

Fig. 2. Fruit-set on vines of miniature-fruited cultivars may occur at every third node.

E. Waters, 1983, Pumpkin variety evaluation, Univ. of Fla. Bradenton Gulf Coast Res. and Educ. Center Res. Rept., BRA 1983-3) performed well. Yield of 'Little Boo' probably was too low for commercial acceptance. The miniature pumpkin cultivars ranked near the bottom in terms of yield by weight both in Manatee county and Leesburg; however, since they were quite small, they produced significantly more fruit per acre than the other entries. Vine growth of the miniature-fruited cultivars was much less than that of the larger-fruited cultivars but fruit-set occurred at every third node (Fig. 2). Spacing between rows possibly could be reduced from 10 or 13 ft to 5 or 6 ft and yield might be doubled.

Proc. Fla. State Hort. Soc. 101:385-389. 1988.

EVALUATION OF LEEK CULTIVARS IN WEST CENTRAL FLORIDA

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Additional index words. *Allium ampeloprasum* Porrum group, variety trial.

Abstract. Leek (*Allium ampeloprasum* L. Porrum group) cultivars were evaluated for 3 seasons to determine their potential for commercial production in west central Florida. Ten cultivars were evaluated in 1985-86, 23 cultivars in 1986-87, and 15 cultivars in 1987-88.

Five cultivars were included in all trials and 7 more cultivars were included in 2 of the trials. 'Tivi' was the highest yielding cultivar in 2 years and in the second yield group in the third year. 'King Richard' and 'Verina' were in the high yield group for 3 years. 'Kazan', 'Kilima', and 'Albana' were in the high yield group in the 2 years in which they were evaluated.

Florida Agricultural Experiment Station Journal Series No. 9381. The contributions of seeds by the companies listed in Tables 3, 4, and 5, and containerized transplant production by Plants of Ruskin are gratefully acknowledged.

Proc. Fla. State Hort. Soc. 101: 1988.

Miniature-fruited pumpkin cultivars were relatively recent introductions and have rapidly become popular items for autumn decorating. Properly cured, they last for 8 months or more. All three cultivars producing miniature fruit were similar in appearance. In Manatee county, the somewhat better color and freedom from blemishes suggested that 'Munchkin' was superior under conditions of that trial; however, in a trial at Leesburg in 1988, fruit of 'Munchkin' varied from a very light orange to medium orange color.

Yields of medium- and large-sized Jack-o'-lantern pumpkin types in Manatee county and at Leesburg in 1986 of 150 to 200 cwt per acre were competitive with those produced in Illinois, a major pumpkin producing state (J. W. Courter, C. C. Doll, D. B. Meador, and H. J. Hopen, 1982, Yields of commercial food crops in Illinois, Ill. Coop. Ext. Serv. Hort. Facts, HM-5). Successful production at two disparate sites demonstrates that pumpkin cultivars with acceptable yield and quality can be grown in Florida for decorative and culinary purposes; however, the relatively low yields at Leesburg in 1987 reflect the devastating effect that aphid-transmitted viruses can have. For summer/fall cucurbit production, it is important to avoid planting in locations adjacent to spring cucurbit fields. Successful pumpkin production in Florida also is dependent on control of foliar diseases and pickleworm.

Literature Cited

1. Greene, G. L. 1974. Performance of pumpkin varieties at Quincy, Florida during 1971 and 1972. *Proc. Fla. State Hort. Soc.* 87:136-139.

Commercial production of leeks is small in Florida at the present time. However, it appears that there is potential for more production based on consumer interest. The Packer's recent profile of fresh produce consumers showed that of 30 specialty crops, 38% of the respondents had tried leeks, and another 48% indicated that they had heard of them (6).

Leeks are considered a major vegetable crop in Europe rather than a specialty crop as they are in the United States. For example, the leek crop in the United Kingdom in 1986-87 was about 65,000 tons from 6,627 acres. Per capita consumption of leeks was 2.2 lb. in the UK, 4.4 lb. in Holland, 15 lb. in France, and 22 lb. in Belgium (1).

