



Evaluation of Performance & Yield of Clay Soil-Tolerant Carrot Varieties for North Louisiana

Marcie Mathews, Research Associate, LSU AgCenter Northeast Research Station, St. Joseph, LA.

Introduction:

Carrots need deep loose soil to grow into to achieve full tapered roots. In heavier, compacted soils, the roots become twisted & misshapen. Some carrot varieties & hybrids are marketed as performing well or even superior in clay soils. 3 heavy soil tolerant varieties were selected (2 hybrids and 1 standard variety) to determine their productivity in a North Louisiana silty clay loam soil.

Objective:

Determine which clay soil tolerant carrot varieties perform best in North Louisiana.

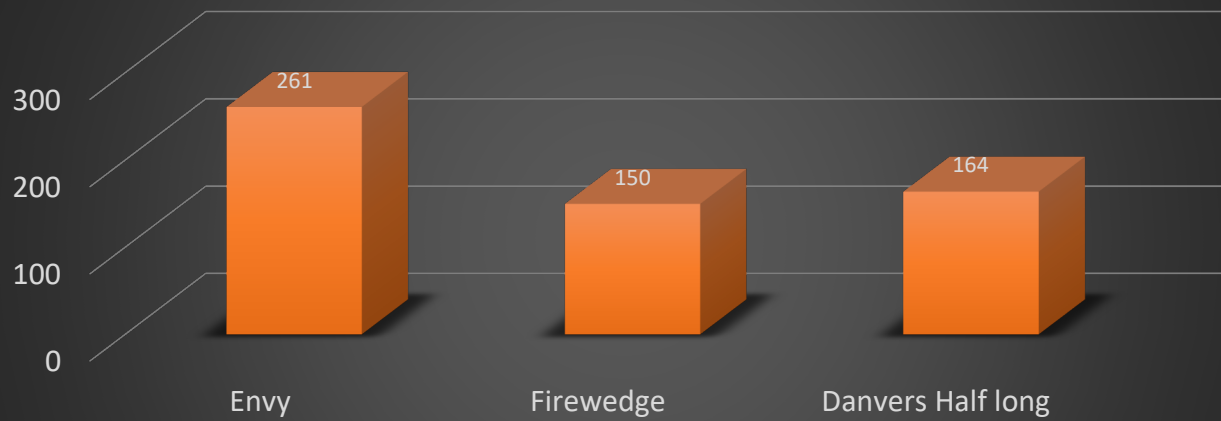
Materials & Methods:

The trial area was established in the Sheep Pasture Cut at the Northeast Research Station in St. Joseph, La. Carrot seed was ordered from Gurney's and planted 1/8" deep dual row on tilled wide beds (6.33' x 30'). The site had silty clay loam soil with 43% clay content. 12-5-7 fertilizer was incorporated at planting. After planting, Satellite Hydrocap (3.8 EC) was applied pre-emergence at a rate of 2 pt/A to control weeds. Once emerged, carrot stands were thinned to approx. 1-2" apart. Plots were side dressed 40 DAP and row middles laid by with Roundup Powermax (5.5 EC) at 22 oz/A. Roots were harvested on 6-11-21 (91 DAP). Roots were then counted, weighed, and graded by marketability, canner/cull types, rot, and irregularity (misshapen, split, twisted, deformed). Data was analyzed and put into chart and table form to illustrate how each variety performed by yield and marketability. This data was then broken down by 1.) grade percentage of the total number of roots for that variety and 2.) grade percentage of the total yield in pounds for that variety.

