

College of Agriculture & Life Sciences
Department of Horticultural Science

ASPARAGUS CROWN PRODUCTION

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Producing asparagus crowns for sale or use is simple and profitable. Careful attention to details described here is important so that all requirements for certified plant production can be met. Certified plants are most saleable and bring a premium price. One-year-old crowns will produce a healthy asparagus planting.

Variety Selection — Use either Jersey Gem, Greenwich, Jersey Giant, UC157F1, or Mary Washington. These varieties have grown well in North Carolina. The first 3 varieties are all male hybrids which are very productive and do not produce seedling asparagus (weeds). California varieties, other than UC157, have not done well and are short-lived in the eastern United States.

Seed Treatment — Dip seed in a 1:4 bleach solution for 15 minutes, remove seed and wash for 5 minutes in plain water, then dry. Soak seed for 4 days in water prior to planting to soften the seed coat, then air dry. After drying, dust with a chemical seed treatment (see the *NC Agricultural Chemicals Manual* or contact your local Cooperative Extension agent). This treatment is to control rootlet rot (*Fusarium oxysporum* spp. *asparigi*).

Field Selection — Choose soil in which asparagus has not been grown before. This insures a minimum amount of crown rot (*Fusarium moniliforme*). Choose well

drained sandy soil about 18 to 24 inches deep with a clay subsoil.

Lime and Fertilizer — Test soil for lime and fertilizer needs. The soil should be limed to pH 6.5. Phosphorus is important to root growth and should be high. Apply 100 lb per acre of 20% phosphate 2 inches below the seed in addition to the soil test recommendation for plow-down fertilizer. A soil test should be taken, but if not, apply 50 lbs of K_2O per acre because asparagus is a heavy potassium user. Nitrogen is needed at planting at the rate of 20 to 40 lbs per acre. Then apply 30 lbs N and K per acre in late May and mid-June as a sidedress. An additional sidedressing may be necessary in September if crown size is small.

Spacing and Seeding — Sow seeds in mid-April in rows 15 to 24 inches apart depending on cultivation and harvest equipment. Sow seeds 1 to 1 1/2 inches deep. Use a precision seeder to place seed 1 1/2 to 2 inches in the row. This seeding rate will require 8 to 20 lb of seed per acre depending on the row spacing.

Weed Management — Weed management is important for good crown growth and efficient harvest. Select fields with low weed infestations and plan to cultivate. For control of emerged weeds after seeding but just prior to emergence of asparagus seedlings, use a contact herbicide. After seedlings are 6 to 18

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inches tall, use a post emergence herbicide. If annual or perennial grasses are present, apply herbicide.

Insect Control — Asparagus beetle can be a serious problem in the crown nursery. The beetle is controlled with Sevin* at 1.0 to 1.5 lbs a.i./A. These applications are necessary only when the beetle or larvae are present. Armyworms are occasionally a problem and can be controlled with 0.9 lb a.i./A of Lannate* or Nudrin*.

Irrigation — Adequate soil moisture is important for seed germination and to keep the young plants growing rapidly. Good first year growth is important for large crowns.

Nursery Scheduling — Approximately 1,000 asparagus seeds are contained in an ounce. The normal germination rate is 85%. The recommended seeding rate is 6 to 9 per ft of row. Thus, each pound of seed should plant 1,600 ft of row and result in up to 13,000 crowns.

Digging — Before digging, mow or roto-beat dead top-growth (fern). Ferns will usually die in December. Crowns should be dug as close to permanent planting date as practical. Various implements can be used to remove crowns from the soil such as mold-board plows, peanut lifters or bar type potato diggers. Potato harvesters usually work best because they can deliver the crowns to bulk boxes for sorting. If you are delayed between digging and planting, store crowns at 40°F to protect them from drying out. Crowns should be moved from direct sunlight as soon as possible to prevent drying.

Grading — The minimum diameter of good one-year-old crowns is 1/2 inch. They should weigh 0.1 lb or more and have a cluster of large, well formed buds. All plants that show evidence of freeze injury, disease or serious mechanical damage should be culled. Also small crowns with fewer than 4 to 5 roots or with spots or off-color blemishes should be culled. Dip crowns for one minute in a fungicide suspension to reduce rots (refer to *NC Agricultural Chemicals Manual*.)

Crown Yields Per Acre and Seed Needs for Several Row Spacings

Row Spacing	Seeds Needed Lb/A	Crowns Produced in Thousand/A ⁺
Single row (24")	12	130
Single row (38")	8	82
Double row (38")	16	164
5 rows (in 76")	20	20

⁺ with 66% of seed going to harvestable crowns

* Consult the current edition of the *N.C. Agricultural Chemicals Manual* for the most recent recommendations.