



# Agenda

## Grains in the Garden

- Late Fall—Start the planting
- Winter—Eating
- Early Spring—More planting
- Spring—Planting after last frost
- Early Summer—Tending
- Summer—Harvesting
- Fall—More Harvesting

*Until recently, the cyclical nature of growing food was much more personal, as well as physical!*

Scott Hucker, Grower  
Great Lakes Staple Seeds

Ortonville MI

[GreatLakesStapleSeeds.com](http://GreatLakesStapleSeeds.com)

[scott\\_hucker@yahoo.com](mailto:scott_hucker@yahoo.com)



# Late Fall—Plowing/Sowing

## Start of the Cycle:

- Next year's bounty starts as the summer crops wind down



## Late Fall—Start the Planting

### Why:

- Fall grains
  - Often yield more than Spring planted
  - Avoids ‘blooming’ during the heat of summer
  - Harvested earlier in the Summer
  - Spring planting time is already pretty busy...

### What:

- Grains needing vernalization—Rye, many wheats and some barley

### When:

- The **Hessian fly-free-date** is around mid-September in mid-state areas and approximately the third or fourth week of September for southern **Michigan**. Highest yields are often attained when seeding is made within two weeks following the fly-free-date. I aim to start planting around 9/22.





## How:

- Spread compost as needed/available, grains are not heavy feeders





How:

- Tilling as you do any garden plot





## How:

- Using a heavy metal rake, level the soil and kill the freshly sprouted weeds just before marking and planting



## Seeding Methods:

- Broadcast by hand



<http://www.antiquefarmtools.info/>

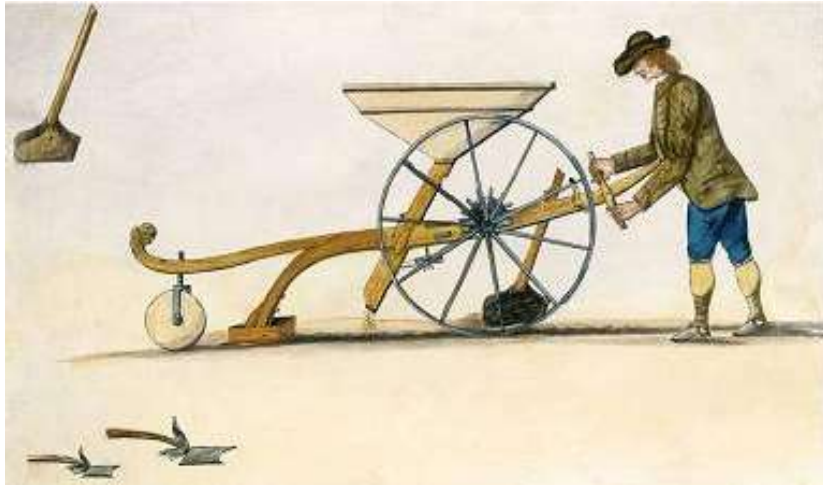
[http://clutch.open.ac.uk/schools/willen99/w\\_employment/ridgefurr/medfar.html](http://clutch.open.ac.uk/schools/willen99/w_employment/ridgefurr/medfar.html)

[https://www.reading.ac.uk/merl/interface/advanced/farming/tools/tools\\_seeding.html](https://www.reading.ac.uk/merl/interface/advanced/farming/tools/tools_seeding.html)



## Seeding Methods:

- Drilling—like you image in the modern age



## Plot Size:

- For 'seed production', I'm planting many small plots
- For 'eating', it all depends on your appetite

## Bread

- Whole wheat "1 pound" loaf
- Our favorite whole & standard flour "2 pound" loaf

## Barley

- As a side dish





## Bread:

### One pound all whole-wheat loaf

- Needs about 3 cups of flour from 2 ½ cups of wheat berries
- Requires 10,000 seeds to be ground into flour
- 1 seed planted produces ~150 seeds to eat at the 'garden scale'
- Need to have 66 wheat plants from 1/10 ounce of seed (3 g)
- 9" rows with 6" seed spacing
- Plan on a 25 square foot plot
- 5 ft by 5 ft per loaf of bread

