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SUMMER SQUASH VARIETY TRIALS 2012

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Summer Squash Trial

The 2012 summer squash trial included 37 varieties: 19 green zucchini, 5 golden zucchini, 10 yellow squash, and 3 scallop squash. The trial was direct-seeded on June 5, with a target stand of 30 plants per variety 12 inches apart within the row. Irrigation and fertilizer were provided via drip tape but no plastic mulch was used. Weeds were controlled by cultivation. The warm soil favored germination, with most varieties emerging by June 15. The newly-emerged seedlings were sprayed with a mixture of Azatrol and Regalia against striped cucumber beetles and bacterial wilt; the Azatrol failed to repel the beetles so the trial was sprayed with Pyganic and covered with summer-weight Agribon until flowering began. Harvest began on July 18 and the trial was harvested 3x/week until August 24. Fruit was counted and graded into marketable or cull; most culls were due to shape defects. The most common defect was narrow blossom ends and/or bulbous midsections, most likely due to incomplete pollination. Data was also collected on squash vineborer infestation, powdery mildew infection, and severity of plectosporium blight infection. Plectosporium blight was rated August 15; powdery mildew and vineborer were rated August 31.

Zucchini

‘Reward’ had the highest total yield of the green zucchini with 305 fruit, but ‘Quirinal’ had the highest marketable yield as the slightly lower total yield was more than offset by the significantly lower rate of cull fruit. Both varieties had excellent establishment and good seedling vigor, and were similar in terms of insect and disease resistance. ‘Golden Rod’ was the most prolific of the golden zucchini with 350 fruit, and also had the highest marketable yield despite having the highest percentage of culls.

Cull rates in the green zucchini ranged from 44% down to 1%. ‘Bush Baby’ had the fewest culls. Yield was moderate, due to a combination of small plants and only 57% seedling emergence. ‘Limon’, a unique yellow-green variety, had the second-lowest cull rate at 9% and much higher yields than ‘Bush Baby’ despite only 50% seedling emergence. Cull rates in the golden zucchini were lower than in the green zucchini, ranging from 17% to 5%. ‘Sebring’ had the lowest cull rate, and came in second on both yield and seedling establishment.

Seedling establishment rates in the green zucchini ranged from 100% for ‘Felix’ and ‘Elite’ down to only 13% for ‘Midnight Lightning’. ‘Elite’ also had the best seedling vigor, followed by ‘Spineless King’ and ‘Endeavor’. Among the golden zucchini entries seed establishment rates ranged from 93% for ‘Golden Rod’ down to 40% for ‘Golden Glory’. ‘Golden Rod’ also had the highest seedling vigor.

None of the zucchini varieties completely escaped problems with plectosporium blight, but ‘Envy’ and ‘Elite’ were the most severely infected. The varieties with the least plectosporium infection all had poor stand establishment, suggesting that the low plectosporium levels may have been due to increased plant spacing rather than any sort of tolerance. ‘Costata Romanesco’ had the best tolerance to powdery mildew and few problems with squash vine borer. However, poor emergence and extremely low yields meant that other varieties were more rewarding. ‘Envy’ had the highest level of squash vine borer

damage, while ‘Felix’, ‘Reward’, ‘Justice III’, ‘Limon, and ‘Dunja’ shared Costata Romanesco’s lack of damage.

Table 1. Trial data for golden and green zucchini

Variety	Source ^a	Type	% Est.	seedling vigor ^b	Total Fruit	% Culls	mkt. Fruit	powdery mildew ^c	plectosporium ^d	SVB ^e
Bush Baby	JSS	zucchini	57	3.0	93	1	92	3.0	2.0	2.3
Costata Romanesco	JSS	zucchini	33	3.0	39	23	30	4.0	2.5	1.0
Dunja	High Mowing and JSS	zucchini	23	2.0	74	22	58	2.0	1.0	1.0
Elite	Harris	zucchini	100	4.7	247	32	168	2.7	3.0	2.3
Endeavor	Siegers	zucchini	97	4.3	288	24	219	3.7	1.7	3.7
Envy	Siegers	zucchini	97	3.3	215	19	175	2.5	3.0	5.0
Felix	Harris	zucchini	100	2.7	180	22	141	1.7	2.3	1.0
Golden Glory	JSS	golden	40	2.0	98	5	93	2.0	1.0	2.0
Golden Rod	Harris	golden	93	3.7	350	17	292	2.7	1.7	2.0
Goldy	High Mowing and JSS	golden	53	2.0	75	7	70	2.5	2.0	1.5
Justice III ^f	Siegers	zucchini	67	2.3	249	25	187	2.7	2.3	1.0
Limon ^g	dp Seeds	zucchini	50	3.3	158	9	144	3.0	1.0	1.0
Midnight Lightning	High Mowing	zucchini	13	3.0	59	44	33	3.0	1.0	
Obsidian	dp Seeds	zucchini	57	2.3	127	13	110	2.5	2.5	2.5
Partenon	High Mowing	zucchini	57	2.3	193	20	154	1.3	1.3	3.7
Paycheck	Seedway	zucchini	83	2.7	222	12	196	2.0	2.0	3.7
Plato	JSS	zucchini	27	2.0	59	14	51	3.0	2.0	3.0
Quirinal	Siegers	zucchini	97	4.0	295	17	246	3.3	1.7	3.0
Reward	Harris	zucchini	97	3.0	305	26	226	2.7	2.3	1.0
Safari	JSS	zucchini	60	2.0	96	33	64	1.5	2.0	3.0
Sebring	Siegers	golden	87	2.0	230	5	219	3.3	2.0	1.0
Spineless King	Seedway	zucchini	97	4.3	275	32	188	3.0	2.7	3.3
Spineless Perfection	JSS	zucchini	77	3.3	226	15	192	2.3	2.3	3.7
Sunbeam	JSS	golden	67	3.3	140	8	129	3.0	1.3	1.0

