A PACIFIC NORTHWEST EXTENSION PUBLICATION

Washington State University | Oregon State University | University of Idaho

BABY CORN

By
Carol A. Miles, Professor and Vegetable Extension Specialist, Department of Horticulture, WSU Mount Vernon Northwestern Washington Research and Extension Center, Mount Vernon, WA.
Catherine H. Daniels, Associate Professor and Extension Specialist, Department of Entomology, WSU Puyallup, Puyallup, WA.
Leslie Zenz, former field research assistant in the Vegetable Horticulture Program with Dr. Miles. **Jacky King**, Technical Assistant, Vegetable Horticulture Program, WSU Mount Vernon Northwestern Washington Research and Extension Center, Mount Vernon, WA.

PNW PEER REVIEWED

PNW532

Baby Corn

About Baby Corn

Fresh baby corn is eaten in its entirety and has a crisp texture and a subtle, slightly sweet corn flavor. Although almost all the baby corn found in the United States is imported from Asia in pickled or canned form, fresh baby corn is easy to grow in the Pacific Northwest. Baby corn is no longer a delicacy or specialty food reserved for salad bars and Asian restaurants; it is a delicious locally produced treat to eat raw or cooked in many recipes.

Baby corn's miniature size makes consumers think that it grows from "baby" corn plants, but the tiny ears of baby corn are simply immature ears from regular-sized corn plants (Figure 1). Specialty cultivars are available for baby corn production, but baby corn can also be harvested from most common corn cultivars. The purpose of this publication is to describe how to select a cultivar and grow baby corn. Marketing baby corn is also discussed.

Figure 1. Baby corn plants are regular-sized plants (left), where the ear is harvested at an immature stage, generally within 3 days of silk emergence (right). (Photo by Carol Miles)

Growing Baby Corn

There are two different methods for producing baby corn. In the first method, baby corn is the primary crop, and a cultivar is selected and planted to produce only baby corn. In the second method, baby corn is the secondary crop, the primary being either sweet corn or field corn. In this latter case, the top ear is allowed to fully mature as sweet or field corn, and one or two lower ears are harvested for baby corn (Galinat 1985; Wang et al. 2010).

The decision whether to grow baby corn either as a primary or as a secondary crop will influence cultivar choice, planting density, and fertilizer rates.

Selecting a Cultivar

There are specialty cultivars of corn, such as Baby Corn, that have been developed specifically for baby corn production. Many other sweet corn (su, se, sh2) and field corn (Su) cultivars may also be suitable for baby corn production. Plants of baby corn cultivars tend to produce more ears per plant than other corn cultivars. However, many common corn cultivars will also produce quality baby corn. Table 1 lists several cultivars that produced marketable baby corn in field trials in southwest Washington. These cultivars can be grown to produce baby corn as either a primary or a secondary crop.

Table 1. Corn cultivars that produced marketable, fresh baby corn, and the number of days from planting to first harvest, in southwestern Washington (Miles et al. 1999).

Cultivar	Type[1]	Days to harvest[2]
Kandy King	su	96
GH2283	su	98
Tuxedo	se	99
Bodacious	se	100
Bonus[3]	su	105
Baby Corn	Su	108
TenderTreat	se	110

[1]su— "sugary" or "standard" sweet corn; se "sugary enhanced" sweet corn; Su— "field" corn.

[2]Number of days from planting to first harvest in Montesano, Grays Harbor County, western Washington.

[3]Bonus was not tested in western Washington, but it was tested in western Oregon (Reiten 1999). Days to maturity have been adjusted to reflect expected maturity in western Washington.

For an explanation of the genetics of corn relative to sugariness (a common term used to describe how sweet corn is), see Additional Resources. Before planting a large-scale crop, plant a small test plot to determine the cultivar that would best fit your market niche. If baby corn is being produced as a secondary crop, the cultivar must fit the purpose of the primary crop, whether it be sweet or field corn. Choose a cultivar that also has good baby corn characteristics. Ear quality—not quantity—should be your primary criterion.

Ear appearance

When selecting a corn cultivar for baby corn production, ear appearance is very important. Kernels should be uniform in shape and petite in size, with rows neatly aligned and ends evenly tapered. Baby corn ears should be 2–4 inches long and 1/3–2/3 inch in diameter at the base, or butt end (Chutkaew and Paroda 1994).

