

Winter Sprouting Broccoli – A new crop for early spring

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Sprouting broccoli is a traditional English crop. In England, it is planted in late summer, plants survive the fall and winter, and prolific amounts of small purple or white florets are produced on long leafy stems in late winter/early spring. Many varieties require a cold treatment, or vernalization, before making sprouts. Sprouting broccoli produces many small shoots, rather than a single head. Unlike broccoli rabe or rapini, the shoots are mild-flavored and sweet.

Growing in High Tunnels

New England winters are more severe than those in England. However, in Durham NH, sprouting broccoli can survive the winter in unheated high tunnels and produce early spring crops. Here, the shoots are harvested from March to May, when fresh green vegetables are in short supply and high demand. Winter sprouting broccoli can provide a source of income from high tunnels used for summer crops when they would otherwise be unoccupied and when little local produce is available, and can also serve as a rotation crop for the tunnel.

Varieties, Availability & Yields

Most sprouting broccoli varieties are purple, but some are green or white, like cauliflower. Currently, seeds of these varieties are available from only a handful of companies (Thompson & Morgan, Bountiful Gardens, High Mowing Seeds, and Territorial) but that will likely change if growers ask for them. The white varieties (White Sprouting Early, Colusa, Burbank, and Nine Star) tend to yield more than the purple varieties, averaging 0.25-0.6 lbs/plant. Red Spear was the highest yielding purple variety (approx. 0.5 lbs/plant), but Santee and Bordeaux were also consistent and early. Claret and Red Head had lower yields, consistently around 0.3 lbs/plant.

Variety	Seed Source	Description
Bordeaux	Bejo	Purple sprouts, Small plants, Early season
Burbank	Elsoms	White sprouts, Large plants, Mid season
Claret	Elsoms	Purple sprouts, Large plants, Late season
Colusa	Elsoms	White sprouts, Large plants, Mid season
Nine Star	Thompson & Morgan	White sprouts, Large plants, Mid-Late season
Red Arrow	Elsoms	Purple sprouts, Medium plants, Mid season
Red Head	Thompson & Morgan	Purple sprouts, Medium plants, Mid season
Red Spear	Elsoms	Purple sprouts, Small plants, Early season
Santee	Bejo/High Mowing	Purple sprouts, Small plants, Early season
White Sprouting Early	Elsoms	White sprouts, Large plants, Early-Mid season

In our 30x60 tunnel, we harvested 136 lbs of sprouts over the entire season. However, our experimental layout did not use space the most efficiently. At our spacing (2.25 sq.ft. per plant), a 30x60 tunnel could theoretically house 800 plants, yielding over 200 pounds. Higher yields may be possible with optimum spacing, timing and rowcover use.

Marketing. This crop will not be familiar to consumers, and it will require education about the crop and how to prepare it. It can be used in any way that broccoli or asparagus is used. It may be helpful to refer to it as '*asparagus broccoli*' or another creative name for marketing purposes. In our experience, trial consumers and chefs have been ecstatic about the crop once it is introduced to them and they then seek it out. Restaurants or specialty markets may be the best market for the crop since the harvest season is before most farm stands and markets open for the season.

Production Information. From 2006-2008, we grew several varieties of winter sprouting broccoli in unheated tunnels in Durham, NH. Within the tunnels, some plants were covered with rowcover (see below) in December. After establishment, the plants were not watered, fertilized, or otherwise managed during the winter. Winter temperatures remained below 0F for several days. The outdoor minimum temp in 2008 was -18F; at the same time, the low temp within the tunnel was 2F, and the low temp under rowcover within the tunnel was 11F.

FERTILITY: Compost and aged manure was added at a rate corresponding to approximately 50 lbs N/acre prior to planting. During the harvest season, plants were fertigated twice with calcium nitrate (15.5-0-0) at a rate of 5 lbs N/acre each time.

PLANTING DATE: We tested three planting dates: seed 8/10 (transplant 9/14), seed 8/26 (transplant 9/26), and seed 9/12 (transplant 10/10). All seedlings were grown in a greenhouse and transplanted into the high tunnel. Overall yield was similar for all three plantings, but we feel that additional work is needed to determine the best planting date.

SPACING: We used raised beds with 3' between row-centers. Plants were planted in staggered double rows, with 9" between each plant in a row. This corresponded to 2.25 square feet per plant. More trials are needed to determine the optimum spacing.

HARVEST PERIOD: Nearly all plants survived the winter. In early March, rowcovers were removed from covered plants. The first harvest has been in mid-March, with the last harvest in early May. For most varieties, the harvest period lasted for 3-5 weeks.

ROWCOVERS: The use of rowcover (Dupont 5131, 1.25 oz/sq yd) within the tunnel greatly increased yield. Compared with uncovered plots, plots with rowcovers were earlier, had a significantly longer harvest period, and had higher total yields (0.29 vs. 0.17 lbs per plant).

PESTS: Because the crop is grown outside the main production season, common Brassica pests are not present during harvest. In 2007, our plants became infested with aphids during harvest (March-April). Despite heavy infestation, aphids remained on lower leaves and did not affect the sprouts. We managed the aphids by removing infested outer leaves and introducing ladybugs (*Hippodamia convergens*) to reduce aphid populations.

With additional questions about this crop and/or our results, please contact Becky Sideman at becky.sideman@unh.edu or 603-862-3203.