“Pumpkin” Trends

• The market for pumpkins and other fall items has been increasing
• Diversity in shape size and color is very popular
  • It’s not just the standard orange Jack O’Lantern anymore!
2018 Variety Trial

- Variety trial at the 2018 Pumpkin Field Day at the Ewing Demonstration Center (southern IL)
- No-till, transplanted/wheat stubble
  - Transplanted June 30-July 2, 2018
  - Conventional production management practices
- 75 Varieties: Gourd, Pie, Specialty, Jack O’Lantern
  - 2 row plots 40 ft long
  - Spacing:
    - Gourds and Pie-sized planted at 2.5 ft x 6 ft (between plant x between row) (15 sq ft/plant)
    - Specialty and Medium Jack O’Lanterns at 4 ft x 6 ft (24 sq ft/plant)
    - Large Jack O’Lanterns at 4 ft x 8 ft (32 sq ft/A)
Data Collected

- Observational trial, single replication
  - Harvest late September
  - Yield (based on 5 plant harvest)
  - Weight
  - Notes fruit characteristics
    - size, shape, color, etc.

- Presenting the “highlights”
Gourds
Daisy Gourd 0.4 lb; 11.0 fruit/plant
Autumn Wings 0.4 lb; 11.8 fruit/plant
Galaxy of Stars 0.3 lb; 14.6 fruit/plant
Gizmo 1.6 lb; 6.6 fruit/plant
Crunchkin 0.5 lb; 7.6 fruit/plant

Gold Speck 0.5 lb; 10.2 fruit/plant

Munchkin 0.4 lb; 13.2 fruit/plant

WeeeeeeOne 0.5 lb; 11.2 fruit/plant
Apprentice 1.0 lb; 9.6 fruit/plant
Pie-sized

4-6 lbs Range
Pie-sized

2-4 lbs Range
Field Trip 3.1 lb; 2.0 fruit/plant

Chucky 2.5 lb; 5.0 fruit/plant

Touch of Autumn 2.2 lb; 4.0 fruit/plant

Tiffany 3.0 lb; 3.8 fruit/plant
Pie-sized

Specialty
**Miniwarts** 2.5 lb; 3.8 fruit/plant

**Baby Bumps** 3.5 lb; 3.2 fruit/plant

**Sunlight** 3.7 lb; 2.8 fruit/plant

**Warty Gnome** 2.8 lb; 3.6 fruit/plant
Snowball 1.9 lb; 7.2 fruit/plant
Specialty

Whites, Wartys, Blues, Reds, Tans...
Blue Doll 12.8 lb; 0.6 fruit/plant
Marina Di Chioggia 7.6 lb; 0.6 fruit/plant
Cinderella 16.4 lb; 2.0 fruit/plant
One Too Many 21.0 lb; 1.2 fruit/plant
Autumn Buckskin 14.8 lb; 1.4 fruit/plant

Fairytales 22.9 lb; 1.0 fruit/plant

New England Cheddar 12.2 lb; 2.0 fruit/plant

RPX 6229 10.2 lb; 3.4 fruit/plant
**Moonshine**  5.8 lb; 1.4 fruit/plant

**Specter**  13.8 lb; 1.6 fruit/plant

**RPX 6927**  7.3 lb; 1.2 fruit/plant

**White Flat Boer Ford**  11.9 lb; 0.8 fruit/plant
Knucklehead 13.2 lb; 2.4 fruit/plant

Warty Goblin 12.3 lb; 0.8 fruit/plant

RPX 6890 10.5 lb; 2.6 fruit/plant

HSC 151 (naked seed) 9.9 lb; 2.0 fruit/plant
Jack O’Lantern

Under 30 lbs
<table>
<thead>
<tr>
<th>Variety</th>
<th>Weight (lb)</th>
<th>Fruits per Plant</th>
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</thead>
<tbody>
<tr>
<td>RPX 6208</td>
<td>14.7</td>
<td>3.2</td>
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<tr>
<td>Eagle City Gold</td>
<td>14.6</td>
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<tr>
<td>Carrie</td>
<td>13.9</td>
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<tr>
<td>Early Prince</td>
<td>10.4</td>
<td>1.6</td>
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</table>
Magic Wand 13.9 lb; 1.6 fruit/plant