1  
LB

By the way, a Victorian Era family of 6

- Ate 55 pounds of bread per week
- 55 pounds x 52 weeks needs almost 3000 pounds of wheat
- 2 acres of well tended wheat per year using 19 pounds of seed

2

## Bread:

### 5 Cup Loaf

2  
LB

- 3 cups of store bought 'white flour'
- 2 cups of home grown ground whole wheat
- Requires 7,200 seeds to grind to make the whole wheat flour
- Need to have 48 wheat plants
- Plan on a 18 square feet plot
- ~4 ft by 4 ft per loaf of bread

Bake a dozen per year from

- 15 ft by 15 ft plot



Br



## Grain Side Dish:

**½ Cup of Barley** (expands upon cooking)

- 1/2 cups of naked barley (no hulls)
- 3.2 ounces of grain
- Requires 2,800 seeds to eat
- Need to have 19 plants
- Plan on a 7 square feet plot
- ~2.5 ft by 2.5 ft per side dish

Side dish for 2 people, twice a week per year

- Plant ~2 ounces
- 30 ft by 30 ft plot
- Harvest 21 pounds

## Plot Size:

### Square feet

- 10—test a few varieties, grow a bit for decorating
  - Everything with hand tools
- 100—taste one or two varieties, holiday treats
  - Hoe comes in handy
- 1000—eat something special weekly
  - Gas power tiller and the right hoe will be appreciated
- 10,000—serious homestead baking
  - Tools with a wheel or two will become useful for cultivation
- 100,000 (2+ acres)
  - Tradeoff between more equipment and time
- 1,000,000 (23+ acres)
  - Tractors with serious implements
- 10,000,000 (230+ acres)
  - Significant investments





## My Method:

- The goal is to bury the 'wheat seed' a good solid 1 inch below the surface.
  - Too deep—The germination rate will be reduced
  - Too shallow—Plants can fall over as soil moves around in heavy rains and heaving frosts

## Tools—Rakes:

Steel Yard

Wooden Seed Bed Prep

Hay Rake with Fewer Teeth

Hoedag





## My Method:

- Stake and use string to create plots
- Use hay rake to make parallel “scratches” 9 inches apart





## How:

- Following the lines, create the furrow with a hoe of your choice—Wheel hoe for me!





## How:

- “clean up” the furrow with a hoe.



- 9 inches between rows is efficient for my time and most grains shade out the weeds!



## How:

- For rare seeds, drop them one by one with 8 inch spacing, or,
- Drizzle them into the furrow for 4 inches spacing
- Use poles and stakes to keep track of where you are—don't double plant!





## How:

- Rake across the furrows to fill in the 'trench'
- Walk along the line to pack it tight
- Rake to camouflage the pattern—no sense making it too easy for the birds!
- Water if rain isn't in the forecast











- By the time I run out of space, my early work has already sprouted
- And some light weeding begins









# Winter (Dec)—Feasting

## Cooking:

- Grains
  - Simmered
  - Ground into flour
  - Roasted
- Flint Corn
  - Corn bread
  - Corn meal Pancakes
  - Polenta
  - Flour





## Winter (Dec)—Feasting

**Cooking Grain:** wheat, rye, sorghum, millet, ...

- 1 part 'grain' + 2 parts water, simmer for 20 to 25 minutes
- Serve as a side dish (or in a roast squash)





## Winter (Dec)—Feasting

### Ground Grain:

- 2 cups of 'whole wheat' + 3 cups of store-bought white flour:



- Wide range of equipment available for grinding wheat into flour



## Cooking Polenta:

- 1 cup meal
- 4 cups water

Vigorously drizzle and stir in the meal into boiling water

Simmer for at least an hour, two is better

Add more water if it gets too thick





## Buttermilk Cornmeal Pancakes:

1 egg  
1 cup of buttermilk  
2 Tbs melted butter (or oil)  
2/3 cup of finely ground cornmeal  
1/3 cup of regular flour  
1 Tbs sugar  
1 tsp baking powder  
1/2 tsp baking soda  
1/2 tsp salt



