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Curious Gardener
#CrazyGrainLady

Brie Arthur
Inspired by Agriculture
Convert to Landscapes
Focus on Grains

Cereals in the Poaceae family

GRASSES
Attract “Wildlife”
Grow your own Bird Seed
Where to grow grains?
Grains LOVE Sun!

**FULL SUN = 8+ hours**
**PART SUN = 4-6 hours**

**GRAINS DO NOT LIKE SHADE**

Water in summer during HOT & DRY conditions
Sunny landscapes and lawns
40 million acres of turf in the United States

Let’s do something more interesting and meaningful with this space
The Serpentine at Chanticleer Garden
Barley Display
How much beer?
200 square feet = 4lbs of barley seed
Growing Grains has made me a better Gardener, Cook, Land Steward & Consumer
Gluten Free Grains

Corn
Oats
Rice
Sorghum
Teff
What is “LOCAL”?

Where are our carbohydrates coming from?

How are they being grown?
The Cultural Practices Matter Most:
AVOID Synthetic Fertilizer
Systemic Fungicide and Pesticide Applications
Persistent Herbicide Spray to dry crop
“Killer Compost” from sprayed grains
How to Grow Grains?
Grains in Containers
1. Fill container with soil
2. Scatter Seed on top
3. Mulch Lightly
Germinates in 2 weeks
How much flour do you get from 3 5 gallon fabric bags?

1 loaf of bread
Grow as Clumps
Mixed Meadow
Direct seed in existing open space
Ground plane coverage

Lowers weed pressure and herbicide use
After harvest mow the stalks in place
Shredded organic matter breaks down in 30-45 days
Use stalks as compost to improve soil
Leave root systems in place to rot
Utilize crop rotations to increase fertility
Inexpensive & efficient strategy
What are cover crops?

A cover crop is a plant that is used primarily to slow erosion, improve soil health, enhance water availability, smother weeds, help control pests and diseases, increase biodiversity and bring a host of other benefits to your land.
Rotate Grains & Legumes for natural fertilization cycle
Legume Cover Crops:

- Crimson Clover  
  *(Trifolium incarnatum)*
- Red Clover  
  *(Trifolium pratense)*
- Hairy Vetch  
  *(Vicia villosa)*
- Austrian Winter Pea  
  *(Pisum sativum subsp. arvense)*
- White Sweetclover  
  *(Melilotus alba)*
- Yellow Sweetclover  
  *(Melilotus officinalis)*
- Berseem Clover  
  *(Trifolium alexandrinum)*
- Subterranean Clover  
  *(Trifolium subterraneum)*
- White Clover  
  *(Trifolium repens)*
- Faba Bean  
  *(Vicia faba)*
- Soybean  
  *(Glycine max)*
- Peanuts  
  *(Arachis hypogaea)*
### Non-legume cover crops:

<table>
<thead>
<tr>
<th>Crop</th>
<th>Scientific Name</th>
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</thead>
<tbody>
<tr>
<td>Cereal Rye</td>
<td><em>Secale cereale</em></td>
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<tr>
<td>Annual Ryegrass</td>
<td><em>Lolium multiflorum</em></td>
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<tr>
<td>Barley</td>
<td><em>Hordeum vulgare</em></td>
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<tr>
<td>Buckwheat</td>
<td><em>Fagopyrum esculentum</em></td>
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<tr>
<td>Mustard</td>
<td><em>Brassica nigra</em></td>
</tr>
<tr>
<td>Oats</td>
<td><em>Avena sativa</em></td>
</tr>
<tr>
<td>Rape</td>
<td><em>Brassica napus</em></td>
</tr>
<tr>
<td>Forage Radish</td>
<td><em>Raphanus sativus</em></td>
</tr>
<tr>
<td>Winter Wheat</td>
<td><em>Triticum aestivum</em></td>
</tr>
</tbody>
</table>
Cool Season Leafy Greens
Cover Crops

- Arugula
- Chard
- Cilantro
- Collards
- Kale
- Lettuce
- Mustard
Cool Season Root Cover Crops

Beets
Carrots
Daikon Radish
Parsnips
Potatoes
Rutabaga
Turnips
Cool Season Flowering Cover Crops

Cilantro, Poppies, Nigella, Carrots, Larkspur
Ground plane coverage

- Direct Seed
- Eliminate open mulch space
- Reduce need for herbicide applications
- Utilize crop rotations to improve soil
- Inexpensive & efficient strategy
- Reduces need for mulch
- Low maintenance
No Pre-Emergent Herbicides

Pre-emergence weed control prevent “weeds” from germinating. This will also prevent intentionally sown seed for establishing and creating a long-term seed bank.
Weed Control 101: Hand Weeding is ALWAYS BEST!

