

TOLERANCE OF CUCURBIT CROPS AND VARIETIES TO WHITEFLY TRANSMITTED VIRUSES



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THE

SILVERLEAF
WHITEFLY

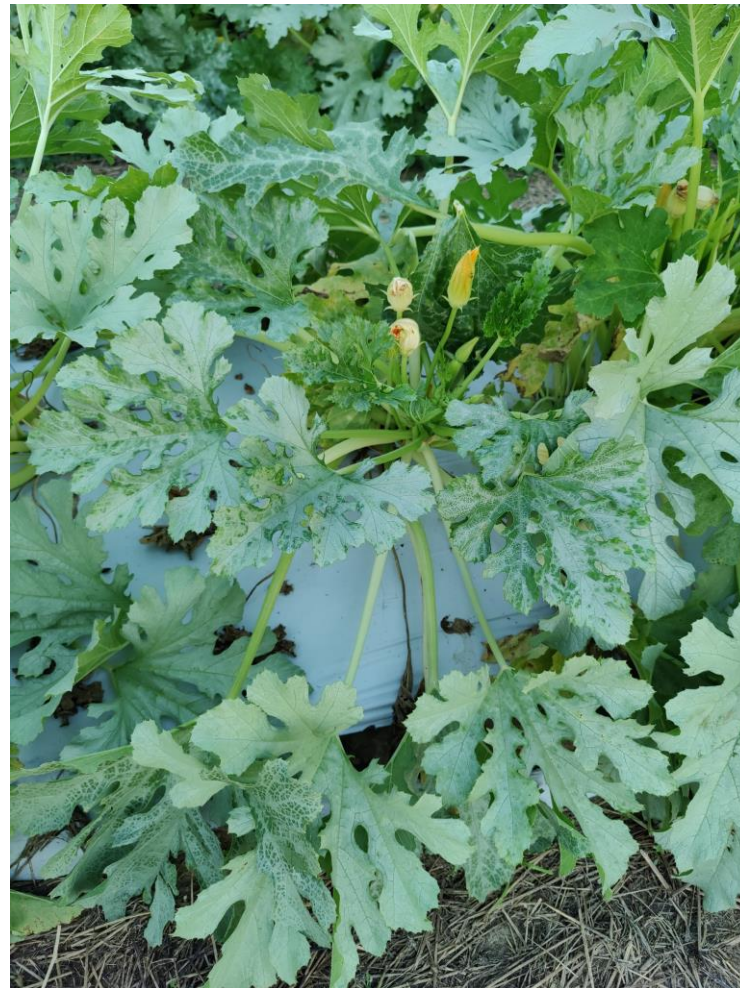
Whitefly Transmitted Viruses In GA

- Cucurbit Leaf Crumple Virus
 - Crumpled leaves on new growth
- Cucurbit Yellow Stunting Disorder Virus
- Cucurbit Chlorotic Yellows Virus
 - Yellowing on older growth
- Squash Vein Yellowing Virus
 - “Vine decline”

Crops and Varieties Tested in Fall 2023

Crops	Varieties									
	V1	V2	V3	V4	V5	V6	V7	V8	V9	V10
Yellow squash (<i>C. pepo</i>)	Gold Prize (SN)	Grand Prize (SN)	Lazor (SN)	Enterprise (SN)	Fortune (SN)	Cougar (SN)	Gentry (CN)	Gold Star (CN)	Lioness (SN)	Multipik (SN)
Zucchini (<i>C. pepo</i>)	Everglade	Spineless Supreme	Spineless Perfection	Spineless King	MGO 477	Fortress	Cardea	Renegade	Hurakan (Gray)	Rocio (Grey)
Cucumber (<i>C. sativus</i>)	Supremo (P)	Speedway	Dasher II	Raceway	Bristol	Cobra	Diamondback	Python	Brickyard	Tasty Green (G)
Winter Squash (<i>C. pepo</i> , <i>maxima</i> , <i>moschata</i>)	Tay Belle (A)	Table (A)	Ace Sweet Mama (K)	Golden Hubbard (H)	La Estrella (C)	Waltham (BN)	Ceres (BN)	Atlas (BN)	Ultra HP (BN)	Genesis (BN)
Pumpkin (<i>C. pepo</i> , <i>moschata</i>)	Spartan	Secretariat	Zeus	Big Loretta	Orange Bulldog (M)	-	-	-	-	-

