

Sprouting Broccoli and Mini Cabbages for Early Spring High Tunnel Harvests

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Providing a diverse offering of vegetables for early spring CSA shares and markets can be a challenge. Offerings usually consists of leftover storage root crops, salad greens, and radishes. Due to their cold tolerance and quick growth, brassicas are promising crops for cool spring high tunnel environments. Last spring, we trialed two varieties of sprouting broccoli and four varieties of small cabbages at the Cornell Willsboro Research Farm to develop seeding date and variety recommendations for our region. We harvested fresh broccoli and tender cabbages in mid-May—excellent timing for the start up of farmers market season.

Background

Spring broccoli is commonly grown in England in the winter and includes green, purple, and white varieties. Rather than forming one large crown, sprouting broccoli produces a small crown and many lateral shoots. The small floret, stem, and attached leaves of the sprouts are all eaten, either steamed, roasted, boiled, or fresh. Some prefer to call sprouting broccoli “asparagus broccoli” because it can be prepared similarly to asparagus. Sprouting broccoli has a mild flavor, and stems are very tender. In our trial, we grew ‘Burgundy’ and ‘Montebello’ (Fig. 1) two varieties that do not need long exposure to cold to produce florets (unlike winter broccoli grown in Europe).

Our interest in miniature cabbages arose from consumer trends toward smaller vegetables. Small cabbages are easier for smaller households to prepare and store. In particular, some small varieties are especially well suited for fresh salads and have very tender, lettuce-like leaves. Fresh cabbage in May is arguably much better eating quality than cabbages that have been in storage since the previous fall. Tender cabbages are used in place of lettuce in Eastern European cuisines. In our trial, we grew ‘Tiara,’ ‘Katerina,’ ‘Caraflex,’ and ‘Omero’ (Fig. 2).

Methods

We seeded our broccoli and cabbages on Feb. 15 and Mar. 1, 2021 in 128-cell trays. A neighboring farm grew our seedlings for us in a heated propagation greenhouse until they were ready to transplant. We transplanted the seedlings into our unheated 30x90’ high tunnel on March 22. We used 80 lbs N/ac for broccoli and 20 lbs N/ac for the cabbages and applied K according to our soil test results. We grew both crops in 4’ wide beds each with two lines of drip tape, with 12”x12” spacing for the broccoli and 12”x6” spacing for the cabbage. We replicated the treatments (variety x planting dates) randomly in the high tunnel in 4’x3’ (broccoli) and 4’x2’ (cabbage) plots. The spring weather was unseasonably warm in Willsboro, and we used row covers at night only a few times when temperatures dropped below 32 as the plants were getting hardened off in the tunnel. Imported cabbage worms and voles were our major pests in the tunnel. We used DiPel and snap traps to manage these.

The sprouting broccoli was ready to harvest on May 21. We harvested the main crowns, and then harvested the sprouts 2-3 times per week until the plants began to bolt and quality declined. Harvest of the cabbage was more sporadic, with harvest beginning on May 26 and extending into June and July. We weighed the crop harvested from our plots, and measured the diameters and individual head weights of the cabbages.

Results

'Burgundy' and 'Montebello' were similar in terms of yield. While plants from both seeding dates were ready to harvest at the same time, the early-seeded (Feb. 15th) plots yielded significantly more broccoli. Extrapolated to a full bed length (4'x90'), our average yields from the early-seeded plots varieties were 125 lbs (Burgundy) and 131 lbs (Montebello). A grower could grow both varieties and sell them in mixed bunches or bags. The green and purple hues of these varieties look very attractive together. Nearly half of the total yield from our plots were from the "main" crowns, and most of the yield was harvested before June 1 (Fig. 3). These crowns could be sold 3-4 in a bunch, rubber banded together. Not all of the sprouts we harvested had long stems, so bagging these would likely be the best way to market them. No washing or leaf stripping would be needed for the broccoli. Growers could likely obtain a premium price for fresh broccoli in May, making this a potentially lucrative crop given its short timeframe.

For our cabbages, there were stronger varietal differences, but similarly to the broccoli, seeding date had little effect on harvest date. The highest yielding variety was 'Tiara,' with 0.99 lbs/sq ft (356 lbs per 4'x90' bed extrapolated; Fig. 4). Late-seeded Caraflex and Tiara, and both seedings of Katerina yielded similarly. We harvested significantly lower yields of 'Omero,' the only purple cabbage in our trial. Most plants failed to form heads that were larger than a baseball, and were still not ready to harvest by August 1st when we terminated the trial. Most cabbages were ~4" in diameter with outer leaves removed, although the heads looked more attractive with loose outer leaves intact.