Leeks, a long-season crop, are grown for their swollen, but not bulbed, leaf base. The edible portion is the shank which extends from the stem plate to the base of the first aerial leaf. A white shank is required for the market so blanching with soil or straw is required. Because of the necessity of blanching, the crop is probably better suited to open-ground culture than to mulched culture. Leeks are not as pungent as onions, and are prized for their delicate flavor. The crop can be direct-seeded, but stand establishment from transplants is probably more desirable. Leeks are very cold tolerant and a succession of plantings

should provide a continuous supply from late fall through mid-spring in Central Florida. Preliminary research reports on the trials reported herein have been issued (2, 3, 4).

The objective of these trials was to determine the applicability of the full-bed polyethylene mulch cultural system to leek production, and to identify superior cultivars.

Materials and Methods

Leek cultivar evaluations were conducted in the 1985-86, 1986-87 and 1987-88 winter seasons at the Gulf Coast Research and Education Center. General cultural details are shown in Table 1.

Seeds were individually planted in planter flats (0.8 x 0.8 x 1.75 inch cells) containing a commercial peat-lite mix. Transplants were grown in GCREC greenhouses the first 2 years and by a commercial plant grower in the third year.

EauGallie fine sand was prepared by incorporation of fertilizer prior to forming and pressing the beds that were 28 inches wide, 6 inches high, and spaced on 4.5 ft centers with seepage irrigation/drainage ditches every 7 beds. In the first 2 years, additional fertilizer was applied in a single band in the bed center before white polyethylene mulch was applied. In 1987-88 with unmulched culture 67% of the N, 40% of the P, and 57% of the K were supplied with coated fertilizer (Osmocote).

Leek transplants were set at 4 inch in-row spacing, and 2 rows on the bed were 15 inches apart. The 8 ft long plots had 48 plants and were replicated 3 times in a randomized complete block design. Weeds were controlled in row middles by cultivation and in the bed by hilling after a sidedress fertilizer application in the third year. Insecticides or fungicides were not applied in the 3 years of these trials since there was no indication of need.

The leeks were harvested by lifting the plants with a shovel. Measurements were taken of plant stand, the number and weight of leeks per plot, plant height, shank length, and shank diameter. Observations on leaf color, leaf arrangement and incidence of bulbing were recorded. The resulting data were subjected to analysis of variance and mean separation was by Duncan's multiple range test.

Results and Discussion

Temperature and rainfall during the experimental periods (Table 2) deviated only slightly from 33-year averages at the Gulf Coast Research and Education Center (5).

Table 1. Cultural regimes for leek cultivar evaluations.

Parameter	Season		
	1985-86	1986-87	1987-88
Seeding date	9 Sept.	24 Sept.	22 Sept.
Transplanting date	2 Dec.	4 Dec.	23 Nov.
Fertilizer (lb. N-P-K/acre)			
Incorporated	48-39-77	58-34-72	290-55-145
Surface bands	242-0-387	310-0-362	—
Sidedress	—	—	97-39-77
Polyethylene mulch	yes	yes	no
Harvest date(s)	7 Mar.	26 Mar.-3 Apr.	1 Mar.
Days from seeding	178	182	160
Days from transplanting	88	112	98

Table 2. Mean temperature and rainfall at the Gulf Coast Research and Education Center during the 1985-86, 1986-87, and 1987-88 leek growing seasons and 33-year averages.

Month (dates)	1985-86			Month (dates)	1986-87		
	Avg daily temp (°F)		Rainfall (inch)		Avg daily temp (°F)		Rainfall (inch)
	Max	Min			Max	Min	
Dec. (2-31)	69	47	1.44	Dec. (4-31)	77	58	2.08
Jan.	72	48	3.06	Jan.	71	50	3.65
Feb.	77	54	1.93	Feb.	74	54	2.62
Mar. (1-7)	69	49	0.37	Mar.	77	58	11.31
				Apr. (1-3)	69	43	0

