

College of Agriculture & Life Sciences
Department of Horticultural Science

BRUSSELS SPROUTS

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The Brussels sprout is a cool season crop, belonging to the cabbage family, and closely related to cauliflower, broccoli, kale, collards, etc. Like cauliflower, it thrives best in a cool humid climate, thus commercial production of this crop is concentrated in the “fog-belt” of California with limited production in the Long Island, New York area. The edible portion of this crop is the “bud” or small cabbage-like head which grows in the axils of each leaf. Occasionally the tops are used as greens.

The cool valleys in the mountains have the best potential for commercial production, followed by coastal areas where long cool falls offer some opportunity. For most of North Carolina, Brussels sprouts are only for home garden production.

Varieties - Jade Cross E Hybrid, Royal Marvel, and Long Island Im-proved (Catskill) are three varieties that perform satisfactorily. About 85 to 95 days are required from field seeding or transplanting to maturity.

Plant Growth - Growers may grow plants and transplant to the field or the crop can be seeded directly in the field using a Planet Jr. or a precision type seeder. For transplanting, 3 to 4 ounces of seed will be required to produce plants for one acre. Drill the seed in rows about 8 to 10 inches apart on a raised bed 36 to 42 inches wide and 4 to 6 inches high. Drill from 20 to 25 seeds per foot of row. The plant bed should

be fumigated for control of weeds and soil-borne insects and diseases. (See the *N.C. Agricultural Chemicals Manual* for vegetable crops plant bed fumigation recommendations.) The bed should be thoroughly aerated prior to seeding. Keep the soil moist after seeding to promote rapid germination and emergence. Thin, if necessary, to a spacing of 1 inch between plants. Greenhouse-grown transplants may also be used and several plant growing systems are available. If seeded directly in the field it will take 1 to 2 pounds of seed per acre.

Soils and Fertilizers - This crop may be grown successfully on a wide variety of soils; however, it performs best on a medium to heavy soil that is high in organic matter and fairly high in nitrogen. The soil pH should be between 6.0 and 6.8.

Apply 700 to 1000 pounds of 8-8-8 or its equivalent plus 10 pounds of borax per acre. Without boron, small buds, hollow stems, and low yields will result. Sidedress with 30 pounds of nitrogen, with enough borax to provide 8 additional pounds of borax per acre. Solubor and N-Boron are also good sources of boron that can be sprayed on plants. Home gardeners should mix 2 level tablespoons of borax to 5 quarts of fertilizer and apply this to each 100 feet of row before planting. Do not exceed these rates of borax.

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Time To Plant

| Location | Sow Seeds in Bed | Seed Directly | |
|---------------|------------------|---------------|--------------|
| | | to Field | Set in Field |
| Coastal Plain | Late June | Mid July | Late July |
| Piedmont | Mid June | Late June | Mid July |
| Mountains | February-March | Late May | April-May |

Field Planting - Plant in rows 3 to 3 1/2 feet wide and 18 to 24 inches apart in the row. This requires about 6,700 to 12,445 plants per acre. Mechanical transplanters, hand transplanters or hand trowels may be used. To insure proper settling of soil around the roots, the transplants should be watered well.

When seeding directly in the row it is advisable to prepare the soil ahead of time and plant after a soaking rain or irrigation.

Pest Management

Weeds* - Chemical control of grasses and weeds to supplement cultivation is suggested. If cultivation is used it should be shallow (3 inches or less) to avoid root damage and frequent to keep out grass and weeds. Brussels sprouts are a long season crop and weeds can be a serious problem. Preemergence herbicides are also very helpful.

Insects* - Some of the more damaging insects on this crop are Harlequin bugs, cabbage loopers, diamond back moth, imported cabbage worm, cutworms, cabbage maggot, thrips and web worms. Aphids are especially difficult to control. A rigid control program will be necessary and the program must be started early.

Diseases* - Powdery mildew is a disease of Brussels sprouts but generally it is not too severe.

* For pest control check the N.C. Agricultural Chemical Manual or contact the county extension center for specific recommendations.

Irrigation - An application of 1 to 1.5 inches of water every 7 days is highly desirable to produce large yields of high quality Brussels sprouts.

Harvesting - The “small heads”, “buds” or “sprouts” are found at the base of each leaf. These buds are harvested when they attain 1 to 2 inches in diameter,

are firm, but before they turn yellow. Harvesting starts about 90 to 100 days after field seeding. The sprouts begin maturing from the bottom upwards. The sprouts can be picked several times or harvest can be delayed and the whole stalk taken at once. In picking, the leaf below the sprout is broken away from the main stem. Harvesting should start before the lower leaves begin turning yellow. Often the central growing point is removed to hasten harvest. This is done when the sprouts are well formed.

As the lower leaves and sprouts are removed, the plant continues to grow upwards producing more leaves and sprouts. The plant will withstand frost and can be harvested until freezes occur. The best quality sprouts are produced during periods of sunny days and light frosts at night. Hot weather results in soft, loose or open sprouts of poor quality.

One plant is capable of producing about 2.5 to 3.0 pounds; but commercial production is terminated at 2.0. The frequency of harvest and the number of harvests depends entirely on the weather. During the earlier, warm periods harvests may be every 7 to 14 days with about 2 to 6 sprouts being removed per harvest. As the weather becomes cooler harvests may be delayed to once every 3 to 4 weeks, with as many as 10 to 15 sprouts being removed from each plant at each harvest.

Yields, Marketing, Storage - A good yield would be about 7,000 pounds per acre. Sprouts can be picked in hampers or baskets and hauled out of the field as soon as possible for packaging and refrigeration. Sprouts should be cleaned, trimmed of loose leaves, and sorted to remove those that are soft, damaged, or too large size. Brussels sprouts are packaged in either 25-pound drums, quart baskets or 12-ounce cellophane bags. Unless refrigerated, the sprouts' color and quality deteriorate rapidly. They can be stored for periods as long as 30 days if kept at 32 °F and 90 to 95% humidity.