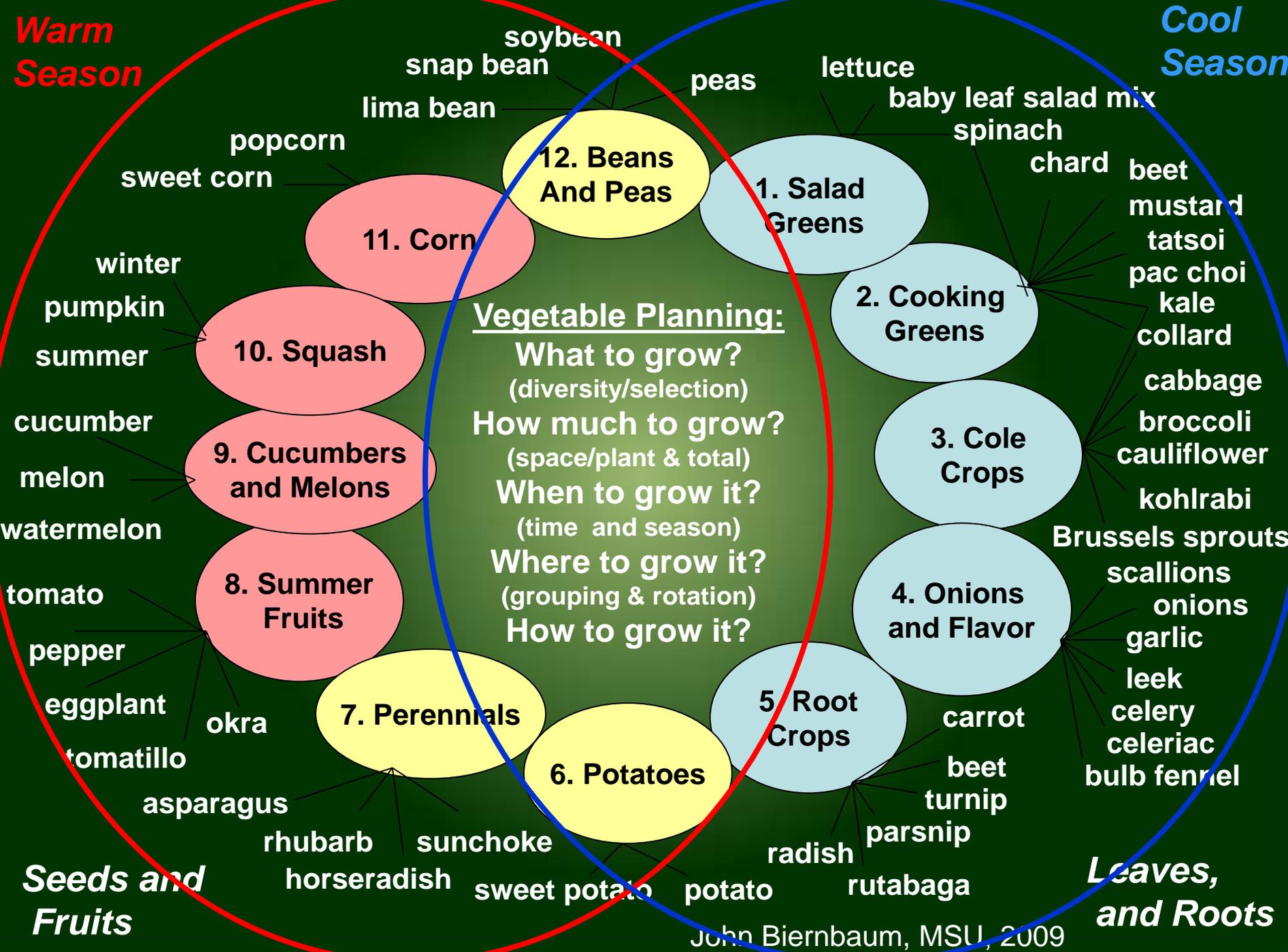


Organic Certification

- Organic Systems Plan describes the process that is certified.
- Initial in 2004 with OGM – Organic Growers of Michigan
- Since 2006 with OEFFA – Ohio Ecological Food and Farming Association

**Warm
Season**

**Cool
Season**



Vegetable Planning:

What to grow?
(diversity/selection)

How much to grow?
(space/plant & total)

When to grow it?
(time and season)

Where to grow it?
(grouping & rotation)

How to grow it?