Month (dates)	1985-86			Month	33-year average		
	Avg daily temp (°F)		Rainfall (inch)		Avg daily temp (°F)		Rainfall (inch)
	Max	Min			Max	Min	
Nov. (23-30)	80	60	0.88	Dec.	73	52	2.63
Dec.	75	54	0.76	Jan.	71	49	3.25
Jan.	70	50	3.13	Feb.	73	51	3.39
Feb.	74	49	2.34	Mar.	77	55	2.37

Temperatures in Feb. and Dec. 1986 and Dec. 1987 were 4F degrees above normal. Temperatures were below freezing on 2 nights each in Dec. 1985 (27 and 29F) and Jan. 1986 (26 and 30F) without noticeable plant damage. The greatest deviation from normal rainfall occurred in Mar. 1987 when 7.64 inches fell in the last week of the month which disrupted harvest of the plots.

1985-86 trial. Leek yields ranged from 179 cwt for 'HMX 4970' to 252 cwt for 'Tivi' per acre. Of the ten cultivars included in the trial, only yields of 'Tivi' were significantly higher than 'HMX 4970'. Most of the cultivars had intermediate yields that were not different from the highest or lowest yielding cultivars (Table 3).

Weight of individual leeks trimmed to 12 inches ranged from 5.0 oz for 'HMX 4970' to 7.2 oz for 'Electra'. 'Verina', 'Tivi' and 'Electra' produced trimmed leeks equal to or greater than 7 oz. As with yields, most cultivars produced intermediate-sized leeks.

Shank length is one of the most important characteristics in leeks. 'King Richard' produced 5 inch long shanks whereas those of 'Empire' and 'Acadia' were only 2.2 and 2.1 inches long, respectively. Intermediate length shanks of other cultivars ranged from 2.5 inches to 3.7 inches. Shank diameter was quite uniform among cultivars, ranging from 1.1 to 1.3 inches. As expected from the foregoing, 'King Richard' had the highest length:diameter shank ratio.

Most of the cultivars evaluated had typical blue leaves. Exceptions were 'Tivi' and 'King Richard' which had green leaves and 'Verina' which had yellow-green leaves. Under the conditions of this trial, the green-leaved cultivars generally tended to be higher yielding than the blue-leaved cultivars.

Leek leaves typically have an equitant arrangement, i.e. leaves are overlapping in 2 ranks. When fully expressed the leaves are flat in a fan-like arrangement. This should be an advantage to facilitate bunching. Some cultivars in this trial deviated from the fully equitant arrangement; 'Verina', 'Electra', and 'Carina' were medium flat whereas 'Catalina', 'Winter Giant', and 'Empire' were thick flat.

Table 3. Yield and horticultural characteristics of leek varieties, Gulf Coast Research and Education Center, Bradenton, FL. Fall-Winter 1985-86.

Cultivar	Source	Yield (cwt/acre)	Plant weight (oz) ^z	Plant stand (%)	Shank			Leaf color	Leaf arrangement ^y	Bulbing ^x (%)
					Length (inch)	Diameter (inch)	Ratio (L/D)			
Tivi	Harris Moran	252 a ^w	7.0 a	99 a	3.7 ± 0.7	1.2 ± 0.2	3.2 ± 0.7	Green	Flat	20
Verina	Sluis & Groot	232 ab	7.1 a	90 b	3.3 ± 0.6	1.3 ± 0.2	2.6 ± 0.8	Yellow-Green	Medium-flat	0
Electra	Harris Moran	230 ab	7.2 a	88 b	2.5 ± 0.4	1.2 ± 0.2	2.2 ± 0.4	Blue	Medium-flat	70
King Richard	Harris Moran	232 ab	6.5 ab	97 ab	5.0 ± 0.4	1.2 ± 0.1	4.2 ± 0.3	Green	Flat	0
Catalina	Sluis & Groot	224 ab	6.2 ab	99 a	2.7 ± 0.3	1.2 ± 0.2	2.3 ± 0.6	Blue	Thick-flat	70
Winter Giant	Tozer	220 ab	6.4 ab	93 ab	3.1 ± 0.5	1.2 ± 0.2	2.5 ± 0.7	Blue	Thick-flat	30
Acadia	Royal Sluis	195 ab	5.5 ab	98 ab	2.1 ± 0.3	1.1 ± 0.1	2.0 ± 0.5	Blue	Flat	30
Empire	Clause	192 ab	6.1 ab	88 b	2.2 ± 0.4	1.2 ± 0.2	1.8 ± 0.8	Blue	Thick-flat	30
Carina	Sluis & Groot	186 ab	5.7 ab	90 b	2.7 ± 0.4	1.1 ± 0.2	2.4 ± 0.7	Blue	Medium-flat	50
HMX 4970	Harris Moran	179 b	5.0 b	98 ab	2.9 ± 0.5	1.1 ± 0.1	2.7 ± 0.5	Blue	Flat	10