Whitefly Infestation, Silvering and Virus in Zucchini



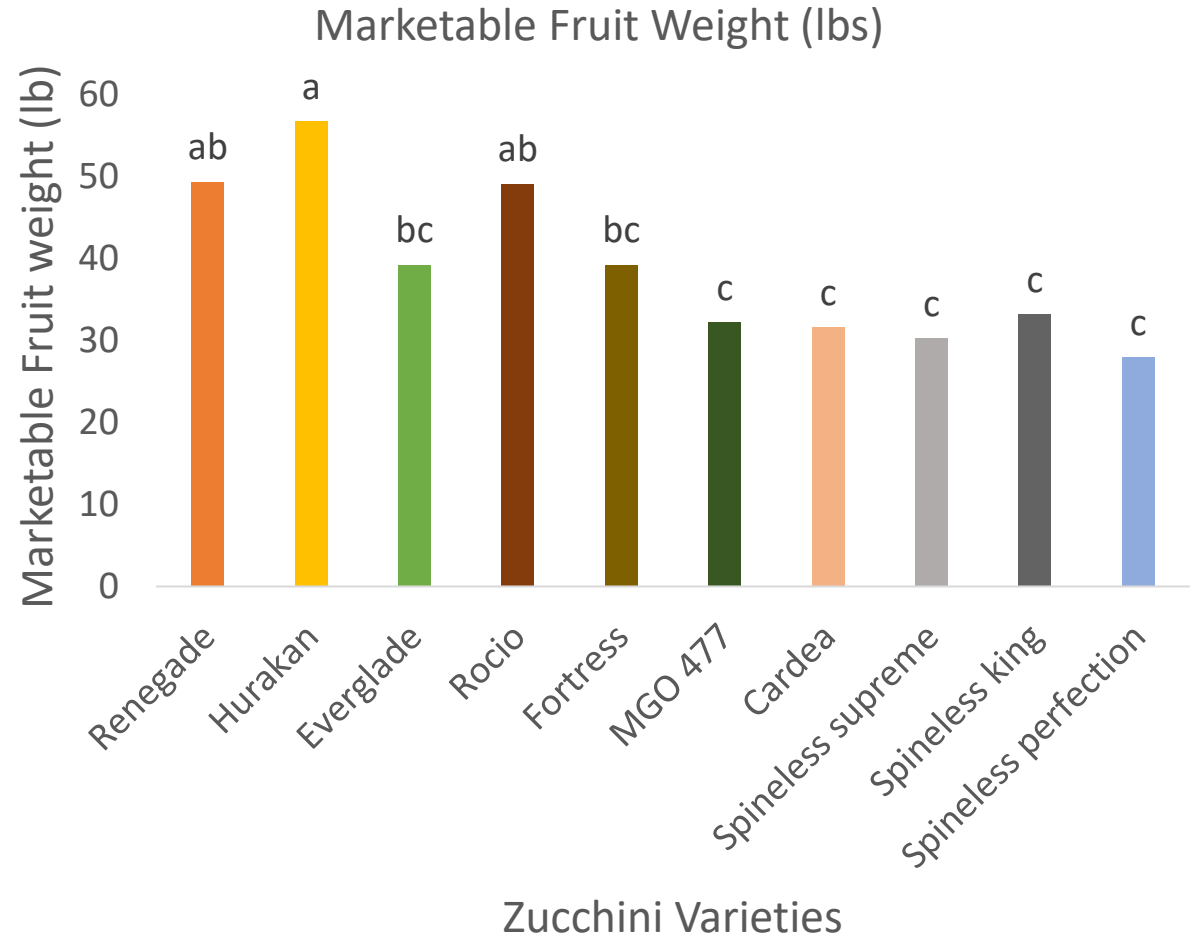
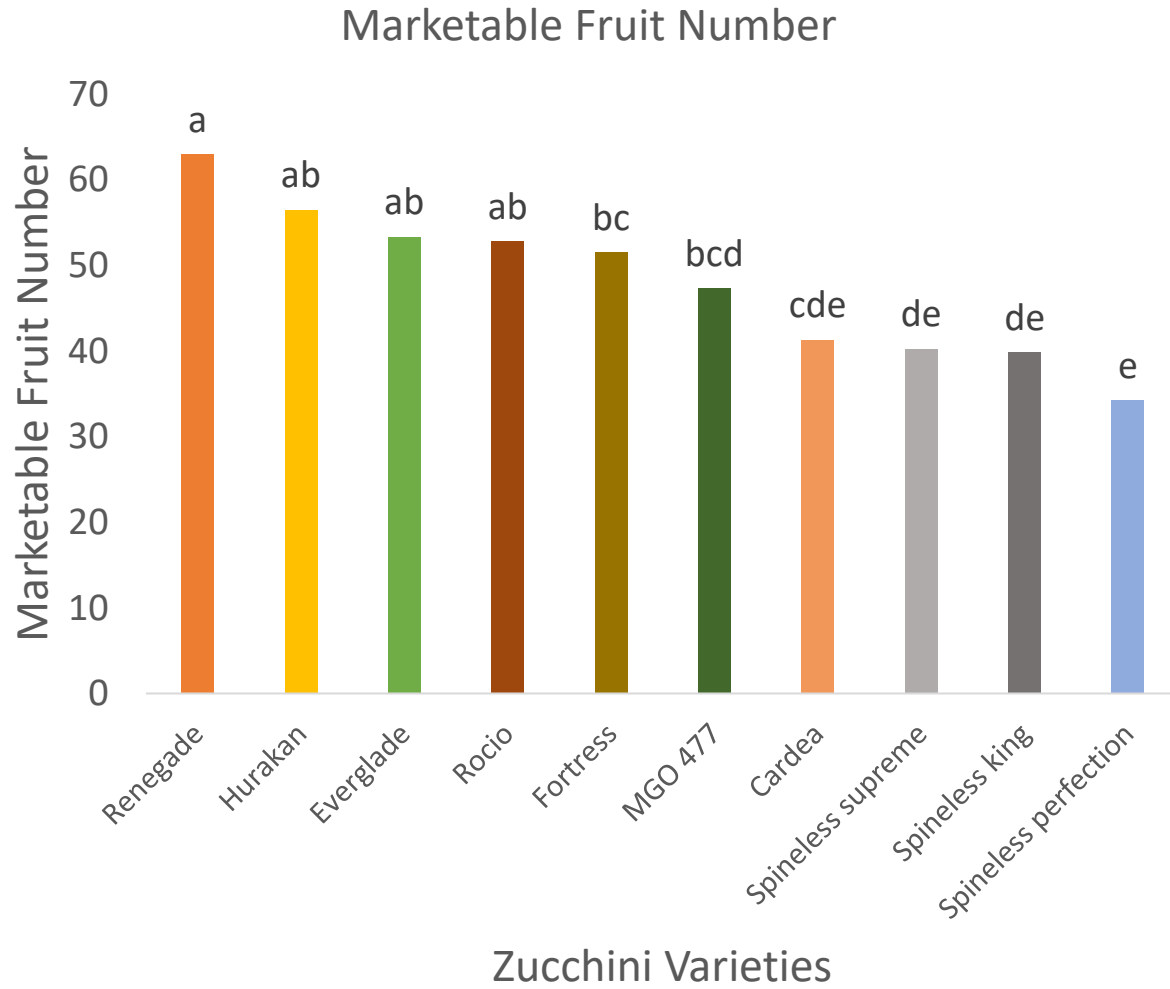
Silvering in Zucchini Plants



