Sweetpotato early harvest study, 2014

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Several sweetpotato cultivars perform well in New England, and with proper storage and post-harvest handling, sweetpotatoes can maintain excellent postharvest quality longer than most other storage crops. For more information on sweetpotato growing and post-harvest management, please see our report "Varieties, cultural practices, and post-harvest management of sweetpotatoes in New England".

In NH, sweetpotato is typically harvested in late September or early October. To ensure good eating quality, roots must be stored for a brief period (a good guideline is 3 weeks) prior to consumption. During this time, starches in the roots convert to sugars, which can be measured by an increase on soluble solids (brix). Some growers are interested in selling sweetpotatoes in early fall markets (mid- to late-September), which would require harvest 3 weeks prior to the intended sales date. In direct response to questions posed by growers, we designed an experiment to evaluate yields and soluble solids of early-harvested roots compared to roots harvested in late fall.

Our objective was to compare yields and changes in soluble solids and dry matter of 'Covington' sweetpotato harvested at four different dates (21 August through 29 September).

What we did

'Covington' sweetpotato slips (Scott Farms, Lucama, NC) were planted on 13 June in Durham NH at the NH Agricultural Experiment Station's Woodman Farm. Slips were planted in a single row spaced 6 inches apart on raised beds covered with BioTelo biodegradable black plastic mulch. Before forming beds, fertilizer was broadcast according to soil test recommendations, adding 75 lbs/A of N and 200 lbs/A of K. We established four plots of 25 feet each. At each of four harvest dates (21 Aug, 4 Sept, 23 Sept and 29 Sept), we randomly selected and dug 3 plants from each plot, avoiding edge plants.

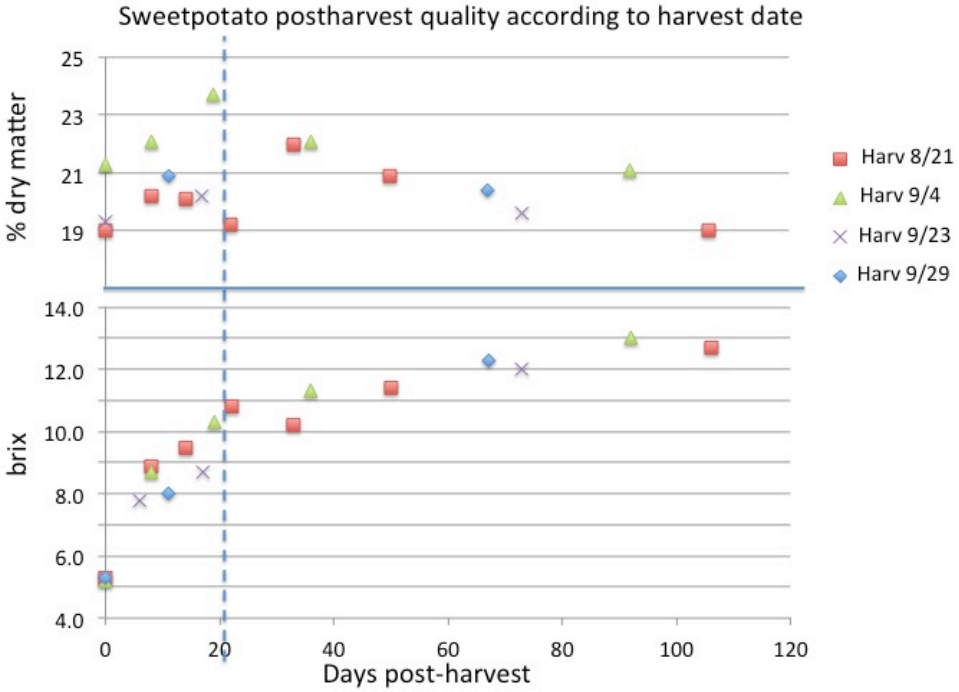
Data collected

We sorted roots into two classes: marketable (at least 1.5" diameter, no defects), and undersized (less than 1.5" diameter), and counted and weighed all roots. At each harvest date, roots were cured in a greenhouse heated to 60°F at night for one week. Roots were then moved into long-term storage at 55-60°F. At harvest and at several intervals afterwards, we took 4-8 roots from each plot, including and keeping track of both undersized and marketable roots, and took flesh samples to calculate % dry matter and brix.

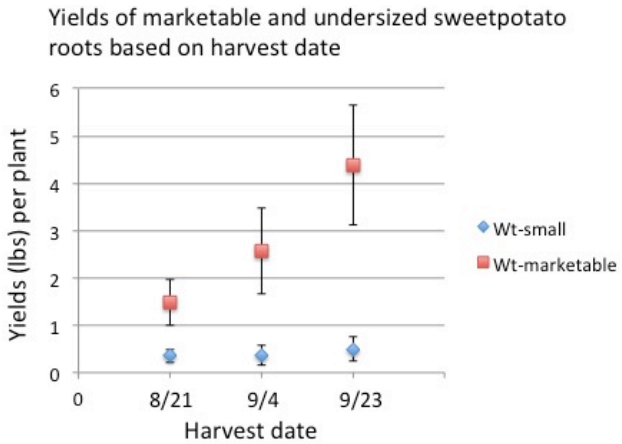
Results

1. The small (undersized) roots did not differ from the marketable roots in terms of soluble solids or dry matter, at any harvest date (data not shown). This is consistent with our anecdotal reports and observations that tiny roots are just as sweet as the large ones.

2. Harvest date did not affect post-harvest quality (either brix or % dry matter). Regardless of harvest date, brix was consistently around 5.0 at harvest, it increased dramatically to around 8.0 within a week, and exceeded 10.0 by 3 weeks post-harvest.



3. There is a significant yield penalty for early harvest. Marketable yield nearly tripled during the month between our first and third harvest (21 Aug – 23 Sept), from 1.5 to 4.3 lbs per plant.



Overall, we conclude that early harvested roots should have the same quality as late harvest roots, but that this practice is only desirable if the market advantages to selling early are appreciable, since a significant yield reduction can be expected.

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