^zTrimmed to 12 inches.

^yFlat indicated fully equitant arrangement, medium-flat and thick flat indicated degrees of whorl arrangement.

^xObserved deviation from parallel shank in 10 plants.

^wMean separation in columns by Duncan's multiple range test, 5% level.

Observations were made on the tendency of these cultivars to bulb. Any deviations from a parallel shank were noted, however slight. In most cultivars, there was a 1/16 to 1/8 inch expansion just above the stem plate. Only 'Verina' and 'King Richard' showed no expansion whereas 70% of the 'Electra' and 'Catalina' plants were expanded at the stem plate. It should be stressed that all of these leeks would be acceptable on the market, and would not be discriminated against on the basis of bulbing.

Leeks are a long-season crop. In this trial 84 days were required from seeding to transplant and 94 days elapsed between transplanting and harvest. Production time might be somewhat shorter for fall and spring than for mid-winter (Table 1).

1986-87 trial. Leek yields ranged from 328 cwt for 'Carina' to 539 cwt per acre for 'Varna' (Table 4). Yields of 'Kazan', '8240', 'Albana', 'Kilima', 'Otiná', 'King Richard', and 'Verina' were not statistically different from those of 'Varna', the highest yielding cultivar. All of the other cultivars produced yields that were not significantly different from 'Carina' the lowest yielding cultivar.

Weight of individual leeks ranged from 9.4 oz for 'Carina' to 14.9 oz for 'Varna'. Since there was no difference among the cultivars in plant stand, total yield was related directly to individual plant weight.

Plant height, measured from the stem plate to the tip of the longest leaf, ranged from 33.9 inches for 'Electra' to 52.3 inches for 'Varna'.

Table 4. Yield and horticultural characteristics of leek varieties, Gulf Coast Research and Education Center, Bradenton, FL. Fall-Winter 1986-87.