Common Virus Symptoms in Zucchini Plants



Zucchini Marketable Fruit Yield



Zucchini Unmarketable Yield Results 2023

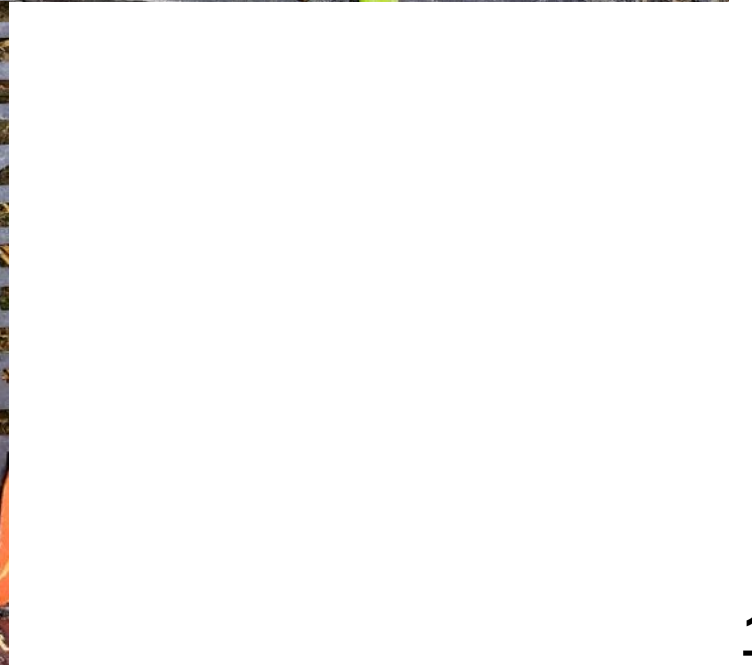
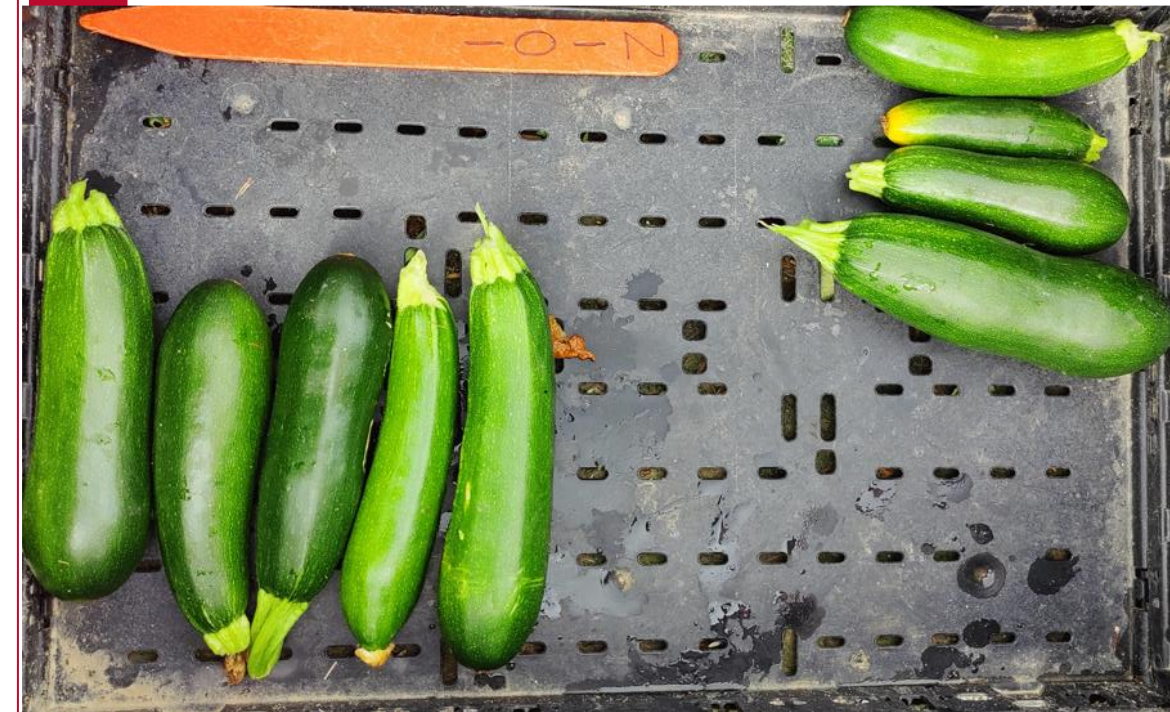
Variety	Virus Fruit Number	Virus Fruit Weight (lb)	Unmarketable Fruit Number	Unmarketable Fruit Weight (lb)	Length (In)	Width (In)
Renegade	0.00 d	0.00 c	6.00 cde	4.93 bc	36.93 ab	11.28 b
Hurakan	0.27 cd	0.20 c	3.75 de	2.39 c	31.95 b	15.06 a
Everglade	0.27 cd	0.15 c	13.20 ab	8.39 a	36.60 ab	9.75 b
Rocio	0.00 d	0.00 c	3.12 e	2.23 c	34.28 ab	13.34 a
Fortress	0.00 d	0.00 c	9.25 abc	6.50 ab	38.37 a	10.18 b
MGO 477	3.61 b	2.73 b	13.58 a	7.29 ab	36.04 ab	10.84 b
Cardea	0.27 cd	0.12 c	9.56 abc	5.99 ab	38.51 a	10.95 b
Spineless Supreme	0.55 cd	0.42 c	9.00 bc	6.29 ab	34.87 ab	9.87 b
Spineless King	2.22 bc	1.67 bc	7.72 cd	5.09 bc	39.09 a	9.98 b
Spineless Perfection	9.16 a	7.21 a	8.50 c	6.18 ab	34.93 ab	11.43 b

Zucchini Silvering, Virus and Downy Scoring 2023

Variety	Average Silvering (1-5)	Virus Incidence (%)	Virus Severity (0-4)	AUDPC Downy
Renegade	2.09 cd	0.00 d	0.00 c	22.750 b
Hurakan	2.38 bcd	20.00 abcd	1.00 bc	26.250 ab
Everglade	1.93 d	35.55 ab	1.25 b	30.625 ab
Rocio	1.88 d	5.00 cd	0.25 bc	21.875 b
Fortress	2.34 bcd	20.00 abcd	1.00 bc	25.375 ab
MGO 477	2.89 ab	30.83 ab	1.00 bc	29.750 ab
Cardea	2.50 bcd	24.37 abcd	1.00 bc	25.375 ab
Spineless Supreme	2.64 bc	15.00 bcd	0.50 bc	28.000 ab
Spineless King	2.58 bc	29.16 abc	1.25 b	32.375 a
Spineless Perfection	3.29 a	42.50 a	2.75 a	22.750 b

Zucchini Fruits (Healthy and Virus)