Conclusions

Being the first to market with cabbage and broccoli presents a marketing opportunity for growers interesting in diversifying their product offerings. The broccoli and miniature cabbages we grew all had excellent eating quality, but may require a small amount of consumer education in preparation and use. All varieties were easy to prepare, and all harvested parts are tender and edible. From the growers' perspective, quick spring brassicas may fit well into existing rotations. Broccoli and cabbage could fill a niche in crop rotations, planted after winter spinach is removed in late March and harvested before a late cucumber or other warm season crop is planted in July. These specialty crops could fit nicely into existing rotations on farms while offering a novelty to farmers market customers, CSA members, or restaurants highlighting local produce.



Fig. 1. Lateral shoots (“sprouts”) from broccoli varieties (left) and main crowns of ‘Burgundy’ (right)

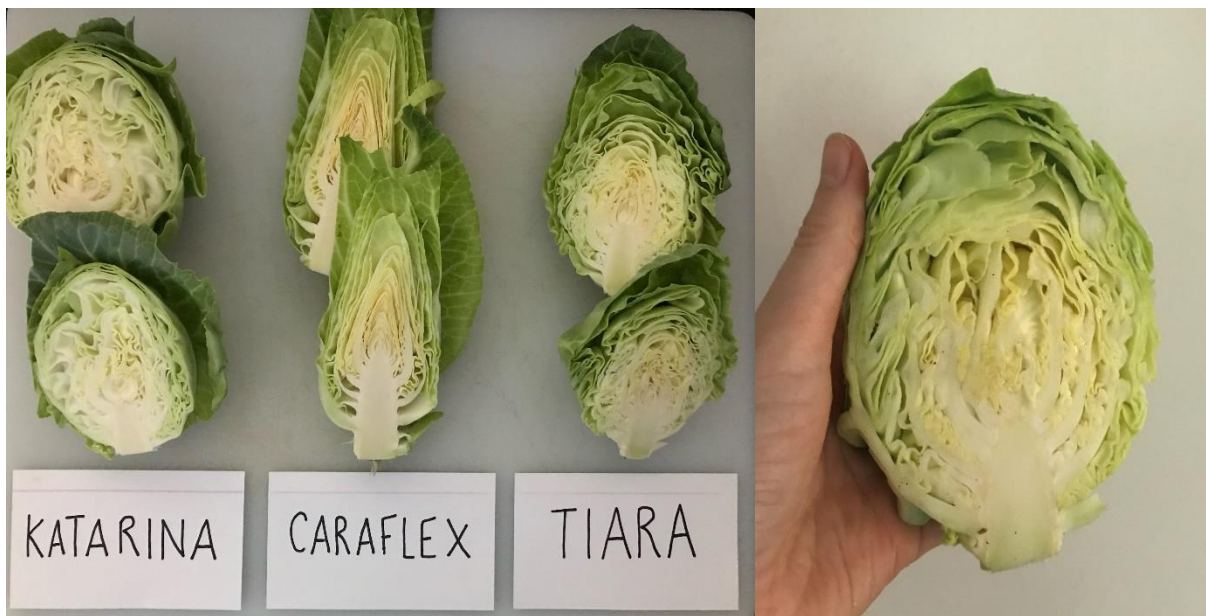


Fig. 2. Miniature cabbages harvested in June at a young stage. The purple variety ‘Omero,’ not pictured, produced few marketable heads.