Cultivar	Source	Yield (cwt/acre)	Plant weight (oz) ^z	Plant height (inch)	Plant stand (%)	Shank			Leaf color	Leaf arrangement ^y	Bulbing ^x
						Length (inch)	Diameter (inch)	Ratio L/D			
Varna	Nichols	539 a ^w	14.9 a	52.3 a	100 a	10.5 ± 1.6	1.3 ± 0.1	8.1 ± 1.6	Green	Medium-flat	None
Kazan	Nunhems	503 ab	14.1 ab	41.3 b-d	98 a	5.1 ± 0.4	1.3 ± 0.3	4.1 ± 0.9	Green	Medium-flat	None
8240	Tozer	482 a-c	13.4 a-c	36.1 de	99 a	6.5 ± 0.5	1.3 ± 0.1	5.2 ± 0.5	Green	Medium-flat	Slight
Albana	Nunhems	449 a-d	12.7 a-d	38.1 c-e	98 a	4.9 ± 1.0	1.5 ± 0.2	3.2 ± 0.4	Blue-green	Flat	None
Kilima ^v	Royal Sluis	443 a-d	12.3 a-c	44.6 b	100 a	5.2 ± 0.7	1.3 ± 0.2	4.0 ± 0.7	Blue-green	Flat	None
Otiná	Northrup King	442 a-e	12.2 a-e	38.1 c-e	100 a	4.7 ± 1.4	1.2 ± 0.2	4.2 ± 0.9	Blue-green	Medium-flat	None
King Richard	Daehnfeldt	440 a-f	12.2 a-e	43.1 bc	99 a	7.7 ± 1.4	1.2 ± 0.2	6.2 ± 1.2	Green	Flat	None
Verina	Northrup King	431 a-f	12.3 a-e	40.9 b-d	97 a	4.5 ± 0.6	1.3 ± 0.2	3.4 ± 0.5	Blue-green	Thick-flat	None
Kilima ^u	Royal Sluis	431 a-f	11.9 a-e	39.9 b-e	99 a	6.3 ± 0.9	1.2 ± 0.1	5.1 ± 0.7	Green	Flat	Excessive
Longina	Northrup King	424 b-f	11.9 a-e	40.1 b-e	98 a	4.7 ± 1.1	1.4 ± 0.2	3.5 ± 0.9	Blue-green	Flat	None
HMX 5972	Clause	416 b-f	11.8 a-e	39.5 b-e	97 a	5.6 ± 0.8	1.2 ± 0.1	4.5 ± 0.6	Green	Flat	Very slight
Argenta	Royal Sluis	415 b-f	12.1 a-e	36.7 de	95 a	4.5 ± 0.9	1.4 ± 0.2	3.3 ± 0.7	Green	Medium-flat	None
Carina	Northrup King	408 b-f	11.4 b-e	37.7 c-e	99 a	3.7 ± 0.2	1.3 ± 0.2	3.0 ± 0.8	Green-blue	Flat	Slight
Tivi	Harris Moran	406 b-f	11.6 a-e	41.4 b-d	96 a	5.4 ± 1.2	1.2 ± 0.1	4.5 ± 1.0	Blue-green	Flat	Slight
Conqueror	Clause	397 b-f	11.2 b-e	35.1 de	98 a	3.2 ± 0.5	1.2 ± 0.2	2.8 ± 0.7	Green-blue	Thick-flat	Some
Tilina	Sluis & Groot	396 c-f	11.3 b-e	40.8 b-d	97 a	5.1 ± 0.6	1.4 ± 0.3	3.8 ± 0.8	Green-blue	Flat	None
Electra	Harris Moran	390 c-f	11.4 b-e	33.9 e	94 a	3.6 ± 0.7	1.3 ± 0.2	2.7 ± 0.7	Blue-green	Medium-flat	Some
HMX 4970	Tezier	387 c-f	11.0 b-e	36.7 de	97 a	3.7 ± 0.4	1.0 ± 0.2	3.6 ± 0.5	Blue-green	Flat	Slight
Catalina	Sluis & Groot	381 c-f	10.9 b-e	36.9 c-e	97 a	3.3 ± 0.6	1.4 ± 0.2	2.5 ± 0.6	Blue-green	Medium-flat	None
Helvetia	Royal Sluis	374 c-f	10.6 c-e	36.4 de	97 a	5.1 ± 0.8	1.2 ± 0.2	4.3 ± 0.7	Green	Flat	Some
Armor	Tezier	357 d-f	10.6 c-e	36.2 de	93 a	4.1 ± 0.6	1.2 ± 0.2	3.5 ± 0.9	Blue	Medium-flat	None
Bleu de Solise	Tezier	330 ef	9.1 de	37.4 c-e	100 a	3.6 ± 0.7	1.3 ± 0.1	3.2 ± 0.6	Blue-green	Flat	Some
Carina	Sluis & Groot	328 f	9.4 e	37.0 c-e	96 a	3.9 ± 0.7	1.2 ± 0.1	2.5 ± 0.6	Blue-green	Medium-flat	Slight

^zWeight of entire, untrimmed plant.

^yFlat indicates fully equitant arrangement, medium flat and thick flat indicate degrees of whorl arrangement.

^xDeviation from parallel shank.

^wMean separation in columns by Duncan's multiple range test, 5% level.

^vLot 17007.

^uLot 4-1273.

'Varna' produced 10.5 inch long shanks, which may be too long for many markets. Most cultivars produced shanks that were in the highly acceptable range of 3.5 to 6 inches long. The shortest shanks were produced by 'Conqueror' at 3.2 inches. Shank diameter did not vary greatly among the cultivars, and ranged from 1.0 to 1.5 inches. Most cultivars had 1.2 to 1.4 inch diameter shanks. 'Varna' had the highest shank length:diameter ratio.

