



Winter Sprouting Broccoli: A new crop for high tunnels?

Clifton Martin & Becky Sideman
38 Academic Way, Spaulding Hall, Durham NH 03824

What is Winter Sprouting Broccoli?

Sprouting broccoli is a traditional English crop for fresh market and home gardeners. Sprouting broccoli produces many small shoots, rather than a single head. Many varieties require a cold treatment, or *vernalization*, before making sprouts.



In England, sprouting broccoli is planted in late summer, and plants grow very slowly during the fall and winter. The next spring, they produce prolific amounts of small purple or white florets on long bright green leafy stems. The shoots are harvested from March to May, when other fresh local vegetables are in short supply and high demand. Unlike broccoli rabe or rapini, the shoots are mild-flavored, even sweeter than summer broccoli.

Growing in High Tunnels

New Hampshire winters are more severe than those in England. However, we have shown in Durham, NH that sprouting broccoli can survive the winter in unheated high tunnels. Many high tunnels are used to produce tomato crops during the summer. Winter sprouting broccoli can provide a source of income from tunnels when they would otherwise be unoccupied and when little local produce is available. It could also serve as a rotation crop that might help reduce soilborne diseases in the next tomato crop.

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. In three years of experiments with different varieties, we have had yields in the range of 0.25 lbs of sprouts per plant. It appears that the white-sprouted varieties, in general, have higher yields than the purple varieties.

Variety	Source*	Description
Claret	Elsoms	Purple sprouts, Large plants, Late season
Santee **	Bejo/HM/JSS	Purple sprouts, Small plants, Early season, High yields
Nine Star	TM	White sprouts, Large plants, Mid-Late season, High yields
Red Arrow	Elsoms	Purple sprouts, Medium plants, Mid season, High yields
Red Head	TM	Purple sprouts, Medium plants, Mid season
Red Spear **	Elsoms	Purple sprouts, Small plants, Early season
White Sprouting Early **	Elsoms	Green sprouts, Large plants, Early season
Late White Sprouting	Elsoms	Green sprouts, Large plants, Late season
Burbank	Elsoms	Creamy white sprouts, Large plants, Late season
Colusa	Elsoms	Creamy white sprouts, Large plants, Late season

** Cultivars marked with two asterisks are recommended for trial, based on our studies.

* HM = High Mowing Seeds, JSS = Johnny's Selected Seeds, TM = Thompson & Morgan Seeds

NH Agricultural Experiment Station - COLLEGE OF LIFE SCIENCES & AGRICULTURE



Yields

In our 30'x60' tunnel, we harvested 136 lbs of sprouts over the entire season in 2008. However, our experimental layout did not use space as efficiently as possible. At our spacing (2.25 sq.ft. per plant), a 30x60 tunnel could house 800 plants, yielding over 200 pounds. Higher yields may be possible with optimum spacing and timing.

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 2007-2010, we grew several varieties of winter sprouting broccoli in unheated tunnels in Durham, NH. **Important step:** Inside the tunnels, plants were covered with an additional layer of 1.25 oz spunbonded polyester rowcover during the coldest part of the winter (late Nov-early Mar). After establishment, the plants were not watered, fertilized, or otherwise managed during the winter. Winter temperatures were below 0F for several days; in 2009 the crop survived a low temperature of -18F.

FERTILITY: Compost and aged manure was added at a rate corresponding to approximately 50 lbs N/acre prior to planting. Spring sidedressing may be beneficial for later varieties.

PLANTING DATE: Based on our results, seeding from late Aug-early Sept and transplanting in late Sept-early Oct appears best in terms of plant survival and yield. Plants that are either too small or too large when winter arrives and temperature plummet are less likely to survive.

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: In early March, it is important to remove rowcovers from covered plants to prevent over-heating and to let light in as the plants start to grow. The earliest varieties can be harvested in early March and the latest varieties will go until late April-early May, depending upon the spring weather patterns. For most varieties, harvests last for 1-3 weeks.

PESTS: Because the crop is grown outside the main production season, common Brassica pests (cabbage loopers, imported cabbageworm, etc.) 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 the heavily 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.