

Pumpkin Boot Camp - 2024



CFAES

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Hybrid Selection & PM Fungicides Pumpkin Boot Camp Workshop

Jim Jasinski – Professor, Dept. of Extension, IPM Program



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 THE OHIO STATE UNIVERSITY
COLLEGE OF FOOD, AGRICULTURAL,
AND ENVIRONMENTAL SCIENCES

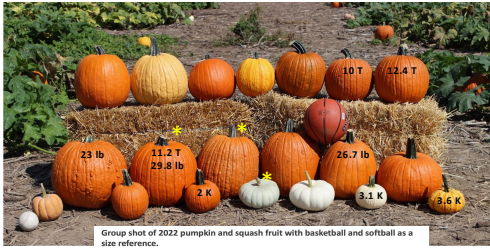
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Hybrid Selection for Disease Resistance

- **Selection process** - What you grew last year, what dad grew, what neighbors grow, what customers want, seed salesman tips, seed catalogs, University trial results?
- Recommend **PMT** or **PMR** hybrids that fit your market needs
- **PMT** or **PMR** hybrids delay or reduce disease pressure, may lead to fewer fungicide applications, result in higher quality / yield
- **Good news** – Solid resistance for powdery mildew and some viruses
- **OK news** - Some tolerance for Plectosporium (squash) and bacterial leaf spot
- **Bad news** - No commercial resistance for Phytophthora, Fusarium, bacterial wilt, yellow vine decline, downy mildew
- Trial **on-farm** under your management guidelines for true performance

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Disease Resistant Hybrids Trial – 2022



Group shot of 2022 pumpkin and squash fruit with basketball and softball as a size reference.
-On straw bales (L to R) Giltedge Gold, Lemonade, Eros, Fireball, Hermes, Garnet Gold, Spartacus.
-Large fruit in front of straw bales (L to R) Quigley Gold, Tons of Fun, Bannack Gold, Death Star, Sweet Baby Jane.
-Small fruit in front of straw bales (L to R) Autumn Frost, Autumn Pearl, Fort Knox, Winter Blush, Moon Stacker, Icicle, Warty Gnome.

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Hybrid Highlights – Large Fruit



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Hybrid Highlights – MD & Small Fruit



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Hybrid Highlights – Eye Catching Fruit



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Disease Resistant Hybrid Trial – 2022

- Plots 60' long; between row spacing 15'; within row spacing 3-4' (45-60ft²)
- Mix of direct seeded and transplanted in late May / early June
- 75# N (28-0-0) Sidedress prior to vining, no P or K
- Pests managed according to OSU/MWVP guidelines, no irrigation

2022 Pumpkin and Squash Hybrid Trial Results

Hybrid	Company	Catalog Size (lb)	Hybrid Maturity (days)	Avg fruit wt (lb)	# Mature Fruit	# Immature fruit	Estimated Yield / A (tons)	Estimated # fruit / A
Autumn Frost	Osborne seed	3-4	100	3.1	36	20	2.8	1,800
Autumn Pearl	Seedway	3-6	95	4.9	32	20	3.9	1,600
Bannack Gold*	Rupp	16-22	100	17.9	11	1	4.9	550
Death Star*	Osborne seed	18-22	100	26.7	11	0	7.3	550
Eros	Seedway	15	95	15.1	21	6	7.9	1,050
Fireball	Seedway	9	110	8.1	38	0	7.6	1,900
Fort Knox	Rupp	5-6	90	6.4	40	6	6.4	2,000
Garnet Gold	Rupp	13-17	100	14.8	27	1	10.0	1,350
Giltedge Gold*	Rupp	18-24	100	21.0	5	0	2.6	250

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Disease Resistant Hybrids Trial – 2022

Data from 2017-2023 on VegNet & my U.OSU.EDU site

2022 Pumpkin and Squash Hybrid Trial Results

Hybrid	Company	Host plant resistance	Development Notes
Autumn Frost	Osborne seed	PMT	minor BLS on fruit and foliage, very healthy foliage
Autumn Pearl	Seedway	PMT	heavy BLS on fruit, average foliage health
Bannack Gold*	Rupp	PMT	some BW, some BLS on fruit and foliage, average foliage health
Death Star*	Osborne seed	PMT	some BW, some BLS on fruit and foliage, average foliage health
Eros	Seedway	PMT	some BW, some BLS on fruit and foliage, average foliage health
Fireball	Seedway	PMT	some BLS on fruit and foliage, very healthy foliage
Fort Knox	Rupp	PMR	some BLS on fruit and foliage, average foliage health
Garnet Gold	Rupp	PMR	some BLS on fruit and foliage, average foliage health
Giltedge Gold*	Rupp	PMT	some BW, some BLS on fruit and foliage, average foliage health
Hermes	Stokes	PMT	more BLS on foliage than fruit, average foliage health

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Powdery Mildew Management

- PM is an annual disease in OH but does not OW here
- Plant PMT or PMR hybrids where possible
- Scout mid-July, edges & interior, upper & lower leaf surface
- Begin treatment when first PM colonies discovered up to harvest
- 7-14 D intervals, alternate FRACs, 35+GPA, 65+ PSI, hollow cone nozzle
- Procure (3) alt. w/ Quintec (13); Group M anytime (Bravo, Manzate, etc.)