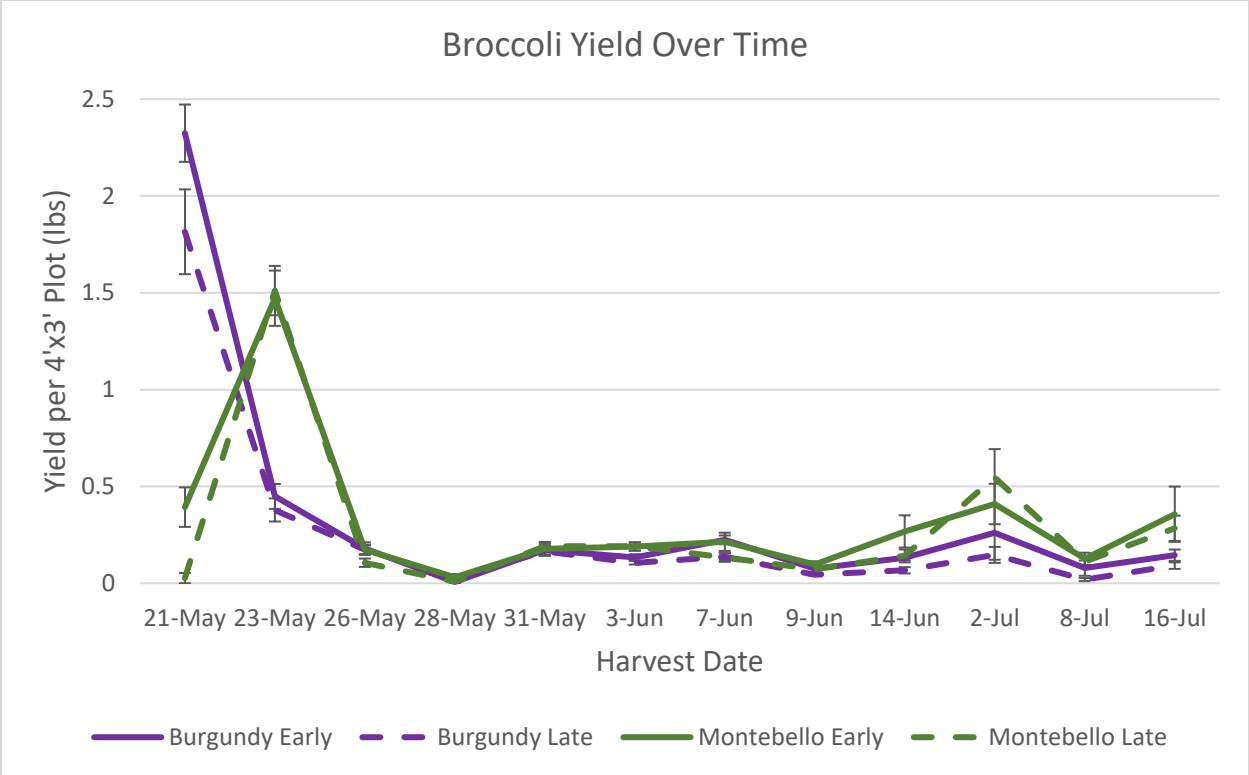


Fig. 3. Sprouting broccoli harvest over time from experimental plots

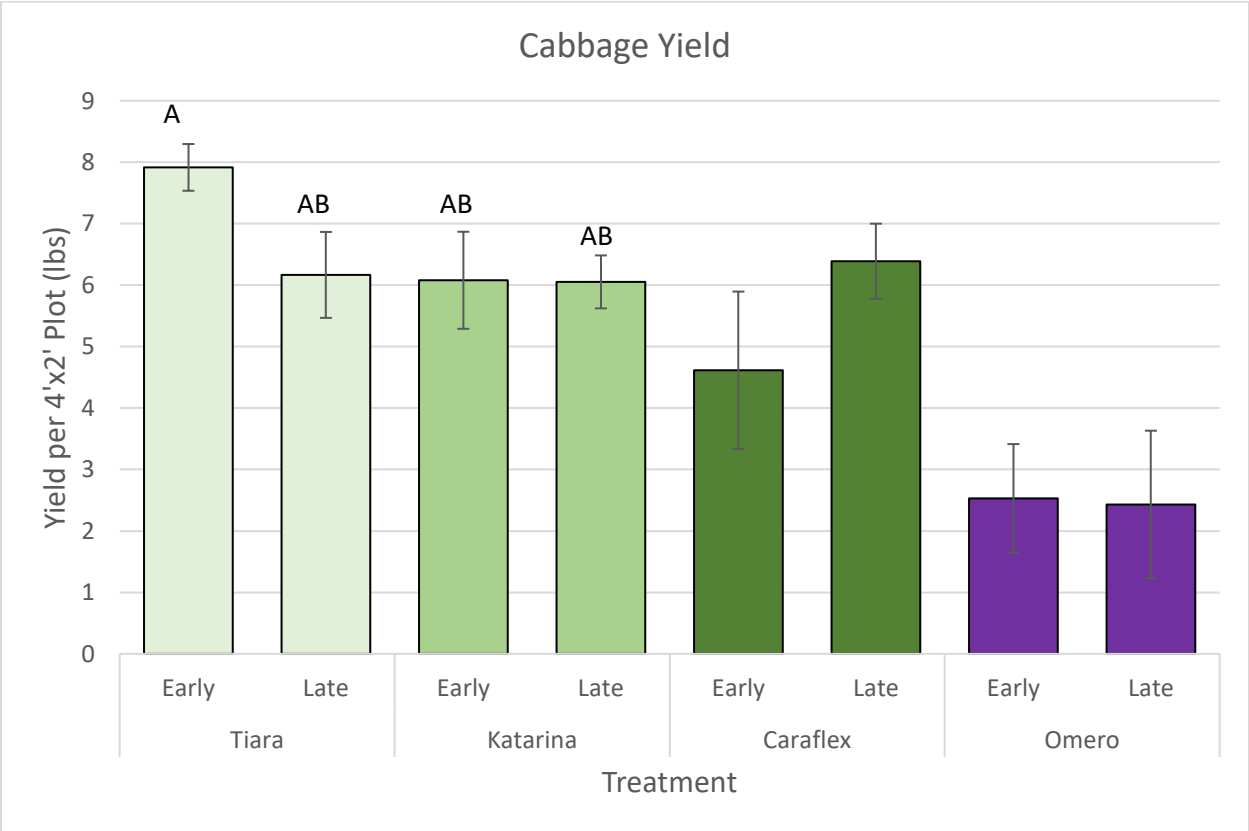


Fig. 4. Total cabbage yield from experimental plots