Advantages of different cultivars

There is no general taste advantage to using sweet corn types instead of field corn types for fresh baby corn production (Bar-Zur and Schaffer 1993). Immature ears are harvested before pollination and before any sugars have accumulated in the kernels. In terms of harvesting, sweet corn cultivars have ears that are easier to break off from the stalk so tend to be easier to hand-harvest. In addition, they have been specifically developed for good kernel appearance. The benefit to using field corn types is lower seed cost. Before selecting a cultivar for a large planting of baby corn, do a test planting of several cultivars and taste the baby corn ears to ensure they are of good eating quality.

Cross-pollination

If field corn or specialty “Su” baby corn cultivars are grown next to any sweet corn cultivars grown for mature sweet corn production, the cultivars will cross-pollinate, and the sweet corn will lose its sugariness. If corn is to be grown to maturity, **do not plant field corn cultivars within 250 feet of sweet corn cultivars.** De-tasseling the field corn and baby corn cultivars will also prevent undesirable cross-pollination and will not affect baby corn production. See Additional Resources for an explanation of the different types of sweet corn and separation distances needed to prevent cross pollination.

If a field corn cultivar is grown for baby corn and there is sweet corn growing nearby, detassel the field corn to prevent cross-pollination of the sweet corn.

The baby corn does not need to be pollinated to yield a crop. If growing this as a secondary crop, you just can’t grow it within 250 feet of sweet corn.

Soil Testing and Fertilizer Applications

In early fall of the year preceding corn planting, or in the spring prior to planting, conduct a soil test to determine lime and fertilizer requirements. See Additional Resources for a detailed description of soil testing and soil nutrition.

Soil pH

The optimum pH range for good corn growth is 5.8–7.0. If indicated by soil test results, apply agricultural lime in the fall or in the spring at the recommended rates. Most laboratories will recommend lime application rates based on a soil SMP buffer test that takes into account soil textural class and soil organic matter content (Table 2). Application rates of lime without the SMP buffer test are only estimates since application rates vary for textural classes and pH. If tests indicate that soil pH is too basic, add sulfur at recommended rates.

Table 2. Lime application rates based on soil Oregon State University SMP buffer test (Jackson et al. 1983).

Soil SMP pH	Lime Application (ton/acre)
below 5.6	4–5
5.6–5.8	3–4
5.9–6.0	2–3
6.0–6.3	1–2
over 6.3	0

Phosphorus and potassium

Based on soil test results, apply phosphorus and potassium fertilizer at planting (Table 3). Potassium may be applied in the band at planting; however, no more than 60 pounds per acre should be banded. If necessary, broadcast and incorporate potassium prior to planting. Also, to avoid seedling damage, the total potassium plus nitrogen in the band should not exceed 90 pounds per acre.

For May planting dates, use the phosphorus application rates listed. For June planting dates, reduce phosphorus application rates by 1/3 and do not apply any phosphorus if the soil test exceeds 50 ppm (Hart et al. 2010). Band phosphorus approximately two inches to the side, and two inches below, the seed.

If manure is used, broadcast it and thoroughly incorporate prior to final field preparation. See Additional Resources for a detailed description of manure application.

Table 3. Phosphorus (P) and potassium (K) application rates based on soil test results (Hart et al. 2010).

Soil Test Result for P (ppm)	Phosphate Application (lb/acre of P_2O_5)	Soil Test Result for K (ppm)	Potassium Application (lb/acre of K_2O)
0–15	120–150	0–100	100–150
15–50	80–120	100–200	50–100
over 50	60-80	over 200	0

Nitrogen

Table 4. Nitrogen (N) application rates for sweet corn based on previous crop (Mansour and Hemphill 1999).

Previous Crop	N Application (lb/acre)
Grain	200–225
Corn or vegetable	150–175
Legume	100–125

In Idaho, eastern Washington, and eastern Oregon, use a soil test to determine N application rates. In western Washington, if baby corn is the primary crop, a maximum of 80–100 pounds of available nitrogen per acre is needed. High nitrogen application rates are not essential as baby corn is harvested before ear maturation, a time of high nitrogen use (Kotch et al. 1995). If baby corn is the secondary crop, apply nitrogen as for sweet corn (Table 4). In either case, apply 30–50 pounds of nitrogen per acre at planting in a band, along with the phosphorus and potassium fertilizer.

