# Field Planning for a Beginning Vegetable Farm

Lacewing Acres' PFI Field Day 8/7/16

ACEWING

Chapter

ACRES

### Lacewing Acres

Est. 2013
 24 member
 CSA + Ames market +
 small number of business
 & restaurant sales

 2014: 40 member CSA + Ames market + some restaurant sales

 2015: 50 member CSA + Ames market + restaurant sales + FarmTable Delivery

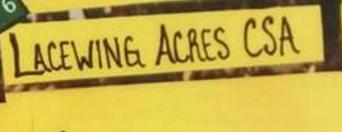


#### 2016

#### 58 member CSA Some restaurant sales

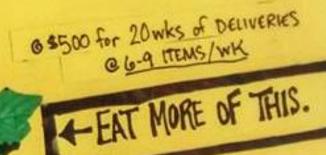
#### Dropped the farmers' market





0

CERTIFIED DEGANIC VEGETABLES



G FARM LOCATED JUST LOWILES FROM DOWNTOWN AMES

OPTIONAL HOME DELIVERIES \$115/SEASON

www.lacewingacres.com . lacowingacres@gmail.com

MORE

EARN

### Plot Size & Layout

- Water & Electric access
- Contours /Topography
- Efficiency of harvest and weeding Gate orientation, Equipment turnaround
- Perimeter fencing
- Pathways spacing & management
- Room to grow!

Spectrum of Structured Squares - CrazyQuiltContours!

## Bed size & length

- Standardize Beds, vary length as needed
   "Provide a deep, level, aerated and finely textured seedbed to seed or transplant into
  - Good air and water drainage essential for plant health
  - Uniform spacing for ease of weed control and harvesting"
- Beds by hand = Lots of measuring/walking
- Beds by tractor = Width of tractor straddle 4', 5', 6' beds
  - Set all tractors&equipment to this spacing
  - Rows no less than 12" apart, with at least 6" shoulder
- Useful Resources: <u>Rodale Institute</u>, <u>Business Handbook</u>



#### Lacewing Progression – Plot size, layout & Bed system

(MASCHED

### Rotations

#### Control

- Pests
- Disease
- Weeds
- Rotate for nutrients
- Keep it simple...to start.
- Think about timing what goes in early, what comes out late, what stays all year!
- Give yourself as much room as you can!



#### SARE's Rotation Planning Steps

- (1) organize your information,
  (2) develop a general rotation plan (optional),
  (3) construct a crop rotation planning map,
  (4) plan future crop sequences for each section of the farm, and
  (5) refine your crop sequence plan
- Lots of tools online, but some basic ones:
  - <u>http://www.neon.cornell.edu/croprotation/</u>
    <u>SARE</u>