Renegade Fruits



Specialty: Hurakan and Rocio



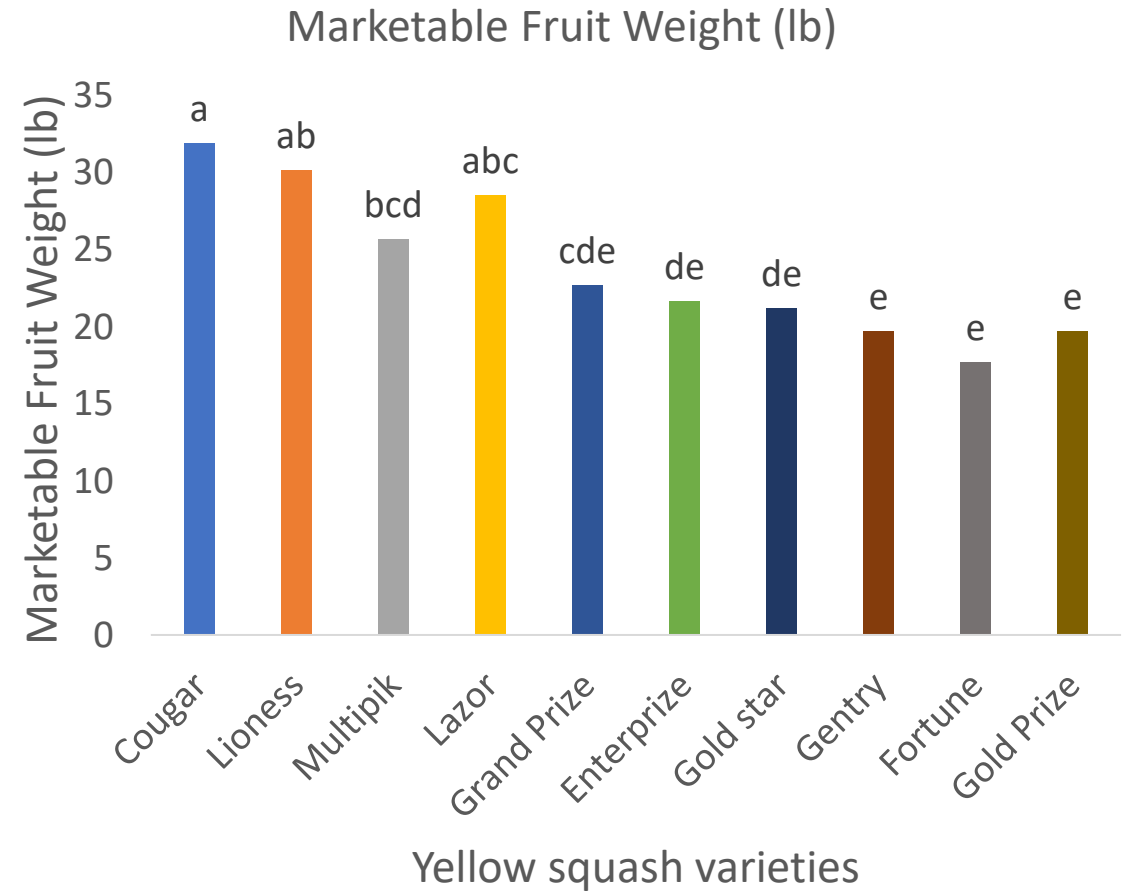
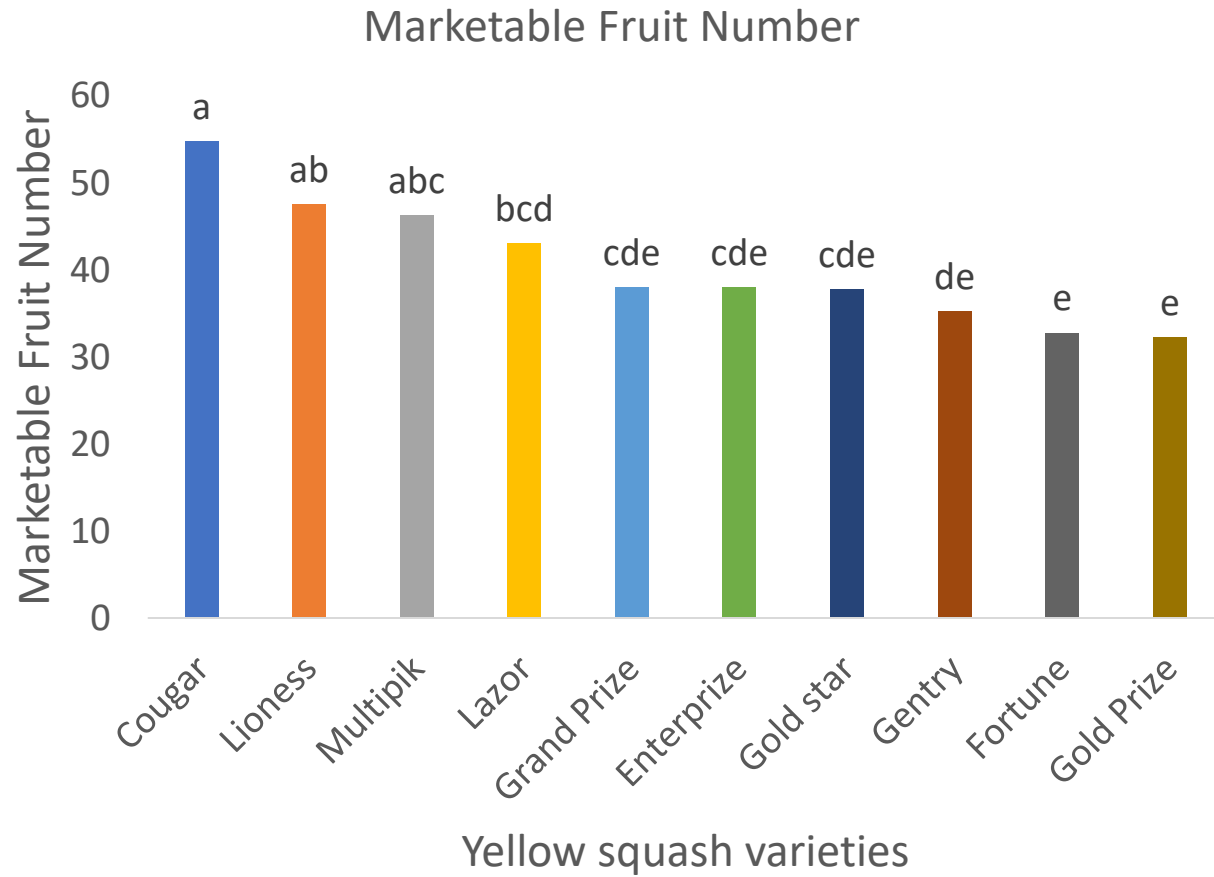
Whitefly Infestation, Silvering and in Yellow squash



Common Virus Symptoms in Yellow Squash



Yellow squash Marketable Yield Results 2023



Yellow squash Unmarketable Yield Results 2023

Variety	Virus Fruit Number	Virus Fruit Weight (lb)	Unmarketable Fruit Number	Unmarketable Fruit Weight (lbs)	Length (In)	Width (In)
Cougar	1.00 b	0.30 b	8.75 b	4.33 ab	7.81 ab	2.36 b
Lioness	0.25 b	0.35 b	6.50 b	3.54 ab	8.47 a	3.07 a
Multipik	2.75 b	1.14 b	12.50 a	5.31 a	6.76 cde	2.02 b
Lazor	0.50 b	0.11 b	6.50 b	3.41 bc	8.47 a	2.20 b
Grand Prize	0.00 b	0.00 b	8.50 b	3.59 ab	7.67 abc	2.26 b
Enterprise	3.27 b	1.58 b	9.72 ab	4.80 ab	7.22 bcd	2.39 b
Gold Star	0.00 b	0.00 b	2.25 c	1.62 cd	6.41 de	2.47 ab
Gentry	12.00 a	4.40 a	12.27 a	4.24 ab	6.08 e	2.39 b
Fortune	1.75 b	1.27 b	7.00 b	3.38 bcd	7.65 abc	2.51 ab
Gold Prize	0.75 b	0.38 b	2.75 c	1.54 d	7.89 ab	2.29 b

Yellow squash scoring Results 2023

Variety	Average Silvering (1-5)	Virus Incidence (%)	Virus Severity (0-4)	AUDPC Downy
Cougar	1.96 cd	75.0 bcd	3.25 ab	19.25 cd
Lioness	2.10 bcd	45.0 e	2.25 c	14.87 d
Multipik	2.21 bc	92.5 ab	3.75 ab	28.87 ab
Lazor	2.14 bcd	72.5 cd	2.25 c	21.00 bcd
Grand Prize	2.64 ab	62.5 de	3.00 bc	25.37 bc
Enterprise	2.21 bc	85.0 abc	3.50 ab	25.37 bc
Gold star	1.60 d	75.0 bcd	3.75 ab	28.00 ab
Gentry	2.50 abc	100.0 a	4.00 a	35.00 a
Fortune	2.89 a	92.5 ab	4.00 a	28.87 ab
Gold Prize	2.28 bc	62.5 de	3.00 bc	18.37 cd