^a JSS is Johnny’s Selected Seeds

^b seedling vigor was rated on scale of 1-5 with 5 being superior when seedlings had 1 true leaf

^c powdery mildew was rated on a scale of 1-5 with 5 indicating severe disease

^d plectosporium blight was rated on a scale of 0-3 with 0 indicating no disease and 3 indicating severe disease on leaves, stems, and fruit

^e squash vine borer damage was rated on a scale of 1-5 where 1 indicates no visible damage.

^f Justice III is a transgenic variety engineered for virus resistance

^g Limon had green fruit with bright yellow speckles

Yellow Squash and Scallop Squash

‘Superpik’ lived up to its name by being the highest yielding yellow squash in the trial, both in total yield and in marketable yield. ‘Butta’ and ‘Lazor’ were second and third, respectively. Lazor’s yields were particularly impressive in light of its mediocre establishment. ‘Sunburst’ was the highest-yielding scallop squash, followed by ‘Peter Pan’.

Cull rates in the yellow squash were generally lower than for the zucchini. The range was similar, from 40% to 1%, but only two entries had cull rates over 20%. The entries with the most culls were Prelude II with 40% and Conqueror III with 30%. Both of these are varieties with transgenic resistance to some common viruses; ironically the high cull rates were due to virus infection! The plants were most likely infected with squash mosaic virus, which is seedborne, and to which the varieties are not resistant.

Seedling establishment rates ranged from 93% for ‘Sunburst’ and ‘Butta’ down to 33% for ‘Prelude II’ and ‘Flying Saucer’. ‘Flying Saucer’ had the highest seedling vigor, followed by ‘Butta’, ‘Sligo’, and ‘Sunburst’.

In general the yellow squash had fewer problems with plectosporium blight and squash vine borer than did the zucchini. ‘Sligo’ and ‘Butta’ were the only entries with significant plectosporium blight damage, and those two varieties plus ‘Peter Pan’ and ‘Sunburst’ had the most squash vine borer damage. ‘Cheetah’ had the least powdery mildew, followed by ‘Peter Pan’ and ‘Sunburst’.

Table 2. Data for yellow and scallop squash varieties

Variety	Source	Type	% Est. ^a	seedling vigor ^b	Total Fruit	% Culls	mkt. fruit	powdery mildew ^c	plecto-sporium ^d	SVB ^e	Notes
Flying Saucer	JSS and Harris	scallop	33	4.3	43	14	37	3.0	0.0	1.0	
Sunburst	JSS	scallop	93	3.3	173	5	164	1.3	0.7	2.0	
Peter Pan	JSS	scallop	77	2.0	102	2	100	1.3	1.0	3.0	green fruit
Prelude II	Seedway	yellow	33	2.0	20	40	12	4.0	0.0	1.0	transgenic
Conqueror III	Siegers	yellow	47	1.7	128	30	89	3.0	0.0	1.0	transgenic
Slick Pik	JSS	yellow	47	2.0	148	14	127	3.0	0.0	1.0	
Zephyr	JSS	yellow	43	2.7	141	13	122	4.0	0.0	1.0	bicolor fruit
Sligo	dp Seeds	yellow	73	3.3	224	13	196	2.0	2.8	2.3	
Super Pik	Harris	yellow	90	2.7	307	6	289	3.7	0.0	1.0	
Enterprise	Siegers	yellow	65	2.0	101	5	96	1.5	0.0	1.0	
Cheetah	Harris	yellow	90	2.7	166	3	161	1.0	1.7	1.0	
Butta	Harris	yellow	93	3.7	250	2	244	3.3	2.7	3.3	
Lazor	Seedway	yellow	67	2.3	227	1	224	2.3	0.7	1.0	

^a Establishment percentage is based on 30 seeds per variety

^b seedling vigor was rated on scale of 1-5 with 5 being superior when seedlings had 1 true leaf

^c powdery mildew was rated on a scale of 1-5 with 5 indicating severe disease

^d plectosporium blight was rated on a scale of 0-3 with 0 indicating no disease and 3 indicating severe disease on leaves, stems, and fruit

^e squash vine borer damage was rated on a scale of 1-5 where 1 indicates no visible damage.

THE BACTERIAL INFECTION OF FRESH EGGS

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