RPX 6209 14.0 lb; 1.6 fruit/plant

Rhea 16.9 lb; 1.4 fruit/plant

Secretariat 14.8 lb; 1.4 fruit/plant
**Spartan** 18.1 lb; 1.4 fruit/plant

**Bayhorse Gold** 15.1 lb; 1.2 fruit/plant

**Kratos** 16.3 lb; 1.2 fruit/plant

**Orange Sunrise** 16.8 lb; 1.2 fruit/plant
Zeus 13.9 lb; 1.2 fruit/plant
Jack O’Lantern

Over 30 lbs
RPX 6903 26.3 lb; 1.4 fruit/plant
Bellatrix 16.3 lb; 1.2 fruit/plant
Big Doris 27.9 lb; 1.2 fruit/plant
Early King 21.3 lb; 1.2 fruit/plant
**Early Giant** 32.8 lb; 1.0 fruit/plant

**Hulk** 24.8 lb; 1.0 fruit/plant

**RPX 6879** 25.6 lb; 1.0 fruit/plant

**Tallon** 23.7 lb; 1.0 fruit/plant
Summary

- This is just a taste of some of the many options to fill your pumpkin niche
- Consider your market opportunity
  - Farm Market, retail, wholesale
- Yield isn’t everything...but it is important
- Remember this is one observation from one season, in one geography; all of these factors can change performance.
Thanks to...

• Seed Donors

• Trial Work
  • Bronwyn Aly, Elizabeth Wahle, Julie Zakes, Marc Lamczyk, Katie Bell, Maggie Ray, Talon Becker, and Laurie George
Cover Crops & No-Till Systems in Pumpkins
Benefits of No-till Production

• Decreased Erosion
  • Especially important on Highly Erodible Soils
• Better soil structure/aggregate stability
• Accumulation of soil organic matter
• Increased water infiltration
• Tillage/cultivation is not exposing new weed seeds
• Fewer decrease on fuel/equipment expenses

*Remember soil benefits are long term benefits!!*
A Little Tillage Can Go A Long Ways...
Challenges of No-till Production

• Finding/building equipment that is “No-till Ready”
• Managing Weeds
• Managing residue and overwintering pests
  • Increased need for good crop rotation
• Understanding field management strategies
• No-till production is not suited for all vegetable crops equally
• “But you have to work the ground!”
Cover Cropping and No-till

• Cover cropping is a major management practice fits very well into no-till production

• Many benefits:
  - Suppresses weeds
  - Prevents erosion
  - Reduces soil compaction
  - Improves soil drainage
  - Breaks up plow pans
  - Increases water infiltration
  - Increase soil organic matter
  - Produce nitrogen
  - Scavenges and holds nutrients
  - Improves soil tilth
  - Protects water quality
  - Suppress nematodes
  - Forage
  - Habitat for beneficial insects, pollinators, earthworms, and soil microbes
No-till/Cover Crop Benefits

• Cleaner fruit/fruit not lying directly on the soil
• Weed Control
• Nitrogen production (legumes)
• Easier field access/harvesting under adverse weather conditions
  • Especially less muddy after rains
• Habitat for beneficial insects (pollinators!)
  • Strips of Buckwheat planted around cucurbits
• Preserve soil moisture
• Overall improved soil health!
Cover Crop Selection

- Select cover crops based on your goals and season:
  - Weed control, nutrients, erosion prevention, etc.
  - Winter annual vs winter-killed