Yellow Squash Fruit (Healthy and Virus)





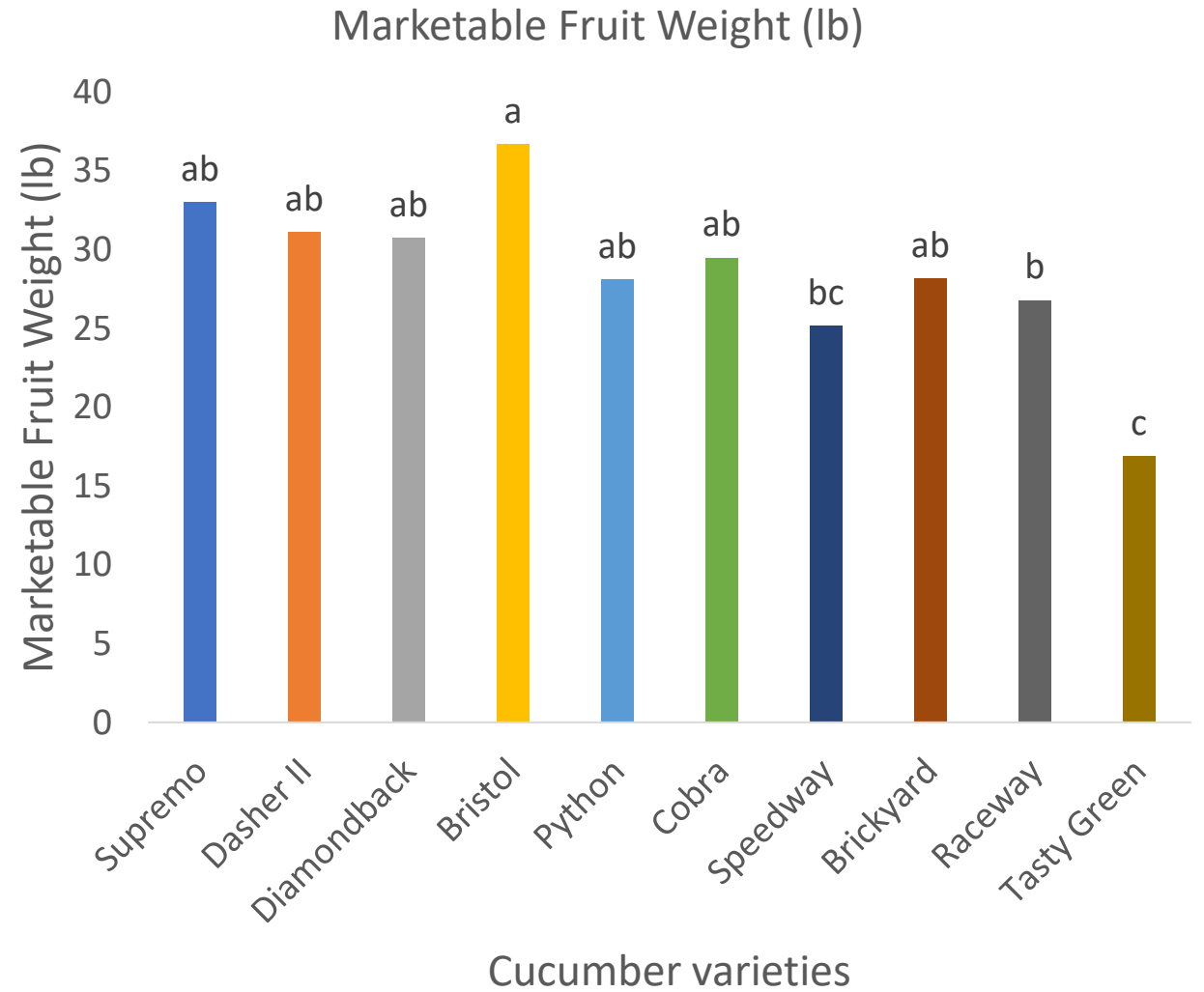
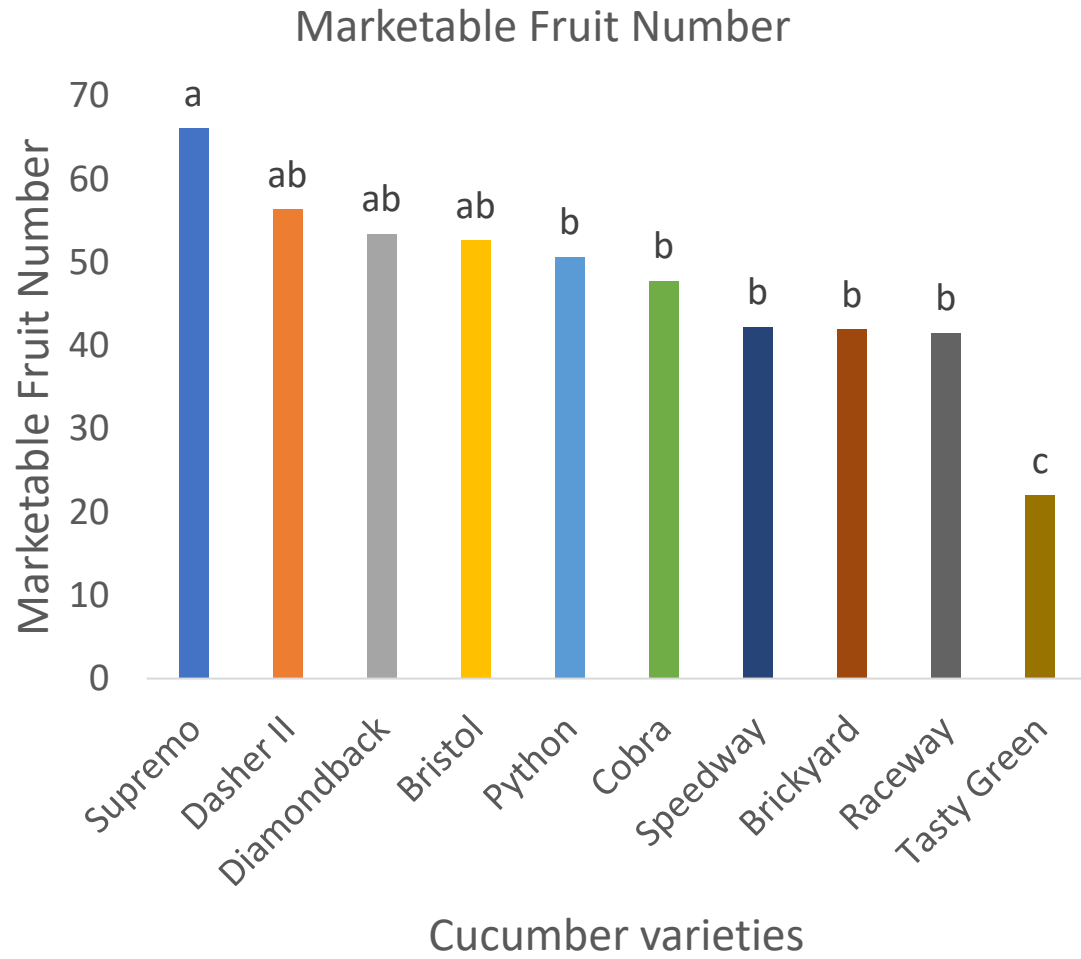
Whitefly Infestation and Virus in Yellow squash