The total nitrogen plus potassium in the band should not exceed 90 pounds per acre or seedling damage will occur. If necessary, broadcast and incorporate potassium prior to planting to avoid excess amounts of fertilizer in the band. Apply the remaining nitrogen in a band six inches from the plants when they are 1–1½ feet tall, approximately six weeks after planting.

Crop Establishment and Management

Planting

Soil temperatures of 50^{o}F is the minimum for planting corn, and the optimum is 60–95^{o}F. To the east of the Cascades, corn can be planted according to soil temperature, while west of the Cascades, it's all about soil drainage. That is, plant corn when temperature is adequate and soil is sufficiently dry to work. Throughout the Pacific Northwest, plant baby corn in late April through early June. Prior to planting, plow and harrow soil as needed to form a smooth, level seed bed. Plant on well-drained soils since they warm faster and are less likely to harbor soilborne diseases.

Plant seed at a depth of 1–2 inches. “First in market” usually brings the highest value, and in western Washington, early planting is important to ensure corn maturity.

When baby corn is the primary crop, space rows 36 inches apart and space seed four inches apart within the row (Kotch et al. 1995). Plant population will be approximately 44,000 plants per acre. When baby corn is the secondary crop, plant seeds according to guidelines for sweet corn or field corn production: approximately 36 inches between rows and 8–10 inches apart within the row. Plant populations will range between 17,000 to 22,000 plants per acre.

If needed, cover the new plantings with floating row covers to protect emerging seedlings from bird predation. If you use a row cover, place it loosely over the newly seeded field and secure with soil every 10 feet along all sides (Figure 2). The row cover can be removed after corn plants reach a height of 4–6 inches. Using a row cover can result in a 2-week advanced harvest. If weed control is an issue, simply remove row cover, perform weed-control activities, and replace when done.

Figure 2. Row cover placed over a new planting to prevent bird predation (left); remove the row cover when plants are approximately 6 inches tall (right). (Photo by Carol Miles)

Irrigation

The seasonal water requirement for corn in western Washington is 12–14 inches and 25–30 inches in eastern Washington. Irrigation is required for growing baby corn in areas of the Pacific Northwest where seasonal precipitation rates from May through September are less than these numbers. Irrigate from mid-June till late August so that precipitation plus irrigation is equivalent to a rate of two inches of water every week (eastern Washington) or two inches of water every two weeks (western Washington). If corn harvest continues into September, and there is no precipitation that month, it is beneficial to irrigate one additional time. If rainfall occurs throughout the growing season, or the soil receives sub-irrigation, it may not be necessary to irrigate.

Weed control

As with any corn planting, it is necessary to keep the weeds suppressed until the crop reaches a height of two feet. Early weed competition will delay corn maturity and reduce yield. To reduce weed germination and growth, plant a cover crop, such as rye or wheat, in the fall prior to spring corn planting. Mow the cover crop, if appropriate, before plowing it under in the spring. Mowing the cover crop reduces the size of the crop debris, making plowing much easier and speeding up decomposition processes. Cover crops have the added benefit of increasing soil fertility.

During the growing season, control weeds with mechanical cultivation between corn rows and hand cultivation within the row. Propane flaming can also be effective against weeds (Peachey and William 1997). At least two weeding passes will likely be necessary. As the season progresses and the plant canopy closes in, the need for weed control will drop.

If you use chemical weed controls, first identify the weeds in the field, then select herbicide and application rates according to weed types, soil type, and percent of soil organic matter. See Additional Resources for current herbicide recommendations. Check herbicide product labels in order to meet preharvest intervals for baby corn. Apply herbicides when corn plants and weeds are at the size and leaf stage described on the herbicide label. Pay particular attention to waiting periods stipulated on the label between pesticide application and harvest, because you will harvest baby corn several weeks earlier than sweet corn.