- Good residue cover/weed control
  - Cereal Rye, Triticale, Barley, Wheat, Oats

- Nitrogen production
  - Crimson Clover, Hairy Vetch

- Nutrient Scavenging
  - Oilseed Radish, Annual Ryegrass, Cereal Rye

- Erosion Management
  - Oats, Cereal grains, Annual Ryegrass, Clovers
# Midwest Cover Crops Council - Cover Crop Decision Tool

## Illinois: Jackson County Seeding Dates

### Location Information
- **Location Information**: Illinois, Jackson

### Cash Crop Information
- **Cash Crop**: None or Prevented Planting
- **Plant Date**: ____________________
- **Harvest Date**: ____________________

### Drainage Information
- **Select a Drainage Class**: ____________________
- **Flooding**: No

### Goal Information
- **Goal #1**: Select an attribute
- **Goal #2**: Select an attribute
- **Goal #3**: Select an attribute

### Select cover crop to create information sheet
- **Select cover crop**: 50% HV/50% Oats
- **Submit**: Submit

### Reliable Establishment

<table>
<thead>
<tr>
<th>Date</th>
<th>Reliable Establishment</th>
<th>Freeze Risk to Establishment</th>
<th>Frost Seeding</th>
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<tbody>
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### Nonlegumes
- Buckwheat
- Millet, Japanese
- Millet, Pearl
- Oats, Spring
- Rye, Winter Cereal
- Ryegrass, Annual
- Sorghum-sudangrass
- Sudangrass
- Triticale, Winter
- Wheat, Winter

### Brassicas
- Mustard, Oriental
- Radish, Oilseed
- Rapseseed/Canola
- Turnip, Forage type

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[mc-mcccc.msu.edu](http://mc.mcccc.msu.edu)
Cereal Rye

- Allelopathy
- Great soil builder
- Produces more biomass than other small grains
- Deeper rooting than most other small grains
- Good nitrogen scavenger
  - less need for supplemental N for cover crop growth
- Very cold hardy and can be planted late (Nov.)
  - Seeding rate 40-90 lbs/A
Crimson Clover

- Annual Clover
- Great soil builder
- Excellent nitrogen producer (Legume)
- Rapid vigorous growth
- Establish late summer/early fall
  - Seeding rate 10-20 lbs/A
- Small seed is easy to over-seed and establish into existing crops
Other Vegetable Crops Suited for No-till Production

- Pumpkins
- Cucumbers
- Squash
- Melons
- Watermelons
- Tomatoes
- Peppers
- Green beans
- Sweet corn
- Broccoli
- Cabbage
- Garlic...
Planting Methods

• Planting methods can be a challenge

• Equipment needs to be able to handle non-tilled soils and also residue
  • No-till transplanter
  • No-till planter
  • Hand planting
  • No-till drill
No-till “Ready” Equipment

• Coulters to cut residue and loosen soil
  • Wavy coulters to lead, double disk openers at planting shoe or seed tube
• Weight to get implement in the soil and also to ensure seed and transplant trench is closed
  • Transplanting: Added weight on back, flat closing wheels
  • Direct seeding: down pressure springs on planter unit, weight, cast iron closing wheels
Why Transplant??

• Better control of plant spacing
• More efficient use of seed
• Avoid issues with seed predation (voles)
• Plants have a competitive head start advantage over weeds
• Allows plants to get a head start before you are able to get into the field
  • Weather, cover crop maturity, etc.
Managing Weeds

- **Always** start clean!
- Cover crops
- Herbicides
  - Burndown (Roundup, Gramoxone...)
  - Residual (Dual Magnum, Sandea...)
  - Postemergence (Select, Poast [grass]...)
  - Post-directed (Gramoxone, Aim...)
- Hand weeding
Tips to Success with No-Till Production

• Start Small
• Make sure your equipment is “no-till ready”
  • Allow time to “adjust” your equipment for optimal planting
• Start & stay free of weeds
  • Cover crops, burndown/residual herbicide program, etc.
• Understand your challenges and how to manage them