Virus Symptoms in Cucumber



Cucumber Marketable Fruit Yield



Cucumber Yield Results 2023

Variety	Virus Fruit Number	Virus Fruit Weight (lb)	Unmarketable Fruit Number	Unmarketable Fruit Weight (lb)	Length (In)	Width (In)
Supremo (P)	0.00 b	0.00 a	17.25 b	5.93 c	5.02 d	2.00 a
Dasher II	2.25 a	1.50 a	20.27 ab	9.29 bc	7.55 bc	2.05 a
Diamondback	0.50 b	1.38 a	23.34 ab	10.22 bc	7.62 bc	1.91 ab
Bristol	0.00 b	0.00 a	15.80 b	8.36 bc	8.04 bc	1.94 a
Python	0.38 b	0.64 a	17.55 b	7.99 bc	7.38 c	1.89 ab
Cobra	0.00 b	0.00 a	16.75 b	7.67 bc	7.41 c	1.76 abc
Speedway	1.00 ab	0.69 a	20.77 ab	9.29 bc	6.95 c	1.90 ab
Brickyard	0.00 b	1.66 a	20.55 ab	8.67 bc	7.49 c	1.60 bc
Raceway	0.00 b	0.00 a	23.05 ab	11.02 b	8.59 b	1.87 ab
Tasty Green (G)	0.00 b	1.00 a	27.25 a	15.96 a	10.12 a	1.41 c

Cucumber Scoring Results 2023

Variety	Virus Incidence (%)	Virus Severity (0-4)	AUDPC Downy
Supremo	72.5 b	2.50 b	3.37 cd
Dasher II	75.0 b	2.75 ab	4.12 bc
Diamondback	67.5 b	2.25 b	3.50 bcd
Bristol	67.5 b	2.25 b	3.00 d
Python	82.5 ab	2.50 b	4.00 bcd
Cobra	67.5 b	2.25 b	3.12 cd
Speedway	97.5 a	3.50 a	4.50 ab
Brickyard	67.5 b	2.50 b	4.12 bc
Raceway	65.0 b	2.25 b	3.25 cd
Tasty Green	65.0 b	2.75 ab	5.37 a

Cucumber Fruits (Marketable and Unmarketable)



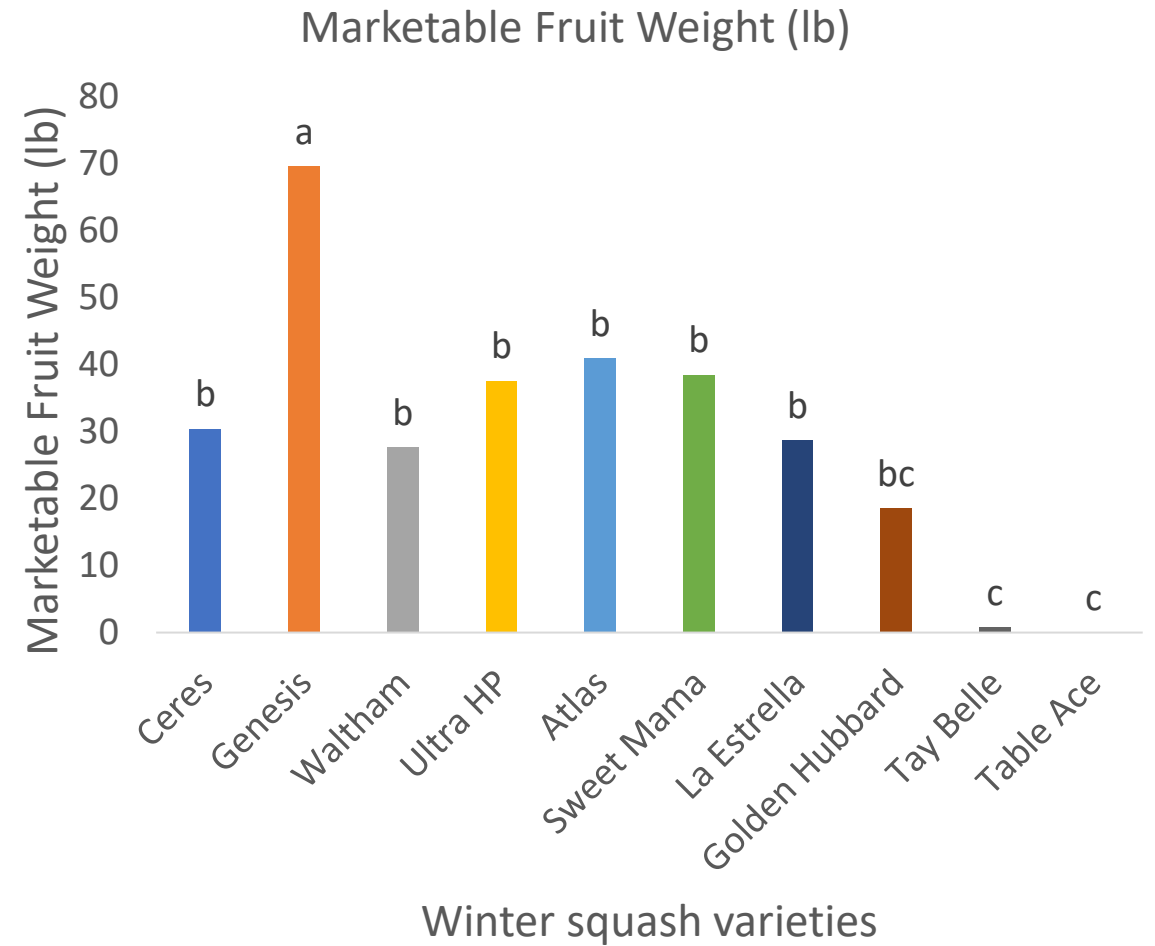
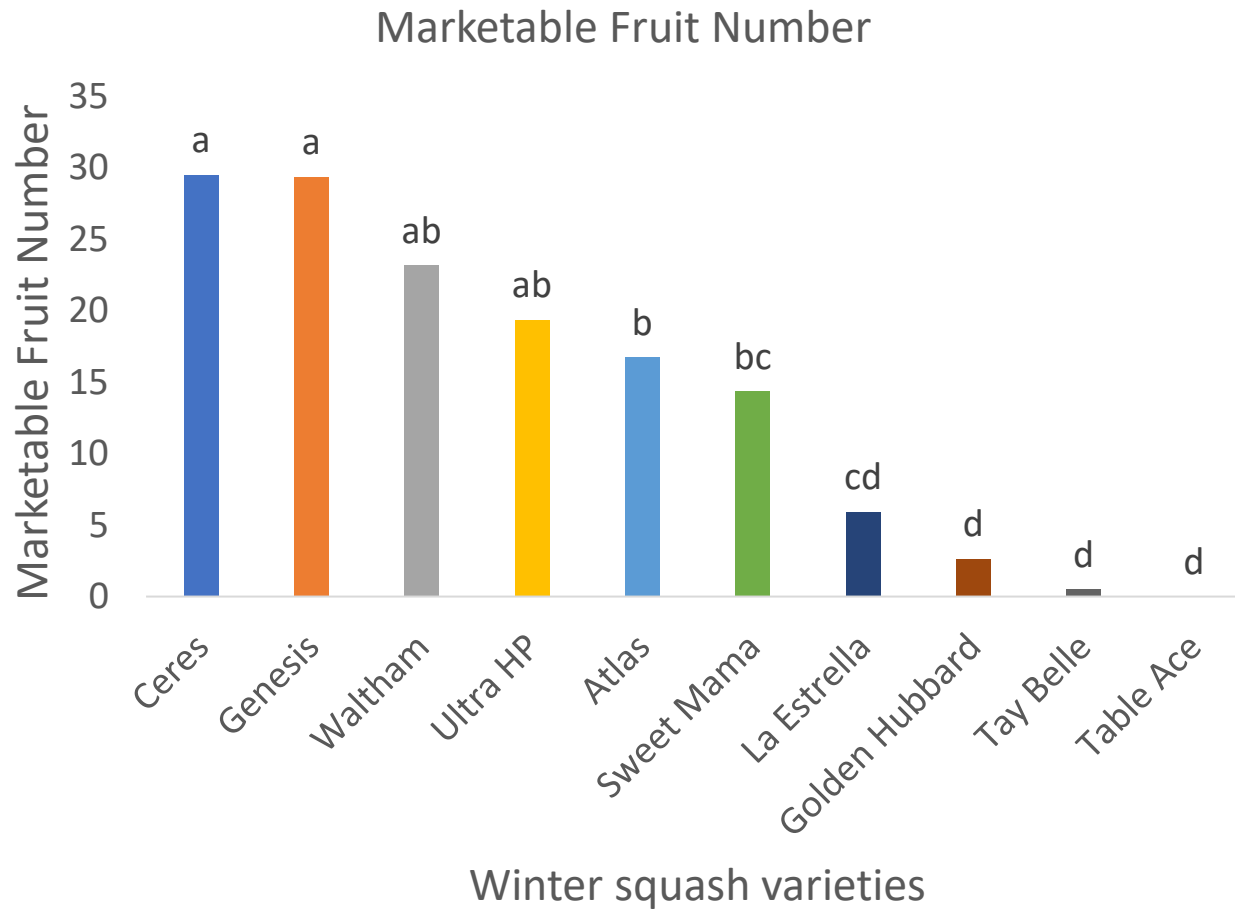
Whitefly Infestation, Silvering and Virus in Winter Squash