#### Excel for Rotation Planning

1				3 Acres							Acre #4 Acre #5				
2			Field #:	0	1	2	3	4	5	6	7	8	3	9 10	
			Winter												
				Allium/Early Mix &		, 별									
4			Spring	Greenhouse		Ę.				Early Legumes					
		5				/ <del>Egg/</del> Toma clover, Long sse									
		2015		Allium &	*Potatoes - MULCH*	/Eg   ctr			Early Col Crops into	late-summer and					
-			Summer	Greenhouse	(& Swt Pots mg fam)	e e c			mid-summer	fall Col crops					
					Mulched/Oats&Pea	ns/P lens	Cucurbits - leave clov	er paths &	Late Legumes/Oats	Oats/Peas/Amendm					
6			Fall	Tunnels	s Cover	Ton unc	2 * 2 * 2 * 2 * 2 * 2 * 2 * 2 * 2 * 2 *		Peas Cover ents				Alfalfa, managed by Prairie Bloom Farm		
			Winter	Full season & early	Alliums/Winterkille		Rye	Rye	Rye	Rye	Alfalfa	Alfalfa		í	
8			Spring	Col Crops into mid-	d 0&P			Early Legumes							
9		2016		summer											
1		2				Early greens,		Toms/Peps/Egg/Tom	<b></b>						
				Late Legumes/Oats		legumes and roots,	*Potatoes - MULCH*	toes - MULCH* a underseed clover,		Cucurbits, with some early		Successions of cover crops to prep for late			
1				Peas Cover	Late Col & Legumes	Late Col crops	(& Swt Pots mg fam)	Long-season Goose			2016, early 2017 plantings		Alfalfa, managed by Prairie Bloom Farm		
2			Winter Spring						Option: Overwinter A	· ·	Julia Slocum:				
1	1				Clover	Clover	Winterkill	Winterkill	low tunnels, or Oats/	Peas			RyeVetch	RyeVetch	
1	2					Early Legumes	Early Mix	Alliums/Buckwheat			A Thistle problem here Potatoes to cultivate				
		2017						or legumes as they			heavily, then mulch				
					Early Col Crops into	late-summer and	mid season	come out of			C	urbits - leave			
1	2		Summer		mid-summer	fall Col crops Oats/Peas/Amendm	Legumes	production	*Potatoes - MULCH*	a swirrots mgram)	clover paths &	clover paths &			
1	4		Fall	Tunnels Rotation			Late Mix/Oats/Peas	Late Mix/Oats/Peas	Garlic/Alliums		underseed clover	underseed clover		ns/Pepps/Eggs/Toma &:	
	-			runners kotation							after last cultivation after last cultivation		TEORIG-SERSON COU		
1	5		Winter		Winterkill		Winterkill		Garlic/Alliums		Clover	Clover			
1			Spring		Early Mix										
	_	8 1	-			A11:/m									
🛚 🕨 🔸 🕨 Crop Rotation 🖉 2016 Heldover 🦯 2015 Untreated Non-organic Seed 📝 Org 2016 Seed 🧹 2016 Not Organic 🏒 江															

My simplified rotation = Allium ->Brassica ->Solanacea ->Cucurbit -> Allium

- Rationale = weed control, and alternating root vs leaf/flower crop
- Will be adjusted as acreage is added, cover cropping increases and perennials are established

#### Intercropping, etc.

Pros: Get more crops out of same space, address weed & pest pressure – less early season tillage in less than ideal conditions – less space to row cover

Cons: Too crowded – might cause delay! Can exacerbate pest and disease if too densely planted, Timing can be tricky & frustrating

Use more, shorter beds for less intercropping

• \*Balance ease of transitioning beds with lost space to pathways

## **Relay/Succession planting**

Planting one crop after another in the same space Essential for CSAs and consistent product at market Caution: It's easy to get carried away – Must build cover cropping into your planting plan!

Beginner challenge – When to till a crop in? – Might still be producing, but how much? And how long does it take to harvest?

Give yourself space!



#### Lacewing Progression 2013, 2014, 2015, 2016 Working toward less!

#### Cover Crops

- Know your objective: Build organic matter? Suppress weeds? Add nitrogen? Improve tilth? Prevent erosion?
  - Many will accomplish multiple objectives, but know your goal!
  - Overwinter or winterkill?
- Midseason cover cropping
- Start with tried & true
- Learn about more diverse plantings from more experienced growers
- Success with cover cropping often depends on proper equipment!
- Resources: <u>http://articles.extension.org/pages/67876/using-cover-</u> <u>crops-in-organic-systems:-resources-and-research-from-sare</u>

#### Cover Cropping – Lacewing Progression

#### Lots of challenges!

- Seeding thick enough!
- Broadcasting vs. roller vs. grain drill!
- Early enough to get established!
- Planning ahead and making it a priority for mid-season cover cropping!
- Hard in dry seasons without sprinklers!
- Getting better every year, but it's tough!

## Equipment - Tillage

Rototiller (BCS vs 3pt) Spader Perfecta Ferguson(Wiswall!) Chisel plow Moldboard plow Subsoiler

Mark rows mechanically so you can cultivate mechanically!

Never till when soil is too wet = planting into construction gravel...for years.

If your soil takes too long to dry out, consider relocating!





