

NACD July 2019 U&C Webinar Series-Urban Soil Health

MARION COUNTY SWCD SOIL HEALTH INITIATIVE

JOHN HAZLETT-DISTRICT MANAGER

KEVIN ALLISON-URBAN SOIL HEALTH SPECIALIST



Marion County SWCD District Staff



John Hazlett
District Manager



Kevin Allison
Soil Health
Specialist



Julie Farr
Resource
Conservationist
(Part-Time)



Cheyenne Hoffa
Urban
Conservationist

The District partners with federal, state, and local resource agencies that include:

- **USDA-NRCS**
- **ISDA**
- **IDEM**
- **IDNR**
- **NACD**



NRCS-Marion County SWCD Cooperative Agreement (CFDA 10.902)

Cooperative Agreement Details:

- 4 year agreement September 2014-September 2018
- Total NRCS funding provided was \$201,500 matched by \$202,783 in District funds (\$140,000 match required)
- Total of 3 contract amendments supported additional technical assistance staff, Clear Choices Clean Water program, native planting and permaculture outreach material development
- IASWCD partnership role



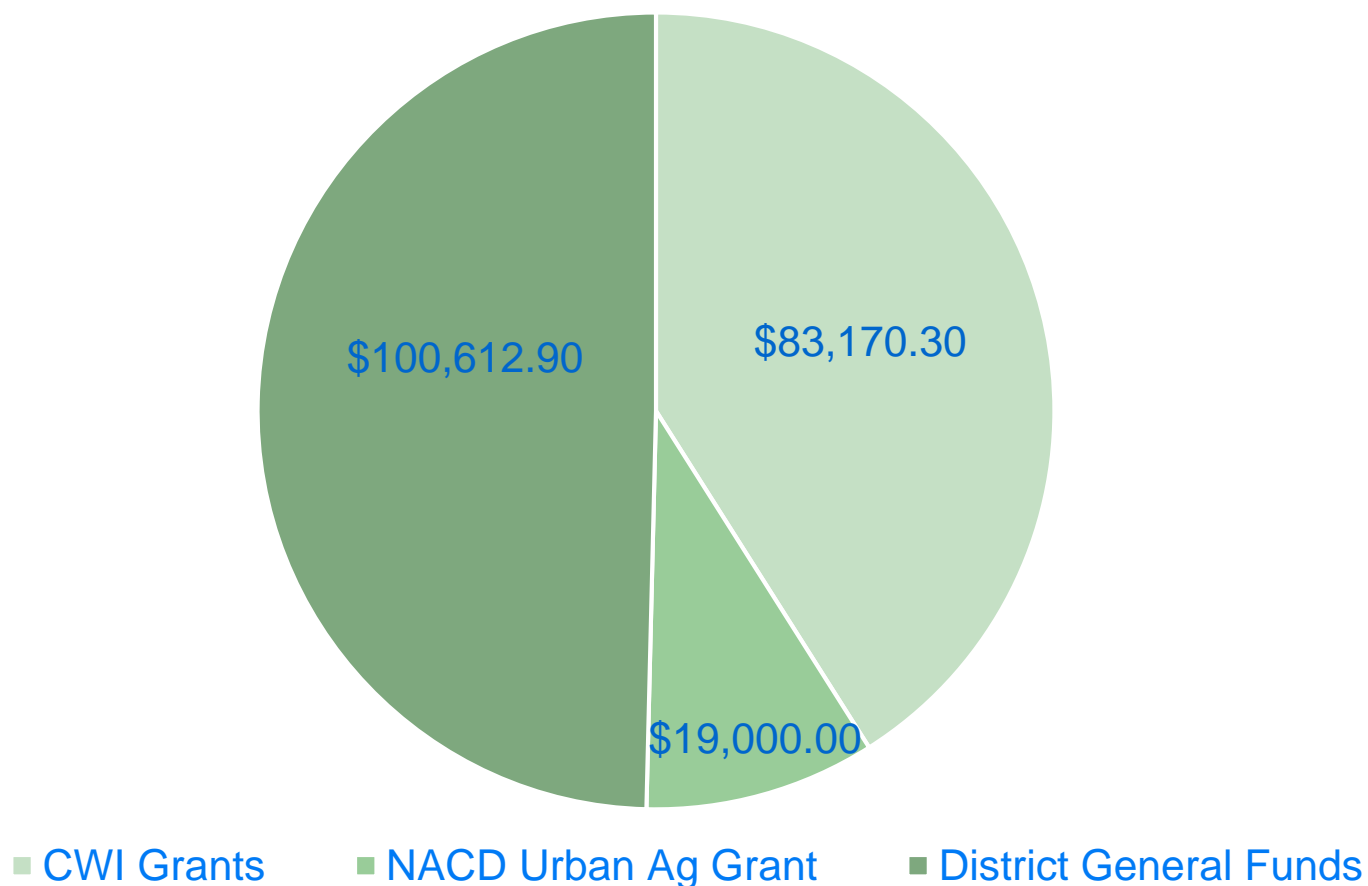
United States
Department of
Agriculture

Natural Resources Conservation Service



INDIANA ASSOCIATION OF
soil and water conservation
DISTRICTS

Leveraged Funding Sources –Cash Match



Program Accomplishments

Year	Workshops	Attendance	Technical Assistance	Site Visits
2015	28	625	42	36
2016	33	737	45	36
2017	33	1,089	64	55
2018	42	1,088	66	52
2019 to date	15	357	38	29
Totals	151	3,896	255	208

- Soil health technical resources and website www.marionswcd.org/soil-health-initiative/