Silvering in Winter Squash Plants



Winter Squash Marketable Yield Results 2023



Winter Squash Unmarketable Yield Results 2023

Variety	Virus Fruit Number	Virus Fruit Weight (lb)	Unmarketable Fruit Number	Unmarketable Fruit Weight (lb)	Length (In)	Width (In)
Ceres	0.00 b	0.00 b	19.37 a	10.06 b	6.96 c	3.16 c
Genesis	0.00 b	0.00 b	5.05 cde	7.14 b	11.90 a	4.18 c
Waltham	0.00 b	0.00 b	12.30 abcd	10.18 b	7.16 c	3.36 c
Ultra HP	0.00 b	0.00 b	11.77 abcd	10.96 b	10.86 ab	3.87 c
Atlas	0.25 b	0.25 b	5.50 bcde	13.00 b	10.03 b	4.33 c
Sweet Mama	0.00 b	0.00 b	1.57 e	2.52 b	4.98 d	5.88 b
La Estrella	0.25 b	0.25 b	15.43 ab	38.86 a	6.22 c	7.05 ab
Golden Hubbard	0.75 b	0.87 b	2.40 de	12.99 b	6.92 c	8.26 a
Tay Belle	9.73 ab	9.69 ab	13.35 abc	13.84 b	4.15 d	4.08 c
Table Ace	18.35 a	21.55 a	4.16 cde	4.93 b	4.63 d	4.38 c

Winter Squash Scoring Results 2023

Variety	Average Silvering	Virus Incidence (%)	Virus Severity (0-4)	AUDPC Downy
Ceres	2.92 bc	100.0 a	3.00 cd	30.62 bc
Genesis	2.53 cd	97.5 a	3.00 cd	40.25 abc
Waltham	1.00 f	100.0 a	3.75 ab	43.75 ab
Ultra HP	3.07 bc	100.0 a	4.00 a	45.50 ab
Atlas	2.21 de	97.5 a	3.25 bc	49.00 ab
Sweet Mama	3.85 a	50.0 c	2.25 e	25.37 c
La Estrella	1.78 e	100.0 a	2.75 cde	35.00 abc
Golden Hubbard	3.42 ab	90.0 b	2.50 de	49.00 ab
Tay Belle	2.67 cd	100.0 a	4.00 a	49.00 ab
Table Ace	2.82 bcd	100.0 a	3.75 ab	50.75 a