### Equipment - Weeding

•

One year's seed is seven years' weed Know your weeds and how to prevent infestations Avoid areas with seriously problematic weeds Hand tools & hoes Wheel hoes <-**Cultivation implements** Lely, shanks, etc **Cultivating tractors**  Baskets • Finger weeders Sweeps & more! Other tools: Flame weeding, burlap/ground cloth covers Resources: Wiswall's Business Handbook, **PSU weed guide** 

## Weeding - Thoughts on Mulch

Ground covers: landscaping fabric, layers of cardboard, black/red/silver/white plastic, etc...

#### Organic mulches

Straw, hay, leaves – look for weed seed and put it on thick!

MULCH IS GREAT, BUT tough to manage if existing weed pressure is intense
 Once it's down you've got to hand pull...

### Equipment – Seeding/planting

- Earthways (single and 3row bolted together
- Jang
- Planet Junior
- 3pt seeding implements
  - Transplanters vs hand transplanting

\*Lots of transplanting at Lacewing due to weed pressure and not-soconfident direct seeding technique

### Equipment - Other

MOWING! Weed whacker, Push mower, Riding mower, DR, Deck mowers, Flail mowers

Pull-behind water tanks

Trailers & hay racks

Grain drill/packers for cover crop seeding

Hilling disks, potato diggers, Middlebuster!

Cone spreaders! Manure Spreaders!

## Contracting for the big stuff!



### Lacewing's Equipment Progression









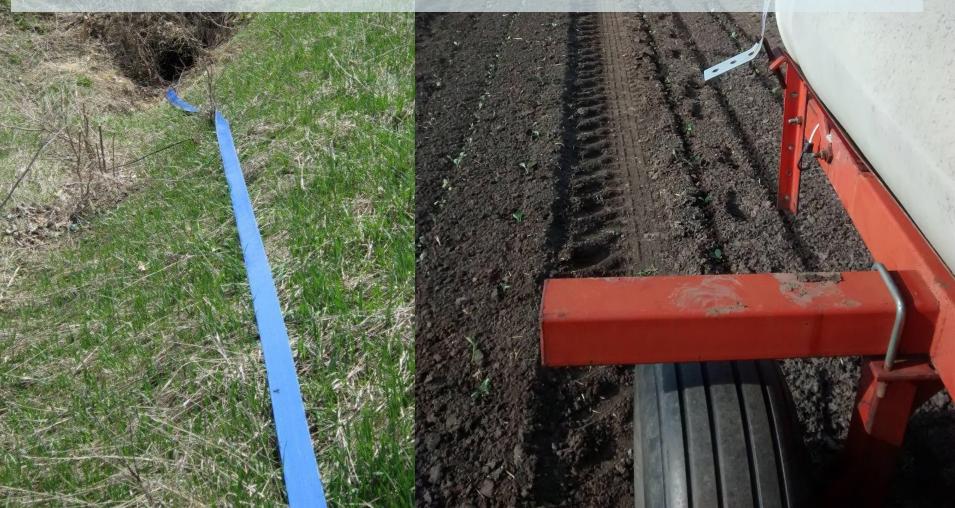




#### Irrigation

Drip vs Overhead - great farminar with Chris Blanchard on irrigation

How will your irrigation strategy affect weed pressure and cultivation? Day-to-day ease of use?



# Cooling







### Wash Station



#### Lessons learned the hard way...

Back up your files & TAKE PICTURES - you will forget ! Don't till while too wet - they aren't exaggerating. It is not worth it. Use "Rite in the Rain" notebooks or keep master copies in a safe, waterproof place! - EVERYTHING WILL GET WET. No, really. Don't let thistle go to seed. Ever. Anywhere near your field. Evereverever. :/ Give yourself as much space as possible! Kill rodents. :/ Even the babies. They will destroy everything. Muster patience when direct seeding - a good stand is essential for efficient weeding and harvesting! Keep field edges mowed, and don't try to use them for pollinator strips. Use proper lifting techniques and use machines/carts for heavy loads as much as possible. WORK REDUCTION!

# Other thoughts...





### Questions? ③

lacewingacres@gmail.com www.lacewingacres.com www.facebook.com/LacewingAcres

## To the field!