**Seeds and
Fruits**

**Leaves,
and Roots**

SOF Field Vegetable Rotation

Crop Group →	Summer Fruit	Early Crops	Corn	Potato	Squash/Melon (vines)	Late(Fall) Crops	Green Cover
Rotation Order →	1	2	3	4	5	6	7
Half A	Tomato, Pepper, Eggplant	Garlic(fall), Onions	Sweet Corn, Pop Corn, Flint Corn, Soybean	Potato	Winter squash	Fall brassicas	oats vetch or sorgxsudan;
Half B	Cucumber, Summer squash, pumpkins	Spring Brassicas Root crops Peas		Leek Celery Green beans	Melons	Fall root crops	
Other	Mulch	Buckwheat Late Vetch	Under sown clover	Fall	Fall	SprSum cover crop	Compost?

MSU SOF Tunnel Rotation

	Beds	% Space		Beds	% Space
Fall Early-long residency				Spring Early -	
Scallions	8	3.0%		BLSM	32 12.1%
Carrots	8	3.0%		Lettuce	30 11.4%
Kale	24	9.1%		chard	10 3.8%
Chard	14	5.3%		kale	10 3.8%
Collards	8	3.0%		collard	6 2.3%
Parsley	8	3.0%		spinach	10 3.8%
	70			Carrot	10 3.8%
Fall Late-Long Residency				radish	6 2.3%
BLSM	60	22.7%		beet	6 2.3%
Fall Late-Short Residency				turnip	6 2.3%
Lettuce	36	13.6%		scallions	8 3.0%
Spinach	36	13.6%			134
Radish	14	5.3%		Spring Late-Summer Residency	
Turnip	8	3.0%		Tomato	40 15.2%
Cilantro	8	3.0%		Pepper	20 7.6%
Choi	8	3.0%		Eggplant	20 7.6%
Tatsoi	8	3.0%		Cukes	20 7.6%
Komatsuna	8	3.0%		SumSquash	20 7.6%
Napa Cabbage	8	3.0%		Beans	10 3.8%
	134				130
Total Beds	264	100.0%		Total Beds	264 100.0%







Season Extension

Balance the Farming Seasons

- Field Production Planning
- Hoophouses
- Cold Storage

Spring 2003 – First CSA Day



MSU-SOF 40°F Cooler





Paul and Sandy Arnold in New York State

NOVEMBER 22ND 37 DIFFERENT ITEMS FOR SALE!

2010 Production Stats

- 4.5 acres under cultivation
- 20,000 ft² passive solar greenhouse space
- ~48,000 lbs of produce harvested in 2010
- 12 organically fed and field raised hogs
- 60 organically fed free range laying hens



Organic egg production initiated by Environmental Studies Specialization and funded primarily by egg sales.

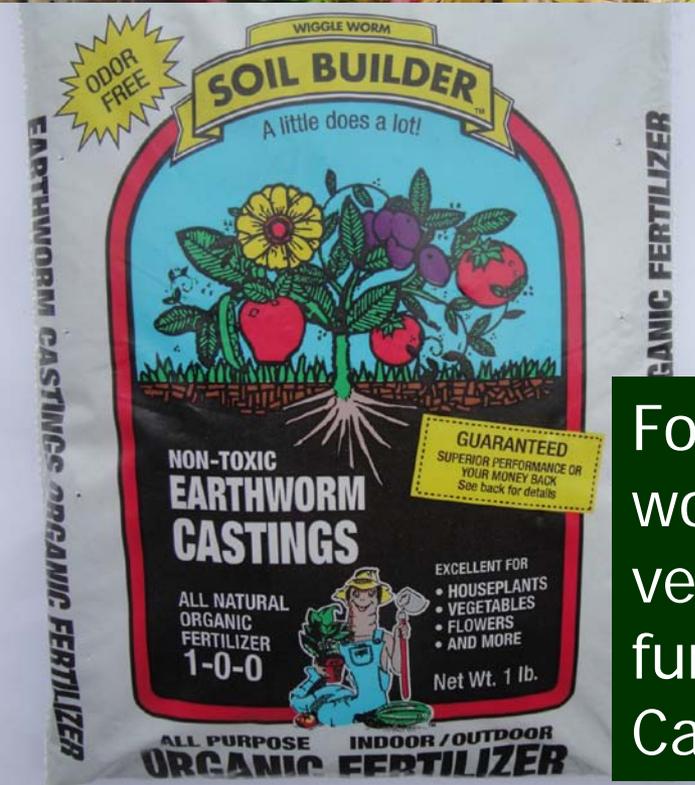


Swine husbandry and pork production funded primarily by sale of meat.