Some cultivars in this trial deviated from the fully equitant arrangement: 'Varna', 'Kazan', '8240', 'Otina', 'Argenta', 'Electra', 'Catalina', 'Armor', and 'Carina' were medium flat whereas 'Verina' and 'Conqueror' were thick flat. Only 'Kilima' showed a marked tendency to bulb; it is uncertain if this would have affected marketability of the leeks. In this trial, 70 days were required from seeding to transplant and 112 days elapsed between transplanting and initial harvest (Table 1).

1987-88 trial. Leek yields ranged from 312 cwt for 'Conqueror' to 416 cwt per acre for 'Tivi' (Table 5). Yields of 'King Richard', 'Kilima', 'Kazan', 'Albana', 'Orato', 'Catalina', 'Verina', 'Electra', and 'Unique' were not significantly different from those of 'Tivi', the highest yielding cultivar. Intermediate yields were obtained from 'Longina' and 'Alaska', whereas, 'Splendid' and 'Siegfried Durabel' yields were not statistically different from 'Conqueror', the lowest yielding cultivar.

Weight of individual leeks ranged from 9.0 oz for 'Conqueror' to 11.7 oz for 'Tivi'. Since there was no difference among cultivars in plant stand, total yield was related directly to plant weight.

Plant height, measured from the stem plate to the tip of the longest leaf, ranged from 34.4 inches for 'Conqueror' to 40.3 inches for 'Tivi'.

Shank length was short to medium, since cultivars having very long shanks were not included in this trial. Accordingly, shank length ranged from 2.5 inches for 'Kazan' to 3.3 inches for 'King Richard'. About half of the cultivars

were in the same statistical grouping as 'Kazan', whereas the other half were in the 'King Richard' group. There was little variation in shank diameter among the cultivars in this trial, only 0.2 inches separated the smallest and greatest diameter. With these small differences in shank length and diameter measurements, there was only a range in the shank length:diameter ratio from 1.8 for 'Kazan' to 2.5 for 'King Richard'.

Leaf color ranged from green through green-blue and blue-green to blue. As in previous tests there was a tendency for green-leaved varieties to be high yielding.

Cultivars in this trial that were flat were 'King Richard', 'Unique', 'Alaska', and 'Siegfried Durabel'. A slight indication of bulbing was observed in 'Kilima', 'Unique', and 'Siegfried Durabel' whereas moderate bulbing was noted in 'Catalina', 'Alaska' and 'Conqueror'. It is not thought that bulbing observed in this trial would have affected marketability.

In this trial, 62 days were required from seeding to transplant and 98 days elapsed between transplanting and initial harvest (Table 1). During 3 years of leek evaluations, 28 different cultivars were included in the trials. The general procedure that was followed was to advance the best cultivars to the next trial, although this was not always possible because seed was not always available. New cultivars were added to the trials in the latter 2 years. Accordingly, 5 cultivars were included in 3 trials, 7 cultivars were in 2 trials, and 16 cultivars were observed only once.

Shank length and shank length:diameter ratios were the only parameters that were statistically significant in cultivars evaluated for 3 years. 'King Richard' had longer shanks than 'Verina', 'Electra', or 'Catalina'.

Evaluations of 10 leek cultivars were conducted in the 1985-86 season, 23 cultivars were included in the 1986-87 trial, and 15 cultivars were evaluated in the 1987-88 trial. Some of the differences and similarities among these trials are addressed in the following discussion.

Table 5. Yield and horticultural characteristics of leek varieties, Gulf Coast Research and Education Center, Bradenton, FL. Fall-Winter 1987-88.