- Clear Choices Clean Water Soil Health Pledge and YouTube videos
- Native plant technical resources for field borders, insectary strips and conservation cover applications



Direct Technical Assistance

110 Growers Served Since 2015

40 - Market Farms

70 - Non-Profits, Schools, Universities,
Churches, Community Gardens

Soil Health Matters - Every Square Foot





Resource Concerns

- Erosion
- Compaction
- Degraded soil habitat
- Ponding
- Flooding
- Excess Nutrients
- Low aggregate stability
- Inefficient moisture management
- Plant health
- Plant Productivity





FOCUS ON SOIL HEALTH

Minimize Soil Disturbance
Keep the Soil Covered

Living Roots
Plant & Biological Diversity





Conservation Practice Toolbox

- **Alley Cropping**
- **Composting Facility**
- **Conservation Cover**
- **Conservation Crop Rotation**
- **Contour Farming**
- **Cover Crops**
- **Gypsum**
- **Hedgerow Planting**
- **High Tunnel**
- **Integrated Pest Management**
- **Nutrient Management**
- **Mulching**
- **Multi-Story Cropping**
- **Residue and Tillage Management**
 - Reduced Till & No-Till**
- **Tree Shrub Planting**
- **Windbreak Shelterbelt**

MULCHING









**Center for Urban Ecology & Sustainability Farm @
Butler University, Indianapolis**



COVER CROPS / MINIMAL DISTURBANCE



Indy Urban Acres, Indianapolis

“We have completely transformed the way our farm operates in regard to soil health and ultimately better yields for families in need.”