Harvest

Ears are ideal when they are bite sized: approximately 2–4 inches long and 1/3–2/3 inch in diameter at the base, or butt end. To meet these criteria, harvest ears 1–3 days after silks become visible (Bar-Zur and Saadi 1990). Harvest a planting for baby corn every 2–3 days. At this early stage of ear development, the ear can grow very quickly, becoming too large in just 4–5 days (Figure 3). Some field corn cultivars may need to be harvested before the silks emerge. To best determine the appropriate time to harvest a cultivar in your area, harvest a few ears each day starting as soon as the ears appear on the stalk, and remove the husk to check the quality and size of the baby corn ears.

Harvest individual ears by hand. Each picking requires the same amount of time and labor that would be required to harvest hand-picked sweet corn. Most cultivars should produce marketable ears for 3–4 weeks, though very early cultivars may have a shorter harvest period of two weeks.

For baby corn as a primary crop, harvest all ears. A single planting may be harvested 9–12 times over a period of 3–4 weeks (Miles et al. 1999). The close in-row spacing results in more high-quality primary ears per acre. Most cultivars will produce 2–3 ears per plant; however, quality of the third ear may not be adequate (Figure 3). In general, the weight of an ear of baby corn, with the husk removed, is approximately 12% of the weight with the intact husk. The weight of a single ear of baby corn is approximately 0.1 lb with the husk intact and 0.012 lb with the husk removed. Expected yield will vary according to plant population and number of ears picked per plant. For 22,000 plants per acre and two ears picked per plant, expected yield is approximately 4,400 pounds per acre of baby corn ears with husk intact, or 528 pounds baby corn with husk removed (Miles et al. 1999).

For baby corn as a secondary crop, harvest the second ear from the top of the plant for baby corn, and allow the top ear to mature for sweet corn or field corn. This method allows growers to use the secondary ear that otherwise may not mature for sweet corn production or, in the case of field corn, would not contribute greatly to silage yield.

Figure 3. Ears can grow from a bite-tender length of 2–4 inches to a tough unpalatable length of 5–6 inches in 3–4 days (left); the third ear, or lower, from the top of the plant is often misshapen and malformed and not appropriate for baby corn harvest (right). (Photo by Carol Miles)

Post-Harvest

After harvest, place the baby corn ears immediately into refrigerated storage (34^{O}F) with the husks intact to conserve ear moisture and preserve quality. Baby corn ears with the husks intact can be refrigerated for up to one week without losing quality.

Marketing Baby Corn

In Husk: Baby corn is most commonly sold in the husk to retain moisture and ear quality.

The small ears are very tender, and, if the husks are removed before use, the ears may become damaged, discolored, and dried out. Baby corn can be sold either by the ear or by weight.

Husked: for those growers interested in testing new markets, preliminary research indicates that storing husked baby corn cobs at 37.4°F, in sealed 150-gauge low density polyethylene bags, extended shelf life and delayed spoilage for up to four weeks over no treatment (Vani et al. 2013).

Direct-market: restaurants and farmers markets both are good places to begin selling baby corn. Local growers have a marketing advantage in that they are able to provide a fresh, tasty product for consumers who have not had the pleasure of experiencing fresh baby corn.

Using Baby Corn

When ready to use baby corn, remove the husk and silks, and wash the ears; be very gentle as the ears are tender and can easily snap. Baby corn can be eaten raw or cooked; either way, the entire tiny ear of corn is edible, cob and all. If using in a cooked recipe, steam baby corn ears for five minutes, or until tender, before adding to other dishes. Baby corn is a common vegetable used in both Asian as well as central and South American dishes (Figure 4).

Nutrition

Baby corn is high in folate, a B-vitamin; four ounces (about 20 ears) provides 31% of the recommended daily amount (RDA). A single 4-ounce serving also provides 13% of the potassium, 14% of the vitamin B-6, 10% of the riboflavin, 17% of the vitamin C, and 11% of the fiber adults need each day (Japan Science and Technology Corporation 2015).

Figure 4. Baby corn used in soup in Taiwan (left) and Costa Rica (right). (Photos by Carol Miles)

Seed Sources

Baby corn seed is not commonly available in the United States. This alphabetical list of seed sources is designed to help readers find baby corn seed.

It is not meant to endorse any of these businesses or detract from any businesses not listed.