Ceres



Genesis



Waltham



Ultra HP





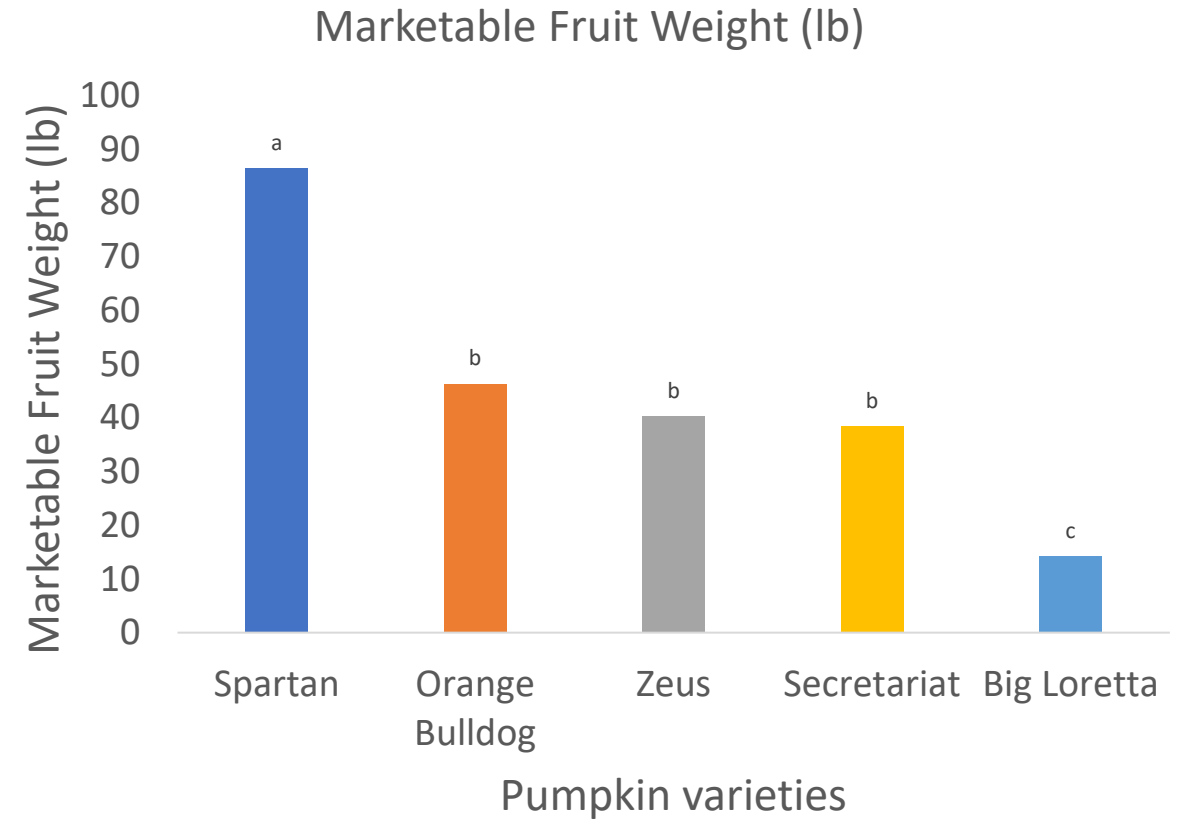
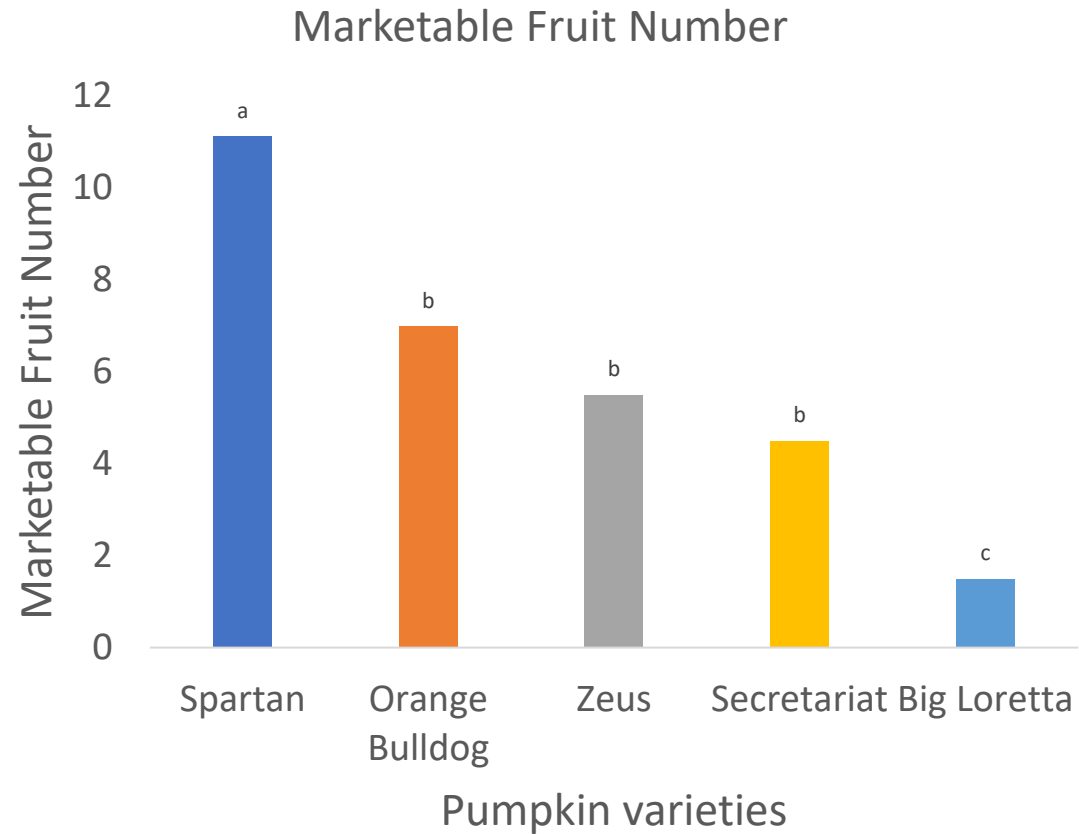
Whitefly Infestation, Silvering and Virus in Pumpkin







Pumpkin Marketable Yield Results 2023



Pumpkin Yield Results 2023

Variety	Unmarketable Fruit Number	Unmarketable Fruit Weight (lb)	Length (In)	Width (In)
Spartan	9.87 a	34.32 a	9.61 b	8.90 a
Orange Bulldog	7.79 a	25.82 a	7.55 b	9.38 a
Zeus	5.50 a	16.67 ab	9.41 b	8.39 a
Secretariat	5.25 a	6.52 b	8.64 b	9.64 a
Big Loretta	6.00 a	27.34 a	14.0 a	8.08 a

Pumpkin Scoring Results 2023

Variety	Average Silvering Score (1-5)	Virus Incidence (%)	Virus Severity (0-4)	AUDPC Downy
Spartan	2.07 b	100 a	3.75 a	33.25 ab
Orange Bulldog	3.32 a	100 a	2.00 c	16.62 c
Zeus	1.89 b	100 a	3.00 b	24.50 bc
Secretariat	1.78 b	100 a	3.00 b	42.87 a
Big Loretta	2.17 b	100 a	3.25 ab	40.25 a



Big Loretta



Orange Bulldog



Zeus



Spartan



Secretariat



Summary

- Summer Squash
 - Zucchini > Yellow Squash

- Zucchini
 - Green
 - Renegade*, Everglade, Fortress
 - Specialty
 - Hurakan, Rocio*
 - Spineless Performed Poor
 - Spineless Supreme

Summary Continued

- Yellow Squash
 - Cougar, Lioness*, Multipik, Lazor
- Cucumber
 - Slicers
 - Bristol*, Dasher II, Diamondback
 - Pickling
 - Supremo

Summary Continued

- Winter Squash
 - Butternut
 - Genesis
- Pumpkin
 - Spartan

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*Thank
You*



Comments and feedback are highly appreciated