August 2018 – Oats cover crop planted

Winter 2019 – Oats winterkill

April 2019 – Light hand weeding

April 2019 – 2 layers of newsprint and 2" hardwood fines mulch

April 2019 – Native planting for beneficial insects and pollinators

CONSERVATION COVER



Paramount School of Excellence, Indianapolis



Technical Assistance on a Market Farm

Cereal Rye + Hairy Vetch > May Transplants





**Marion County SWCD Demonstration Garden
@ Eagle Creek Community Garden, Indianapolis**

25' x 75' – No-Till, Cover Crops, Diverse Vegetables



COVER CROP SEEDING TABLE FOR MICRO-FARMS AND GARDENS



Species Common Name	Type	Life Cycle	Min. Germ Temp	Winter Survival	Optimum Depth (inches)	Surface Broadcast Potential	Rate: Ounces / 100 Sq. Ft.		
							Low	Normal	High
Barley, Spring	Nonlegumes	Cool Season Annual	35F	Never	¾-1½	+	1.6	3.2	6.4
Barley, Winter	Nonlegumes	Winter Annual	35F	Expected	¾-1½	+	1.6	3.2	6.4
Buckwheat	Nonlegumes	Summer Annual	50F	Never	½-1	-	0.5	1.1	2.1
Millet, Japanese	Nonlegumes	Summer Annual	65F	Never	½-¾	-	0.1	0.1	0.1
Millet, Pearl	Nonlegumes	Summer Annual	65F	Never	½-1	-	0.1	0.1	0.2
Oats	Nonlegumes	Cool Season Annual	38F	Seldom	½-1	+	1.2	2.4	4.9
Ryegrass, Annual	Nonlegumes	Winter Annual	40F	Seldom or Expected*	⅛-½	+	0.3	0.7	1.3
Rye, Winter Cereal	Nonlegumes	Cool Season Annual	34F	Expected	¾-1½	+	1.1	2.1	4.2
Sorghum-sudangrass	Nonlegumes	Summer Annual	65F	Never	½-1½	-	0.8	1.5	3.0
Sudangrass	Nonlegumes	Summer Annual	65F	Never	½-1	-	0.4	0.8	1.5
Sunflower	Nonlegumes	Summer Annual	65F	Never	1-1½	-	0.4	0.7	1.4
Triticale, Winter	Nonlegumes	Winter Annual	38F	Expected	¾-1½	+	1.2	2.4	4.8
Wheat, Winter	Nonlegumes	Winter Annual	38F	Expected	¾-1½	+	1.3	2.5	5.1
Kale	Brassicas	Cool Season Annual	40F	Seldom or Expected*	¼-½	-	0.1	0.1	0.3
Radish (diakon type)	Brassicas	Cool Season Annual	45F	Seldom	½-¾	+	0.1	0.3	0.5
Rapeseed	Brassicas	Winter Annual or Cool Season Annual	41F	Seldom or Expected	¼-½	+	0.1	0.1	0.3
Turnip, Forage type	Brassicas	Cool Season Annual	45F	Seldom	¼-½	+	0.1	0.1	0.3
Clover, Berseem	Legumes	Summer Annual	42F	Never	¼-½	+	0.2	0.4	0.7
Clover, Crimson	Legumes	Winter Annual	42F	Expected	¼-½	+	0.2	0.4	0.9
Clover, Red	Legumes	Short-lived Perennial	41F	Expected	¼-½	+	0.1	0.2	0.5
Clover, White/Dutch/Ladino	Legumes	Short-lived Perennial	42F	Expected	¼-½	+	0.2	0.4	0.5
Cowpea	Legumes	Summer Annual	58F	Never	1-1½	-	0.9	1.8	3.7
Pea, Field	Legumes	Winter Annual	41F	Rarely	1-1½	-	1.1	3.3	3.7
Pea, Winter	Legumes	Winter Annual	41F	Seldom	1-1½	-	1.1	2.3	4.5
Soybeans	Legumes	Summer Annual	50F	Never	1-1½	-	1.8	3.5	7.1
Sunn Hemp	Legumes	Summer Annual	68F	Never	½-1½	-	1.0	1.9	3.9
Vetch, Hairy	Legumes	Winter Annual or Cool Season Annual	50F	Expected	½-1½	+	0.3	0.7	1.3

*Variety Dependent

Seeding Rates based on Broadcast with Incorporation.
Normal Rate is based on 100% canopy cover.

Source: NRCS FOTG / MCCC Selector Tool. Contact the local NRCS / SWCD for additional assistance or recommendations on areas greater than 1 acre.

August	Oats Radish	Hairy Vetch	Crimson Clover	
September				Cereal Rye
October				
November				
December				
January	Winterkill			
February				
March				
April				
May		Flower	Flower	
				Flower
June				
July				



SOIL HEALTH ASSESSMENTS & NUTRIENT MANAGEMENT



COST-SHARE



HAIRY VETCH

WGA VII / OSA
Inoculated to fix nitrogen

Cover crops protect water quality and improve soil health in your garden. They keep living roots in the ground for more of the year. They produce soil organic matter, which soaks up water, feeds your plants, and keeps them strong and healthy. Cover crops suppress weeds and keep rain from washing away soil and valuable nutrients.

Hairy Vetch, Variety Purple Broomrape, 0.20% Purity; 0.20% Other Crop Seed; 24.40% inert Matter; 0.10% Weed Seed; Lark WB-1b-1V-2C1D; 80% Gummy; 5% Hard Seed; Origin: OH; Tested 2/18; Noxious Weeds: None Found; Pre-emergent packet: Not for use; Warning: Not for human consumption. Confirms coating material and inoculant. Lot #0387; Inoculant expiration: February 2019