Bee keeping and honey production initiated and funded by the Environmental Studies Specialization.



Food preparation residue worm composting and vermicompost production funded by the Office of Campus Sustainability.

Diverse Markets

- Community Supported Agriculture
 - 70 year round shares (family of 4)
 - 70 summer only shares
- On campus farm stand
 - 7 months
 - Thursdays April through October
- Campus Dining Halls
 - Broady, Yakeley, The Gallery, Food Stores
- \$156,000 in total produce sales for 2010



Weekly CSA Distribution and Campus Farm Stand.

/2006

05/24/2006

Students

- Undergraduate Farm Crew
 - 8 to 10 undergraduates from across the college and university gaining hands on experience in organic farming
 - Most are CANR majors, but we also have students from other colleges
 - Central to the mission and vision of the farm as a *Student Organic Farm*
- Ecological Food and Farm Stewardship Registered Student Organization

Education

- Teaching Site for MSU Courses
 - Over 15 MSU courses use the SOF each year for their instruction
 - LCC courses also use the SOF as a field trip site for many of their courses
- Educational Tours
 - Over 1500 people toured the SOF in 2010

Organic Farmer Training Program

- 9 Month non-credit certificate
 - March 1 through November 15.
- 2012 is our 6th year
- Cohorts are limited in size to 16 students
- 60 students have completed the program over 5 years and 16 completing Nov 17.
- 95% of them are employed in the organic field

Outreach for rural and urban growers

- 75 hoophouses built
- 2500 rural and urban growers assisted
- Working with groups in Lansing, Flint, Detroit and other areas on urban agriculture

Outreach Organizational Affiliations

- MOFFA
- MIFFS
- NMSFC
- GLF&VE
- MLUI
- MOSES
- Greening of Detroit
- Ruth Mott Foundation (Flint)

MSU Organic Research Opportunities

People Perspective: Faculty and Staff

*Kellogg Biological Station (KBS)

+ Student Organic Farm (SOF)

Horticulture

Behe
Beaudry
Biernbaum+
Brainard
Fillius+
Hanson
Lang
Moghtader+
Montri+
Ngouajio
Perry

Anthropology

Delind

Entomology

Bird
Grafius
Greishop
Gut
Issacs
Landis, D
Landis, J
Tuell
Whalon

Plant Pathology

Schilder
Sundin

Crops and Soils

Cotton
Kelly
Renner
Robertson*
Snapp*
Sprague
Taylor

Animal Science

Rowntree
Rozeboom
Siegford
Swanson
Utsumi*

CARRS

Bingen
Hamm
Howard
Morrone
Smalley
Thorp+
Thompson

AFRE

Swinton

FSHN

Alaimo

Extension

Himmelein
Goldy
Irish-Brown
Kalchick
Leep
Marinez
Mutch
Rossman
Sirrine
Schwailer
Pioch

Sociology

Stuart*

55+ Faculty and Staff involved in Organic projects; Not intended as complete.

Organic Research Associated with or Assisted by SOF

- Transplants; Ngouajio et al
- Blueberry; Hanson et al
- High tunnel raspberry, cherry, apple stock; Hanson, Lang
- Cover crops for vegetables; Brainard et al
- Compost and compost tea for plant health; Schilder
- Perennial grain production; Snapp et al
- Greenhouse biocontrol; Greishop et al
- Dry beans; Renner et al
- Compost for carrots; Melakeberhan
- Native plants for beneficial insects; Landis and Isaacs
- Entomopathogenic nematodes for orchard pest management; Whalon

Center for Regional Food Systems

Mott Group for Sustainable Food Systems, Student Organic Farm and affiliates have developed the Center for Regional Food Systems at MSU.