Cultivar	Source	Yield (cwt/acre)	Plant weight (oz) ²	Plant height (inch)	Plant stand (%)	Shank			Leaf color	Lear arrangement ^y	Bulbing ^x
						Length (inch)	Diameter (inch)	Ratio L/D			
Tivi	Harris Moran	416 a ^w	11.7 a	40.3 a	98 a	3.2 ab	1.4 ab	2.3 ab	Green	Thick-flat	None
King Richard	Daehnfeldt	413 ab	11.4 ab	40.2 a	100 a	3.3 a	1.3 ab	2.5 a	Green	Flat	None
Kilima	Royal Sluis	405 ab	11.2 a-c	39.8 ab	99 a	3.2 ab	1.3 ab	2.4 a	Green	Medium-flat	Slight
Kazan	Nunhems	400 a-c	11.1 a-c	36.9 c-f	99 a	2.5 d	1.4 a	1.8 c	Blue-green	Thick-flat	None
Albana	Nunhems	399 a-c	11.1 a-d	36.2 d-f	99 a	2.7 b-d	1.4 ab	2.0 bc	Blue-green	Medium-flat	None
Orato	Ohlsens Enke	393 a-c	11.1 a-d	38.6 a-c	98 a	3.0 a-d	1.3 ab	2.2 ab	Green-blue	Medium-flat	None
Catalina	Northrup King	388 a-c	10.9 a-d	36.7 c-f	98 a	2.6 cd	1.3 ab	1.9 bc	Blue-green	Thick-flat	Moderate
Verina	Northrup King	382 a-d	10.6 a-d	35.6 ef	99 a	2.7 b-d	1.4 ab	1.9 bc	Green-blue	Medium-flat	None
Electra	Harris Moran	381 a-d	10.5 a-d	35.1 ef	100 a	2.7 b-d	1.4 ab	1.9 bc	Blue	Thick-flat	None
Unique	Stokes	380 a-d	10.6 a-d	39.6 ab	99 a	2.8 a-d	1.3 ab	2.1 a-c	Green	Flat	Slight
Longina	Northrup King	371 b-d	10.2 b-e	37.4 b-e	100 a	3.0 a-d	1.4 a	2.1 a-c	Green-blue	Thick-flat	None
Alaska	Stokes	358 c-e	10.0 c-e	35.2 ef	99 a	2.8 a-d	1.3 ab	2.2 ab	Blue	Flat	Moderate
Splendid	Stokes	345 d-f	9.8 de	38.4 a-d	97 a	3.1 a-c	1.3 ab	2.5 a	Green-blue	Medium-flat	None
Siegfried											
Durabel	Ohlsens Enke	330 ef	9.1 e	34.8 f	99 a	3.0 a-d	1.2 b	2.5 a	Blue	Flat	Slight
Conqueror	Harris Moran	312 f	9.0 e	34.4 f	95 a	2.6 cd	1.2 b	2.1 a-c	Green-blue	Medium-flat	Moderate

²Weight of entire, untrimmed plant.

^yFlat indicates fully equitant arrangement, medium flat and thick flat indicate degrees of whorl arrangement.

^xDeviation from parallel shank.

^wMean separation in columns by Duncan's multiple range test, 5% level.