Variety:	Total # of Roots	Total Yield (lb/30')	% of TOTAL ROOTS				% OF TOTAL YIELD			
			Marketable	Canners	Rotten	Irregular	Marketable	Canners	Rotten	Irregular
Envy	261	17	40.0	52.4	1.9	5.7	56.4	33	2.3	8.3
Danvers Half long	150	11	54	30	9.3	6.6	54.3	21.5	12.6	11.6
Firewedge	164	15	42.6	45.1	3.6	8.5	53	31.4	3.1	12.5

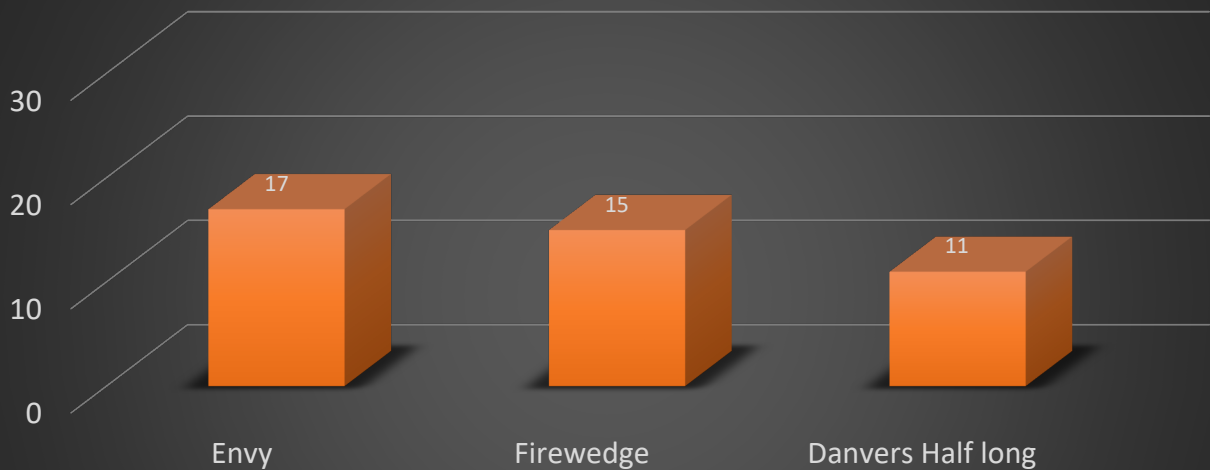
*Numbers in red signify the highest-ranking variety in that category.

Total # of Roots



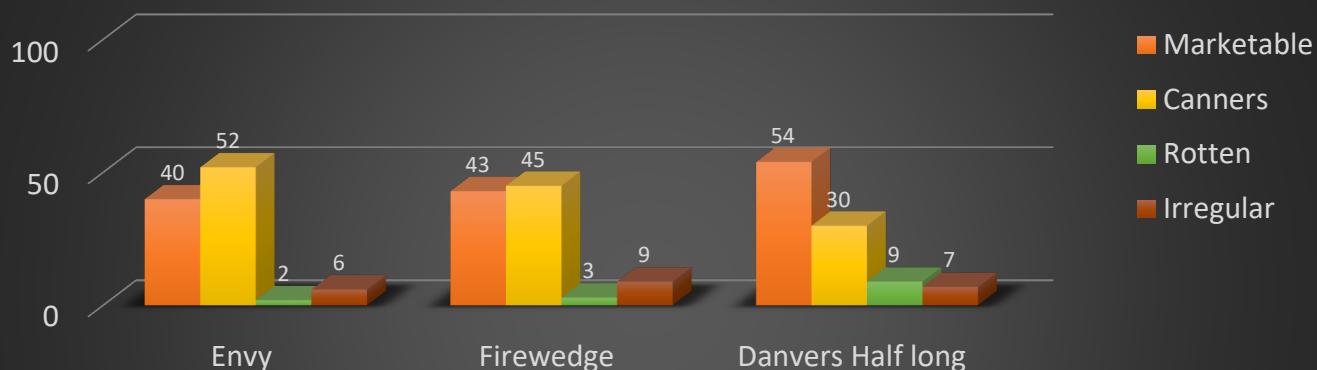
- Envy produced the most roots at 261
- Danvers Half Long & Firewedge produced comparable numbers of roots at 164 & 150, respectively.