CRFS mission and vision:

- Our mission is to engage the people of Michigan, the United States and the world in applied research, education and outreach to develop regionally integrated, sustainable food systems.
- Our vision is a thriving economy, equity and sustainability for Michigan, the country and the planet through food systems rooted in local regions and centered on food that is healthy, green, fair and affordable.



Function as a boundary organization within MSU

- Boundary organizations straddle the shifting divide between politics and scholarship. They produce outputs for principals in both domains and facilitate the transfer of useful knowledge between scholarship and policy.



MSU CENTER *for* REGIONAL FOOD SYSTEMS

Definition adopted and modified from: D. H. Guston, W. Clark, T. Keating, D. Cash, S. Moser, C. Miller, C. Powers (2000) *Report of the Workshop on Boundary Organizations in Environmental Policy and Science* (accessed at <http://www.hks.harvard.edu/gea/pubs/huru1.pdf>)

MSU Center for Regional Food Systems Big Hairy Audacious Goals (BHAGS)

1. Achieve the six goals of the Michigan Good Food Charter
2. Serve as a nationally recognized resource for regional food systems research, education, and outreach
3. Develop an international regional food systems portfolio





Vermicomposting of Campus Food Residuals and Waste

Part 1: Summer 2010 to Fall 2011

Student Organic Farm:

John Biernbaum, Laurie Thorp, Dan Fillius,
Brendan Sinclair, Kirk Green, Chris Lamkin,
James Manning, Kim Forte, Emily Mckay

Residential and Hospitality Services:

Venie Gore, Diane Barker, Carla Iansiti,
Robbia Pipper, Guy Procopio

University Office of Sustainability:

Jennifer Battle

Land Management:

Ben Darling

University Recycling Center:

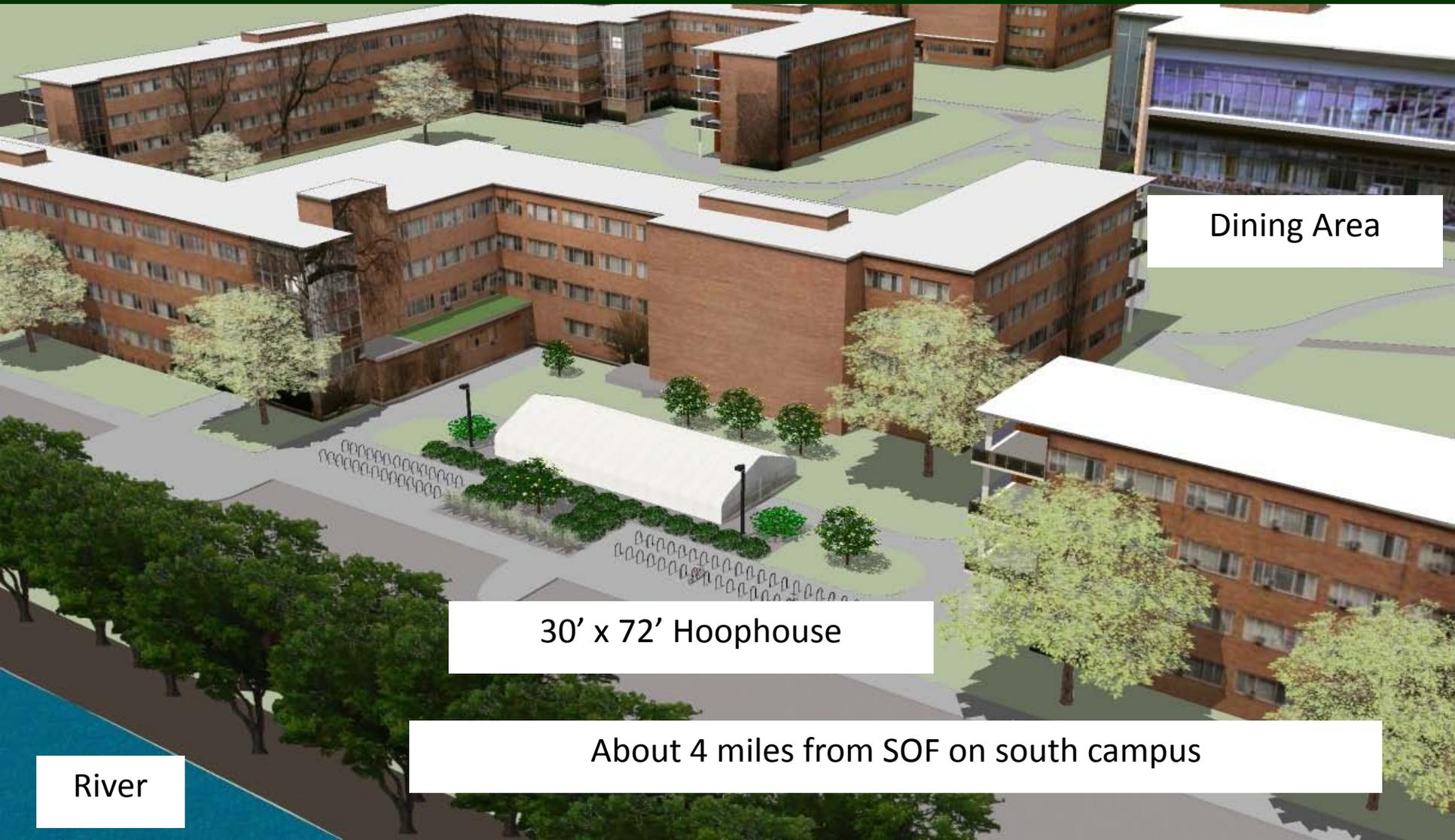
Ruth Daoust

January 2012 – preconsumer kitchen residue is added and covered with precomposted post consumer residue.



MSU Hoophouse Herbs

Project of Residential and Hospitality Services,
Environmental Studies Program and Student Organic Farm



Dining Area

30' x 72' Hoop house

About 4 miles from SOF on south campus

River

Vermicomposting Campus Food Residue & The Liberty Hyde Bailey GREENhouse

Part 2: Fall 2011- Fall 2012



October 30, 2012 Dedication



A Local Food Cycle

*The path to prosperity, peace, parity and partnership
is the passionate perennial progression from*

planting,

producing,

protecting,

processing,

preserving,

purchasing,

preparing,

partaking

and passing pooh to

renew the soil and begin anew.

*Promote positive personal, public and planetary perspectives
and programs with your food practices and purchasing power.*

John Biernbaum

Future Opportunities

Place, People, Programs

- MSU Neighborhood Connections
- Teaching Building at HTRC?
- Cold Cellar? – to go with hoopouses
- Program and Activities Specialist?
- For credit practicum for degree students?
- Applied Plant Science in Ag Tech?
- Aquaponics, mushrooms, rabbits for meat
- No limits to possibilities

