



## Evaluation of Eight Table Beet Varieties for Stand, Disease Resistance, and Cultural Characteristics

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Table beets (*Beta vulgaris*) are one of the most popular food items sold at local farmer's markets throughout the nation. Containing high levels of Vitamin C, iron and magnesium, table beets are savored for both their sweet roots and their attractive yet flavorful tops. In many areas, crop stand becomes an issue due to the susceptibility of young seedlings to damping-off, caused by *Pythium spp.* and *Rhizoctonia*, two genera of fungal pathogens that are ubiquitous in distribution. Foliarly, *Cercospora* leaf spot, incited by the fungal pathogen *Cercospora beticola* Fuckel, is widely regarded as the most important disease of beets worldwide. Favored by warm, humid conditions, *Cercospora* leaf spot is particularly a problem in the southeast U.S. While cultural characteristics and yield are typically the major factors in selecting which variety to plant, disease resistance should also be considered, particularly if grown for organic production. Field variety trials were conducted during 2012 and 2013 to assess the influence of seedling diseases on crop stand, early vigor and the susceptibility of beet foliage to *Cercospora* leaf spot. The experiments evaluated eight commercial beet varieties in a randomized complete block design with four replications. Stand was evaluated on a percentage basis by visually estimating the percentage of row occupied by the crop for each planted row. Vigor was assessed on a zero to five scale, with 0 = no vigor (dead),

and 5 = high vigor. *Cercospora* leaf spot susceptibility was also assessed on a zero to five scale, with 0 = no disease (immune), 1 = highly resistant, 2 = resistant, 3 = moderately susceptible, 4 = susceptible, and 5 = highly susceptible. Varieties tested ranged significantly in root shape, top, and root color (Table 1). Red Ace, Kestrel and Cyindra provided the best stands with Red Ace and Kestrel producing the best early vigor. Varieties differed significantly in terms of susceptibility to *Cercospora* leaf spot. The golden globe variety Touchstone Gold proved to be very resistant, with the maroon-leafed variety Bull's Blood also exhibiting excellent leaf spot resistance. All of the other varieties demonstrated some degree of leaf spot susceptibility with Detroit Dark Red and Ruby Queen being the most susceptible. Using a seedling drench with the fungicide Uniform at a rate of 0.34 fl oz/1000 ft of row significantly improved both stand establishment and plant vigor across all varieties. It is hoped that this study will provide growers with information useful in selecting varieties that best suit their needs. For organic growers who may have limited tools to manage *Cercospora*, Touchstone Gold and Bull's Blood offer good leaf spot resistance, reducing the need to spray. For conventional growers interested in good stands, Red Ace and Kestrel demonstrated much promise.

Table 1. Early Vigor and *Cercospora* Rating for Eight Table Beet Varieties Evaluated in 2012 and 2013.

Beet Variety	Root Color	Root Shape	Top Description	% Stand	Early Vigor	Cerospora Rating	
						2012	2013
Red Ace	Dark red	Globe	Glossy green	71.3a	4.2a	3.9b	3.1c
Kestrel	Dark red	Globe	Glossy green	72.8	4.1a	3.4cd	3.3c
Touchstone Gold	Golden	Globe	Light green with yellow ribs	36.3	2.8bcd	0.5f	1.0e
Bulls Blood	Maroon	Flattened Globe	Dark Maroon	35.6	2.6cd	1.2e	2.0d
Ruby Queen	Dark red	Globe	Glossy green	42.5	2.9bc	4.6a	4.4ab
Early Wonder	Ruby red	Flattened Globe	Glossy green	35.6	2.3de	3.0d	3.0c
Cyindra	Dark red	Cylindrical	Glossy green	71.3	3.2b	3.8bc	4.6a
Detroit Dark Red	Dark red	Globe	Glossy green	35.0	2.0e	5.0a	4.0b

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