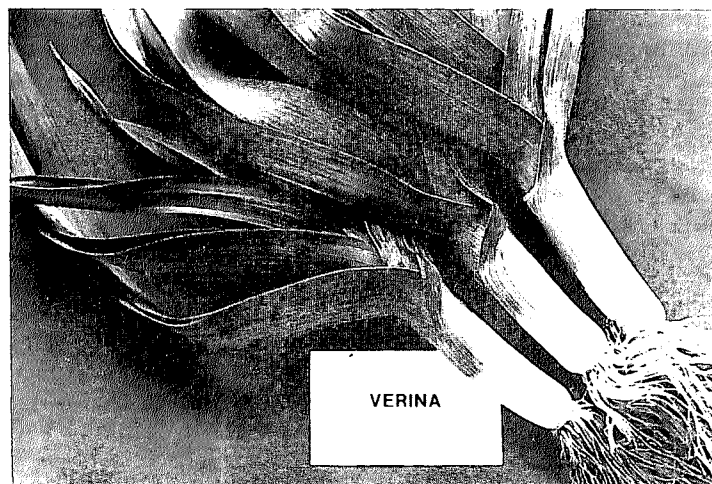
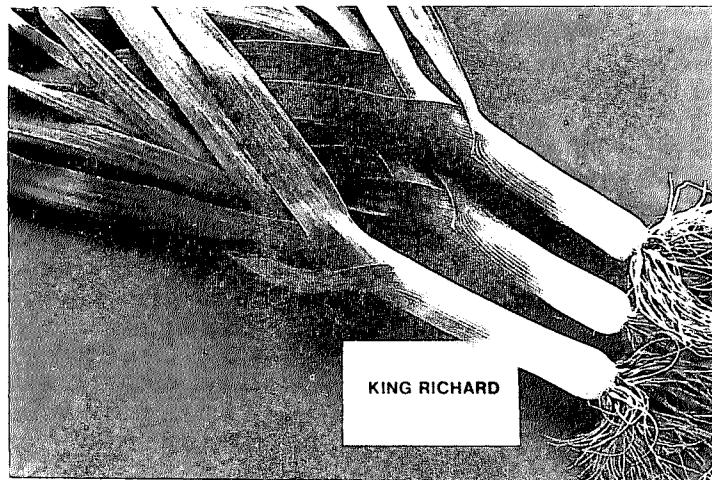
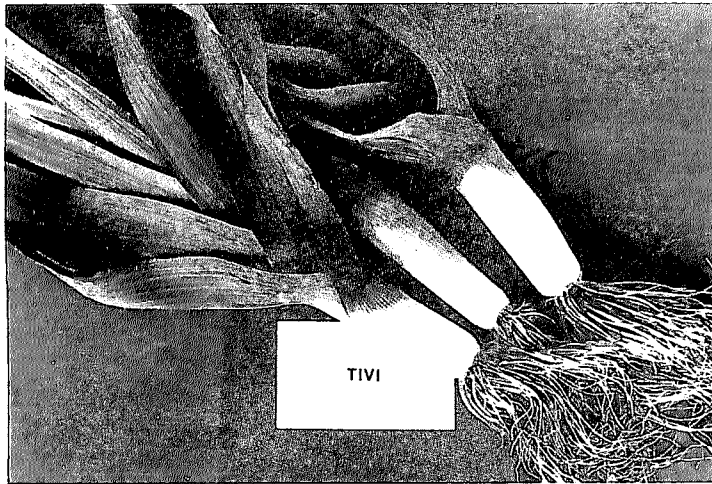


Fig. 1. Outstanding leek cultivars in trials at the Gulf Coast Research & Education Center: 'Tivi' (top), 'King Richard' (center), and 'Verina' (bottom).

Yields and plant weight obtained in 1986-87 and 1987-88 were about twice those reported in 1985-86. Two factors contributing to this apparent difference were: a) the production period was longer in 1986-87 allowing the leek plants to attain greater size and b) leeks were not trimmed to 12 inches as they were in 1985-86. Accordingly, the yield differences are not as great as casual examination of the data would suggest. Shank length and diameter were greater in 1986-87 than in 1985-86 and 1987-88 probably related to length of the production period.

There was some variation within cultivars in leaf color and arrangement between years suggesting that these characteristics may be modified by environmental variation. For example 'Verina' had yellow-green, medium-flat leaves in 1985-86 whereas leaf color was blue-green and arrangement was thick-flat in 1986-87, and green-blue and medium flat in 1987-88.

Although all of the same cultivars were not included in each trial, 'Tivi' (Fig. 1) was the highest yielding variety in 2 years and in the second yield group in the third year, 'King Richard' and 'Verina' (Fig. 1) were in the highest yield groups in each trial. 'Electra' was in the highest yield group in 1985-86 and 1987-88, and in the third highest yield group in 1986-87.

One of the initial objectives of these trials was to determine the applicability of the full-bed, polyethylene mulch cultural system to leek production. Plant growth was outstanding with polyethylene mulch in the first 2 years of this study. However, because of the necessity of blanching the shanks for high market acceptance, unmulched culture was used in the third year with equally satisfactory results and acceptable blanching. The fertilizer program was altered to include slow release and soluble fertilizer incorporated in the bed and 1 sidedressing. Additional sidedressing may be necessary in years of high rainfall.

Herbicides for weed management in unmulched culture are currently being evaluated.

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