Total Yield (lb/30')



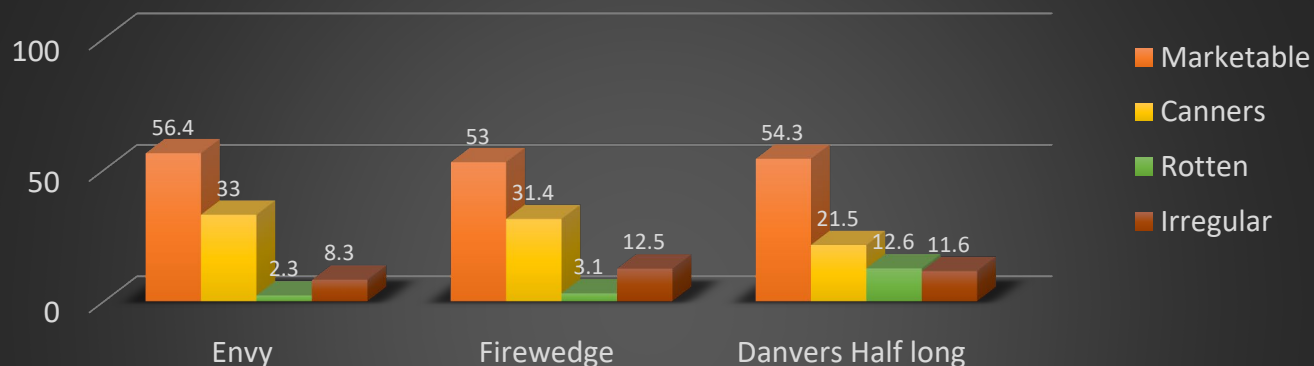
- Envy produced the most lbs. of roots at 17, followed closely by Firewedge at 15.
- DANvers Half Long produced the least total yield at 11 lbs, although all 3 varieties were comparable.

% of Total Roots



- Danvers Half long produced the most marketable number of roots (54%), followed by Firewedge (45%) and Envy (40%).
- Danvers Half long produced the least number of canners (30%), followed by Firewedge (45%) and Envy (52%).
- Envy suffered the least to rot (2%) followed by Firewedge (3%) and Danvers Half long (9%).
- Envy produced the least number of irregular roots (6%) followed by Danvers Half long (7%) and Firewedge (9%).

% of Total Yield (lb/A)



- Envy had the highest % of marketable pounds of yield (56.4%) followed by Danvers Half Long (54.3%) and Firewedge (53%).
- Danvers Half long had the least number of canners in pounds of yield (21.5%) followed by Firewedge (31.4%) and Envy (33%).
- Envy had the least pounds of rotten roots at 2.3% followed by Firewedge at 3.1% and Danvers half long at 12.6%.
- Envy had the least pounds of irregular shaped roots at 8.3% followed by Danvers Half Long at 11.6% and Firewedge at 12.5%.

Conclusion:

When considering number of roots produced, Danvers Half long was the most outstanding among the 3 varieties, with the highest % of marketable roots (54%), the least number of canners (30%), and very comparable percentages of rotten and irregular roots (9 & 7%) as compared to the other 2 varieties (Firewedge at 3 & 9% and Envy at 2 & 6%).

When considering sheer poundage, Envy exceeded the other 2 varieties in 3 of the 4 categories (Marketable, rotten, & irregular), with a comparable amount of canner yield to Firewedge (33 vs. 31.4). Again, Danvers Half long had the least number of canners with 21.5% of the total yield.

Based on the results of this small trial, Envy carrots had the highest marks in all 10 categories (7/10) followed by Danvers Half Long (3/10) (see chart). Firewedge, however, should not be discredited. It was a very comparable competitor that fell 2nd in all categories except % of irregular roots, % of marketable yield, and % of irregular yield. (See chart) Firewedge was also a very attractive carrot. (See pictures).

Danvers 126, Red Core Chantenay & Scarlet Nantes were also planted but not part of the test. Seed was acquired from a retail store and planted to see how well seed from this source would perform as compared to a commercial supplier. More research is needed, but all seed emerged and produced. Red Core Chantenay and Scarlet Nantes both produced very attractive, marketable roots.

More research is needed to determine the long-term outcome of growing modern carrot varieties as compared to standard varieties in North Louisiana. A variety trial will be repeated next spring and replicated for more accurate data results.

Marcie Mathews

Research Associate, Northeast Research Station