Aquaponics

Student Submitted Be Spartan Green Grant

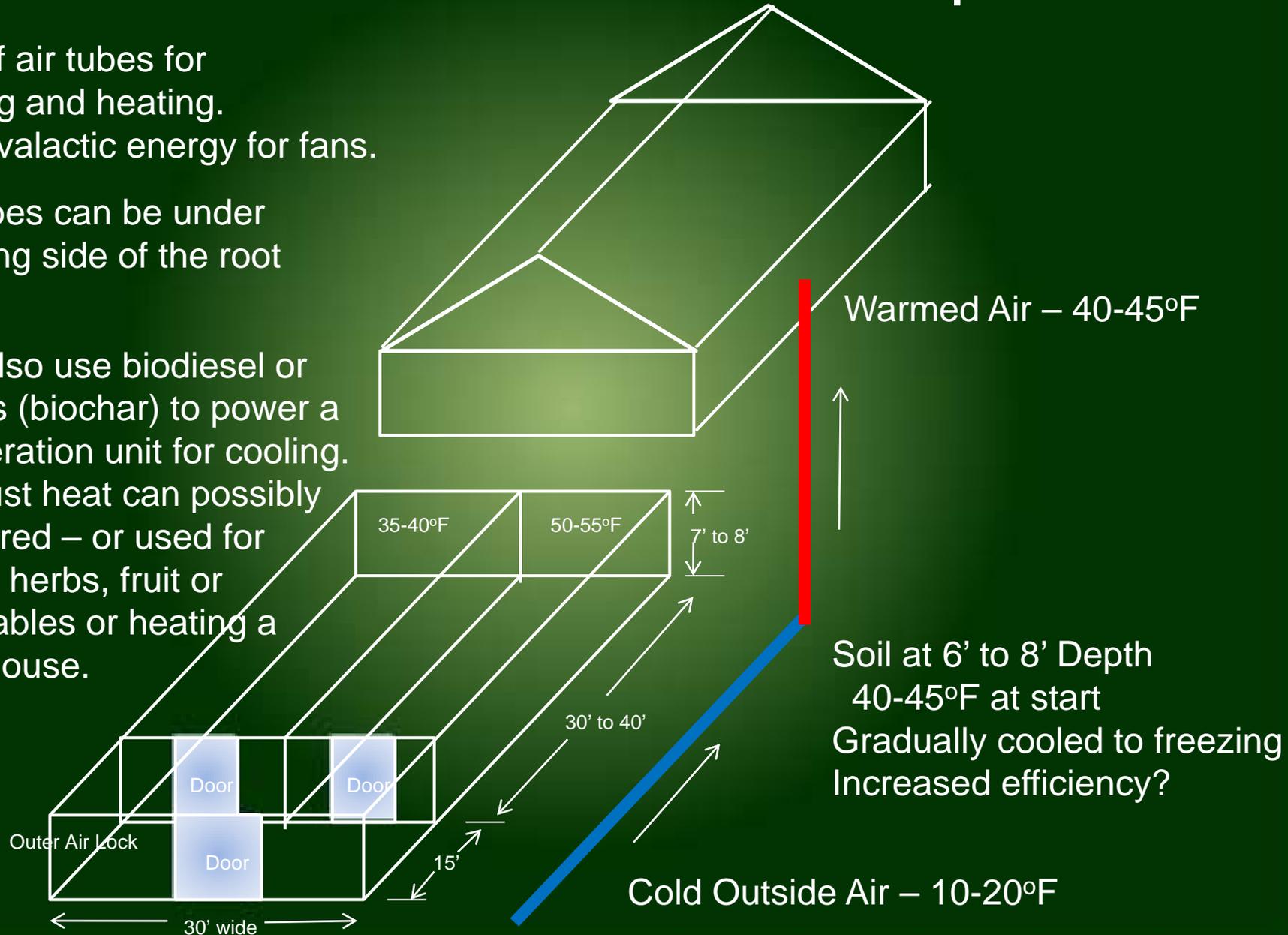


Cold Cellar Combined with Hoophouse

Use of air tubes for cooling and heating.
Photovalactic energy for fans.

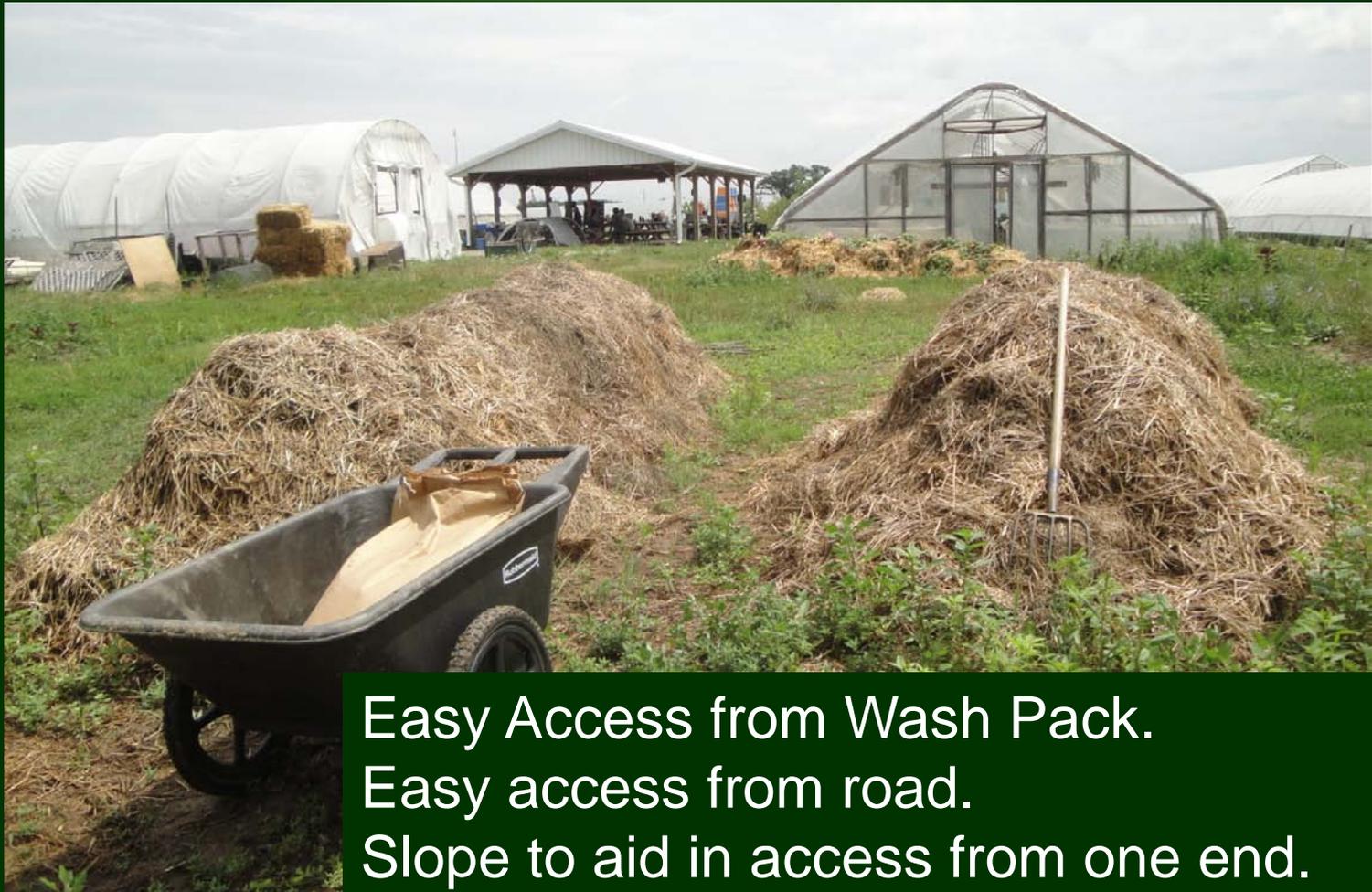
Air tubes can be under or along side of the root cellar.