DO NOT USE VINEGAR IN YOUR GARDEN!

• Vinegar can be used on hardscape spaces at a 15% concentration to be effective; very caustic, will burn skin and eyes and harmful to amphibians. **DO NOT USE VINEGAR!**

• Glyphosate - is a broad-spectrum systemic herbicide and desiccant. It is an organophosphorus compound, specifically a phosphonate, which acts by inhibiting the plant enzyme 5-enolpyruvylshikimate-3-phosphate synthase. It is used to kill weeds, especially annual broadleaf weeds and grasses that compete with crops.

• Glufosinate - does not translocate as well, need to use on seedling broadleaf weeds, glyphosate resistant horseweed. Use with pre emergent. Does not work as well on Bermuda, pigweed, some annual weeds.
Weed Control 101:
Hand Weeding is ALWAYS BEST!

• Envoy - does not work on drought stressed grasses

• Avenger (d-limonene) good contact herbicide at correct dosage on broadleaf seedlings. No effect on grasses or nutsedge

• Scythe and Axe (pelagonic acid) will burn but weeds come back. Need good spray coverages and need two applications to finish the job, works within hours but stinks and odor persists

• Reward or diquat works better than scythe need 2 apps not effective on grasses works fast do not mix with selective grass herbicides

All more expensive then glyphosate
What are Grains?
Ancient Grains

• Wheat: Spelt, Kamut, Freekeh, Bulgar, Farro, Einkhorn and Emmer

• Barley, Millet, Teff, Oats and Sorghum

• Pseudocereals: Amaranth, Buckwheat, Quinoa and Chia
Cool Season Grains

- Barley
- Oats
- Rye
- Wheat

Prefer cool soil and air temperatures

Sow in late fall or early spring

Harvest in summer
Barley: *Hordeum vulgare*

“The Beauty Queen”
Fun Facts

• Barley seed was a form of measurement, weight & currency

• American shoe sizes are still a reference to “Barleycorn”

• The saying “eating your savings” refers to barley
Oats: *Avena sativa*

“The Dancer”
Fun Facts

• Oats have the deepest root systems reaching 36”+ and act as nutrient scavengers

• Oats and Peas combined are a “complete” cover crop

• The term “sow your wild oats” means to grow a crop that you will regret and dates to the 1560s
Wheat: *Triticum aestivum*

“The Workhorse”
Fun Facts

• Wheat is grown on more land than any other crop and is cultivated on every continent except Antarctica

• Wheat has 13% vegetable protein content - more than all other major cereals
Stem Strength MATTERS!
850 sq ft = 25 lbs of flour
Thresh
Clean seed ready to grind or sow
If 100 neighbors grew grains, we could harvest 2,000 lbs for a local bakery or brewery!
Warm Season Grains

- Corn
- Millet
- Rice
- Sorghum

Prefer warm soil and air temperatures

Sow in early summer

Harvest in fall
Corn: *Zea mays*

“The Catalyst for Change”
Fun Facts

• Corn is the only cereal grain native to North America

• An ear of corn has an average of 800 kernels in 16 rows and will always have an even number of rows

• There are over 3,500 different uses for corn products globally
Corn is an exclamation point in the garden.
Rice:
*Oryza sativa*

“The Mystifier”
Fun Facts

• Rice does not have to be grown in constant saturation. Paddies are a way to naturally reduce weed pressure

• April 19th is national Rice Ball day

• Over 40,000 varieties of rice
Rice is a warm season grass

Very Ornamental

Seed can be harvested August-October
Great container plant
Can tolerate no drainage
Direct sow seed in June

pot with no drainage holes

Full Sun

Keep it saturated
Purple Fountain Grass collapses in rain

‘Black Madras’ & ‘Carolina Gold’ rice
Sorghum: *Sorghum bicolor*

“The Sweetness”
Fun Facts

- When Mary Poppins sang “A spoon full of sugar” she was referring to a spoon full of sorghum syrup, which is full of nutrients and vitamins
- Sorghum is the most heat and drought tolerant cereal grain
- Sorghum is gluten free
Sorghum grows up to 14’ tall in less than 4 months
Heat and Drought Tolerant
Seed Color Variation

Ideal Bird Seed
What do you DO with these grains?
The Wonder Mill & Kitchen Aide Grinder
Home grown is WHOLE GRAIN
Thank you Ohio Master Gardeners
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