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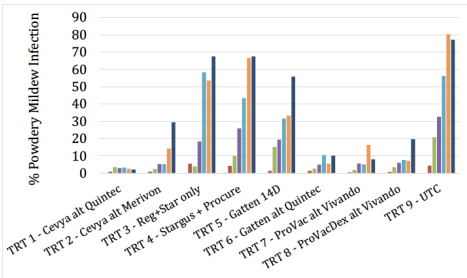
Powdery Mildew Fungicide Efficacy Trials

- Trials are the basis for our recommendations
- Conducted at Western Ag Research Station – S. Charleston
- Evaluate the performance of individual and combinations of fungicides against PM development on *Susceptible* hybrids
- 7-14 D rate upper and lower leaf surface in each TRT
- Trials and Reports going back to 2005 (u.osu.edu site)



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PM Fungicide Efficacy Trial - 2022



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PM Fungicide Efficacy Trial - 2022

Treatment	AUDPC	Overall Rating
TRT 1 - Cevya alt Quintec ^{3,13}	111.0	Excellent
TRT 6 - Gatte ^{U13} alt Quintec ¹³	230.5	Very Good
TRT 7 - ProVac alt Vivando ^{3, P4}	254.5	Very Good
TRT 8 - ProVacex alt Vivando ^{P4, 11}	269.8	Very Good
TRT 2 - Cevya alt Merivon ^{7,11}	332.3	Very Good
TRT 5 - Gatten 14D ^{U13}	983.4	Fair
TRT 3 – Reg + Star only	1322.8	Fair
TRT 4 - Stargus + Procure	1401.9	Fair
TRT 9 - UTC	1770.0	NA

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Other Recent Effective PM Fungicides

- Aprovia Top 3,7 (2021) - Syngenta
 - Luna Experience 3,7 (2020) - BASF
 - Luna Sensation 7,11 (2020) - BASF
 - Inspire Super 9,3 (2020) – Syngenta
-
- PM Resistance Evolves Over Time
 - Keep an Eye on Efficacy Shifts and Trends
 - Change PM Program as Needed

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Midwest Vegetable Production Guide Cucurbit Chapter

Fungicide Efficacy Table for Cucurbits

Reviewed by Dan Egel, Mississippi Extension, May 2012

This table includes efficacy information about the fungicides recommended in this guide, based on research and registrations of others. The products are listed alphabetically by Trade Name.

VPO=Very Good, G=Good, F=fair, P=poor, R=Registration

Trade Name	Active Ingredient	Mode of Action	Preventive	Curative	Seed Treatment	Seedling Treatment	Soil Treatment	Foliar Treatment	Systemic	Resistance
Aqua Nova (Fungicide)	Prochloraz	11								
Aqua Nova (Seed Treatment)	Prochloraz	11								
Asana (Fungicide)	Trifluoromethylpyridine	3								
Asana (Seed Treatment)	Trifluoromethylpyridine	3								
Asana (Seedling Treatment)	Trifluoromethylpyridine	3								
Asana (Foliar Treatment)	Trifluoromethylpyridine	3								
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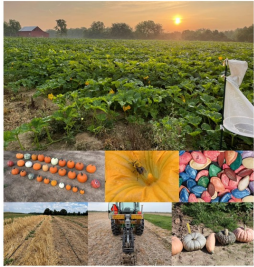
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Future Resources – New Pumpkin Guide

- Insect & Disease Management
- Herbicide and Mechanical Weed Mngt
- IPPM & Pollinators
- Natural Enemies
- Cover Crops
- Cultural Practices

Scheduled for release June 2024

A Modern Approach to Pest & Pollinator
Management in Pumpkin



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Thank You! Questions?

Jasinski.4@osu.edu

937-484-1526

Champaign County



- Do hybrid trials have value to you?
- Is PM fungicide selection important to you?
- Interested in biological fungicides (bacteria/fungi) based?
- What would be something of interest to see demonstrated at pumpkin field day?

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