HAIRY VETCH

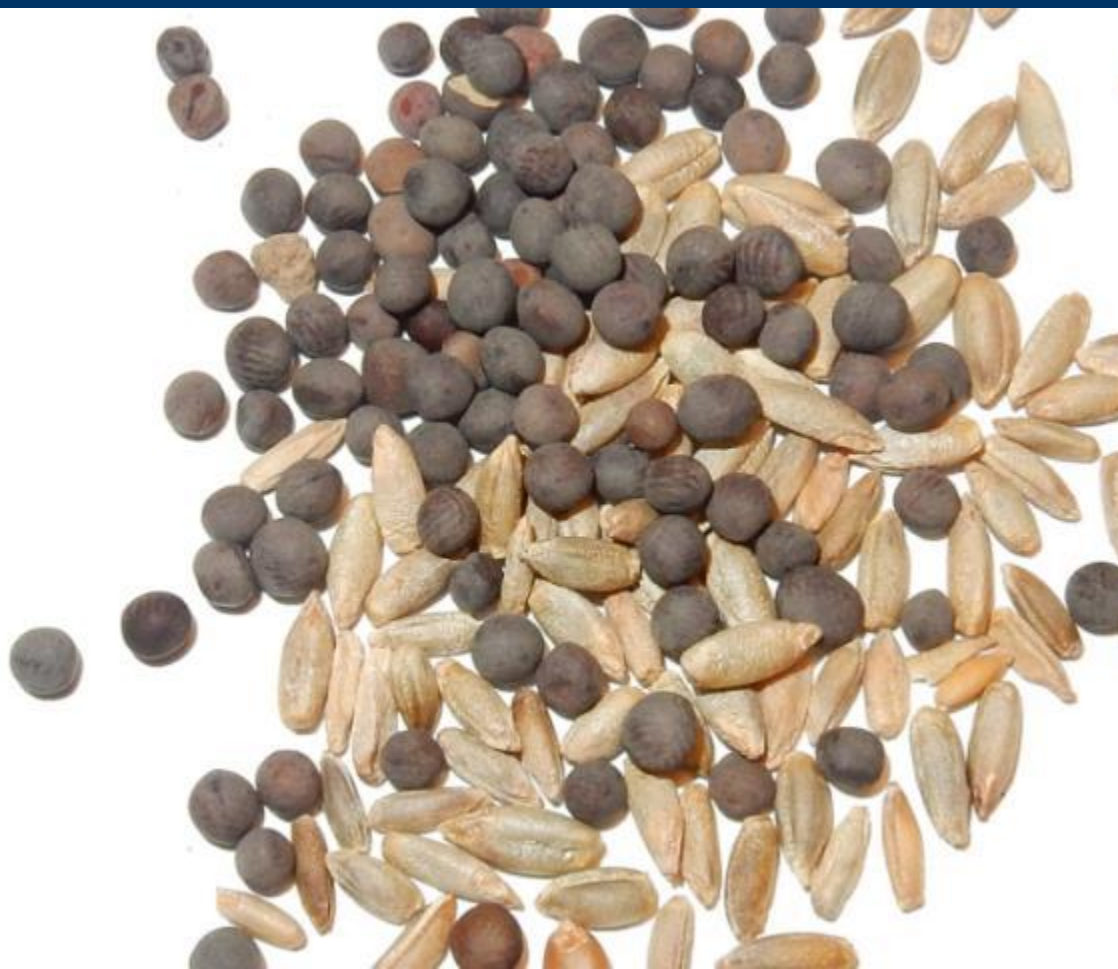
Planting Instructions

- Plant after harvest or seed under mature vegetables before mid-September for adequate growth.
- Spread seed by hand as evenly as possible. This 4 ounce packet covers 400 square feet. For biodiversity and increased weed suppression, use 1 ounce of legume with 1 ounce of oats or cereal rye for 100 square feet.
- Rake or lightly cultivate seeds in 1/2" to 1 1/2" deep for good seed to soil contact.
- Keep ground moist until germination.
- This legume is expected to survive into spring. Manage by cutting the plants down for natural mulch when they are in full bloom, as nitrogen contribution is peaking.

Northern Indiana	July 1 – September 15
Southern Indiana	July 1 – September 30
Seed Rate	1 oz / 100 square feet
Seed Depth	1/2" – 1 1/2"

For more information, contact your local soil and water conservation district or visit www.MarionSWCD.org www.HamiltonSWCD.org

Distributed by Marion County SWCD, 1700 South Madison Ave., Suite 200, Indianapolis, IN 46225. Net weight: 4 ounces





EDUCATION

Average of 34 workshops / year

Grower roundtables

Hands on-trainings

Presentations

Demonstrations

**Target Audience: Community groups,
growers, gardeners, corporations, Indiana
Conservation Partnership, general public**



EDUCATION

“The SWCD’s support to Purdue Extension’s networks has been crucial. Entrepreneurs who want to make a difference in their community and build a strong small farm business need to understand how to manage their soil for a sustainable business model”

– Purdue Extension – Marion County





EDUCATION

“We honestly would never have guessed the difference would be so drastic. Soil health has been a game-changer for the gardens.”

– Big Green Learning Gardens



Future Program Opportunities

- Permaculture outreach materials and soil health systems implementation
- Soil Health in a Garden Guide resource
- New Farm Bill funding for Urban Ag