- Prepare the batter by beating the egg and then adding the ingredients in the listed order. I like to cook them in a hot skillet with a bit of cooking oil by spooning in the batter. Flip them when they've puffed up and are bubbly.
- For **Buckwheat** pancakes: Roll buckwheat to crack open the hulls and sift to get the flour





# Winter (Feb)—Sitting by the PC

## Planning:

- Allocate garden space
- Distances to avoid crossing for saving your own seeds to plant
  - Wheat—No touching
  - Barley—No touching
  - Beans—20 feet
  - Rye—Mile
  - Corn—Mile or by duration
- Seeds to purchase
- Sort packets for planting
- Keep warm





# Spring (March)—Digging

## Plowing:

- Turns 'over' the soil

## Tilling:

- Mixes up the soil ecosystem
- Be careful to not overwork, especially when wet





Mid April

## Growth Renews

- Weeding when possible to keep down the competition for the grains planted Last Fall

Time Check—Rhubarb emerges











## Soil Temperature (min)

- 37F spring wheat
- 40F barley
- 55F corn
- 59F soybeans
- 60F sunflower/millet
- 65F sorghum





# Early Spring—More Planting

## Planting

- Barley and wheat are planted very early...sometime it snows!





# Early Spring—More Planting

## Planting

- Just like the Fall, but must work faster







## Cover Crops

- Turn them under





## Weeding

- Equipment depends on size
- Hand tool and scuffle hoe works for several thousand square feet









From each seed, emerged a single stem. If planted seeds too densely, I start pulling out the weaker looking plants.



Sardinian May 20th



As the plant grows, it sends up tillers (side sprouts). Most tillers will produce a head of grain!













Time Check—Potato planting







# Spring—Planting after Last Frost

Don't rush too fast:

- Corn
- Buckwheat
- Sunflower
- Amaranth
- Millet
- Sorghum



6

7



# Early Summer—Tending



20180520\_144046.jpg



20180520\_144450.jpg



20180520\_144451.jpg



20180520\_144644.jpg



20180520\_144646.jpg



20180520\_144853.jpg



20180520\_144911.jpg



20180520\_144912.jpg



20180520\_144947.jpg



20180520\_144951.jpg



20180520\_145017.jpg



20180520\_145019.jpg



20180520\_145034.jpg



20180520\_145053.jpg



20180520\_145054.jpg



20180520\_145058.jpg



20180520\_145110.jpg



20180520\_145112.jpg



20180520\_145117.jpg



20180520\_145134.jpg



20180520\_145136.jpg



20180520\_145142.jpg



20180520\_145152.jpg



20180520\_145154.jpg



20180520\_145203.jpg



20180520\_145211.jpg



20180520\_145213.jpg



20180520\_145219.jpg



20180520\_145314.jpg



# Early Summer—Tending





# Early Summer—Tending





## Early Summer—Tending





## Early Summer—Tending





# Early Summer—Tending



Time Check—Coming soon, potato hilling  
and then potato bugs





# Early Summer—Tending

## Other Grains

- Red Leaf Amaranth
- Millet
- Sunflowers

8





# Early Summer—Tending





# Early Summer—Tending

## Work Continues:

- Beans are up
- Cut hay



Time Check—Making hay









## Early Summer—Tending





# Early Summer—Tending





# Summer (July)—Wheat

## Harvest:

- If the plot is not ripening all at once, I will cut several times to balance the risk of seeds to sell, birds and hail

## Grain Stages:

- Watery/milky
- Soft Dough—By hand
- Hard Dough—Modern combine  
*(details in next slide)*





# Summer—Tending

## Stages of Dough:

- Kernels at various times during grain filling.