Burpee

Evergreen Seeds

Kitizawa Seed

Nichols Garden Nursery

Reimer Seeds

R.H. Shumway's

Southern Exposure Seed Exchange

Urban Farmer

Additional Resources

Fertilizing with Manure and Other Organic Amendments (Bary et al. 2016)

Growing Sweet Corn (Lerner and Dana 2001)

Pacific Northwest Weed Management Handbook (Peachey et al. 2017)

Soil Testing: A Guide for Farms with Diverse Vegetable Crops (Collins 2012)

Sweet Corn for Processing: Genetic Types (Hemphill 2010)

References

Bar-Zur, A., and H. Saadi. 1990. Prolific maize hybrids for baby corn. J. of Hort. Sci., 65(1):97-100.

Bar-Zur, A., and A. Schaffer. 1993. Size and carbohydrate content of ears of baby corn in relation to endosperm type (Su, su, se, sh2). J. Amer. Soc. Hort. Sci., 118(1):141-144.

Chutkaew, C., and R.S. Paroda. 1994. Baby corn production in Thailand—a success story. FAO Regional Office for Asia & the Pacific, Asia Pacific Association of Agricultural Research Institutions, APAARI Publication: 1994/1. 20pp.

Galinat, W.C. 1985. Whole ear baby corn, a new way to eat corn. Proc. Northeast Corn Improvement Conf., 40:22-27.

Hart, J.M., D.M. Sullivan, J.R. Myers, and R.E. Peachey. 2010. Nutrient Management Guide: Sweet Corn (*Western Oregon*). Oregon State University Extension Service. EM 9010-E.

Jackson, T.L., H. Gardner, N.S. Mansour, H.J. Mack, and T.A. Doerge. 1983. Fertilizer guide: sweet corn. Oregon State University Extension Service. FG 11.

Japan Science and Technology Corporation. 2015. *Japanese Standard Tables of Food Composition*, 7th edition. Japan: International Network of Food Data Systems.

Kotch, R.S., J.H. Murphy, M.D. Orzolek, and P.A. Ferretti. 1995. Factors affecting the production of baby corn. J. of Veg. Crop Prod., Vol. 1(1):19-28.

Mansour, N.S., and D. Hemphill. 1999. Commercial Vegetable Production Guides: Sweet Corn. Oregon State University.

Miles, C., L. Zenz, and G. Alleman. 1999. Baby corn. Food from the field series brochure, Washington State University Cooperative Extension King County.

Peachey, R.E., and R.D. William. 1997. Propane flaming for in-row weed control in sweet corn. PNW Sustainable Agriculture Newsletter, 9(2):5-8.

Reiten, J. 1999. Territorial Seed Company. Personal Communication.

Vani, V.S., M. Rajasekhar, and Y.N. Reddy. 2013. Shelf Life and Quality of Baby Corn (*Zea mays* L.) as Affected by Storage at Low Temperature in Polybags. In Proc. 7th International Postharvest Symposium. Eds H. Abdullah and N.N. Latifah. ISHS.

Wang, Z., M. Stone, and E. Gray. 2010. Effect of Different Schedules of Baby Corn (*Zea mays* L.) Harvests on Baby Corn Yield, Grain Yield, and Economic Return. J. Ky. Acad. Sci. 71(1-2): 59-66.

Order Information:

Washington State University Extension
http://pubs.wsu.edu
Fax 509-335-3006
Toll-free phone 800-723-1763
ext.pubs@wsu.edu

Oregon State University Extension Service
http://extension.oregonstate.edu/catalog
Fax 541-737-0817
Toll-free phone 800-561-6719
puborders@oregonstate.edu

University of Idaho Extension
http://www.cals.uidaho.edu/edComm/catalog
Fax 208-885-4648
Phone 208-885-7982
calspubs@uidaho.edu

Pacific Northwest Extension publications are produced cooperatively by the three Pacific Northwest land-grant universities: Washington State University, Oregon State University, and the University of Idaho. Similar crops, climate, and topography create a natural geographic unit that crosses state lines. Since 1949, the PNW program has published more than 650 titles, preventing duplication of effort, broadening the availability of faculty specialists, and substantially reducing costs for the participating states. Published March 2018.