Can also use biodiesel or biogas (biochar) to power a refrigeration unit for cooling. Exhaust heat can possibly be stored – or used for drying herbs, fruit or vegetables or heating a hoophouse.



Probable Location

Aligned with House 4



Easy Access from Wash Pack.
Easy access from road.
Slope to aid in access from one end.

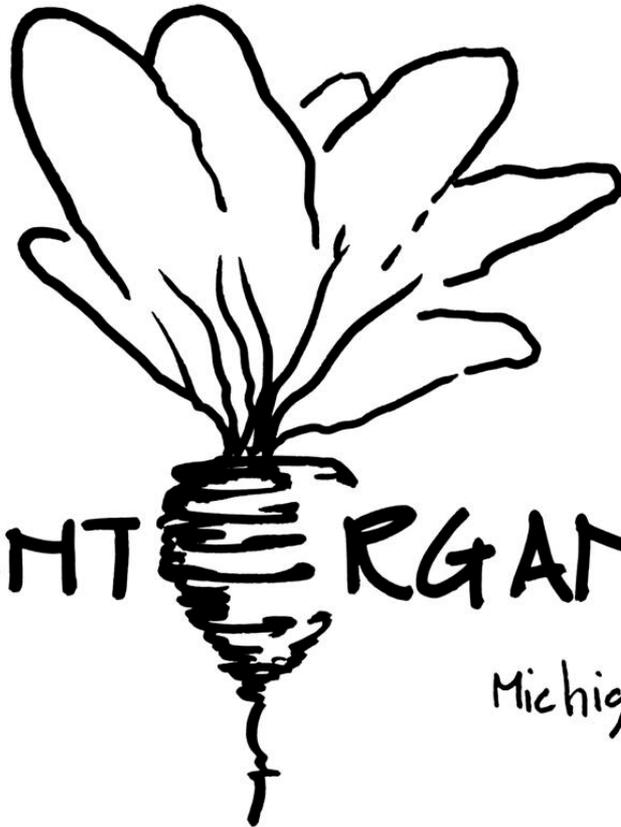
Grow Green!
For the Health of it!

*First soil seeds and roots
then leaves flowers and fruit.
Food, friends, freedom and fun
from earth, air, water and sun.*

John Biernbaum



www.msuorganicfarm.org



STUDENT ORGANIC FARM

Michigan State University