# Summer—Tending





# Summer—Tending





# Summer—Tending





# Summer—Harvesting of Fall Planted Grains













## Summer—Harvesting of Fall Planted Grains

















# Summer—Harvesting of Fall Planted Grains









# Red Leaf Amaranth & Sunflowers





# Summer—Harvesting of Fall Planted Grains







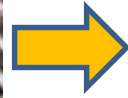




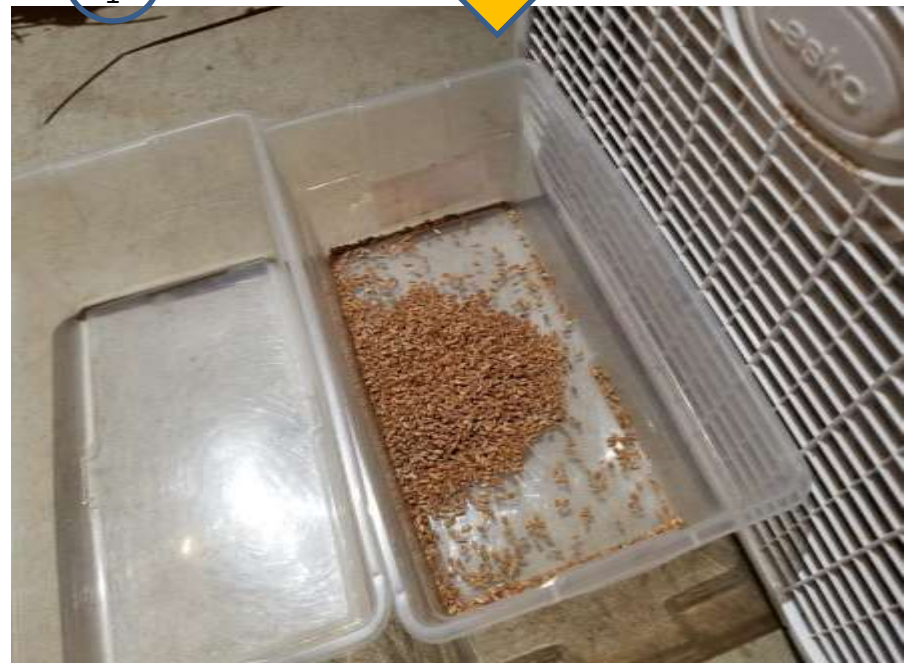
1  
0







1  
2





## Processing:

- Cutting
- Bundling
- Drying
- Sorting (seed stock)
- Threshing
- Winnowing
- Screening
- Freezing (kill weevils)
- Eating





## Fall—Harvesting of **Spring** Planted Grains

### Spring Planted:

- Ripe/Cut July thru August: Barley, Wheat & Oats











Blue Durum



## Oats:

- Still greenish when cut





# Threshing

## Basic Threshing by Hand:

- Pillow case, rubber hose, two bins and a fan!





# Threshing

Sherck Seeds:

- Our Mentor





# Wheat

Ukrainka Winter Wheat (W40)  
hard red



Vermont Read 1898 Winter Wheat (W49)  
soft, white





# Wheat

Hourani Spring Wheat (W64)  
Bread of Kings



Blue Durum Spring Wheat (W68)  
noodles





# Naked Barley

Masan Naked 1 Barley (B29)



Sumire Mochi Barley (B06)





# Malting Barley

Sardinian Barley (B27)



Bere Barley (B08)





# Buckwheat

Tartary Buckwheat



Japanese Buckwheat





# Sorghum & Millet

Rox Orange Sorghum  
Grain & Syrup



West African Millet









# Storage

## Containers:

- Labelled and air tight is desirable
- Kept in a cool location





# Threshing

## Petal Thresher:

- Labor saving 50x
- ~acre not sq ft





## In Conclusion

### Grain in the Garden:

1. Choose from Wheat, Rye, Barley, Corn, Sunflower, Millet, Sorghum, or Amaranth
2. Scale up or down in size, per your desires
3. Does not need elaborate equipment (depending on #2)
4. Can be stored without canning, boiling, freezing or pickling

Scott Hucker, Grower  
Great Lakes Staple Seeds  
Ortonville MI  
GreatLakesStapleSeeds.com

Questions, just ask:  
[scott\\_hucker@yahoo.com](mailto:scott_hucker@yahoo.com)





Props:

- Hoedag, hoedag on handle, wheel hoe, two-wheel hoe
- Sack, hose, box fan with extension cord, 3 shoe boxes
- Different seeds in clear glass jars:
  - Hulled and naked barley
  - Wheat
  - Corn
  - Millet
  - Sorghum
  - Buckwheat
- Stalk bundles
- Pre-thresh samples
- 1 seed produces X examples