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Blueberry Establishment Calendar[1]

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- Site Preparation Year
- Planting Year
- Establishment Years
- Spacing Guide
- Blueberry Production Price Estimates

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Blueberry Establishment Calendar

This blueberry establishment calendar was developed to be used by potential commercial blueberry growers. It is intended to be used as a guide. Every growing situation is different, so that all growers will have to develop their own cultural management program for their specific sites. Potential growers should also refer to the Minnesota Extension Service folder AG-FO-2902, *Establishment Studies with Minnesota Blueberries,* for production cost information, and AG-FO-2241, *Blueberry Production in Minnesota,* for additional blueberry cultural information. Information in this calendar was developed with the cooperation of seven Minnesota commercial blueberry growers who have established plantings since 1983. The project was funded in part by the Blandin Foundation. Publication was made possible through funds received from the Governor's Rural Development Council.

BLUEBERRY ESTABLISHMENT CALENDAR **Year 0:** Site Preparation Year

Operation	Equipment Needed	Timing	Comments/Rationale
Soil test	Soil Testing Lab*	April, May	Obtain and analyze results before land preparation. Be sure soil test specifies sample is for blueberries.
Order plants	Catalog, phone, and check book	April, May	Secure plants 1 year ahead of expected planting date.
(Brush removal)	(Tractor, saw)	(April, May)	(Remove brush if necessary.)
Plow	Plow	May	—
Herbicide application	Herbicide sprayer	May	Apply contact herbicide to actively growing perennial weeds. Use Roundup when quackgrass is 6-8 inches tall; follow label directions.
(Apply sulfur)	(Fertilizer spreader + cultivator)	(May, June)	(Apply according to soil test recommendation to lower soil pH; incorporate to a depth of 6 inches.)
Cultivate	Cultivator	June-Sept.	As needed to control weeds.
(Herbicide application)	(Herbicide spreader)	(Sept. Oct.)	(If perennial weeds continue to be a problem, reapply contact herbicide.)
(Soil test)	(Soil Testing Lab*)	(Sept.)	(If sulfur was applied, recheck soil pH.)
(Reapply sulfur)	(Fertilizer spreader)	(Oct.)	(Apply only if soil pH is not at the desired range, according to soil test recommendation.)

- ( ) Items in parenthesis may not be required depending upon your situation.
- Pick rocks if necessary.
- Summer planning and ordering: irrigation systems, well drilled, attend summer field days or meetings.
- Winter planning and ordering: order chemicals, fertilizers and supplies for season; study blueberry information; attend winter meetings.
- One year of site preparation is minor over a 25-40 year life span of a planting. However it is essential in getting the planting off to a good start, especially if the soil pH is over 6.0 or perennial weeds or woody brush are present.

* Soil Testing Laboratory, University of Minnesota, 1903 Hendon Ave., St. Paul, MN 55108.

BLUEBERRY ESTABLISHMENT CALENDAR **Year 1:** Planting Year

Operation	Equipment Needed	Timing	Comments/Rationale
Soil Test	—	April	Check pH, if sulfur added.
(Apply pre-plant fertilizer)	(Fertilizer spreader)	(April, May)	(If potassium or phosphorus levels are low, apply fertilizer pre-plant and incorporate according to soil test recommendations.)
Cultivate	Field cultivator	May	—

Continued on next page

BLUEBERRY ESTABLISHMENT CALENDAR (continued) **Year 1:** Planting Year

Operation	Equipment Needed	Timing	Comments/Rationale
Field layout	—	May	Spacing depends on your management system. See plant spacing table on next page.
(Bury trickle tube)	(Tractor and tube tool)	(May)	(Bury tube to one side and below row; do before planting.)
Plant	Hand labor or transplanter	May	Plant early to mid-May if plants are dormant. Plant after frost danger if plants have leafed out. If acid peat is used to modify soil, add it at planting
(Mulch)	(Truck)	(May, June)	(A small amount around the base of each plant will help control annual weeds. Use wood chips or well-rotted sawdust.)
(Herbicide application)	(Sprayer)	(May)	(Apply to control annual weeds. Follow label directions carefully. Simazine (Princep) or oryzalin (Surflan) can be applied at reduced rates during the planting year. Use a directed spray to avoid blueberry plants if they have leafed out.)
Fertilize	Fertilizer spreader	June	Apply at recommended rate after new growth begins, but before July 1.
Cultivate	Cultivator	As needed	Shallow cultivation.
Weed*	Hand hoe	As needed	—
(Winter protection)	(Snow fence) (Straw mulch)	(Sept.-Oct.) (Nov.)	(Fence inside first row if used.) (Loose straw mulch may be helpful in the event of little or no snowfall.)

• ( ) Items in parenthesis are optional or may be necessary depending upon your situation.
* The more effective weed control systems are in the preparation year, the less you will have to do in the planting year. In addition, the newly planted blueberry plants will establish more effectively.

BLUEBERRY ESTABLISHMENT CALENDAR **Years 2 and 3:** Establishment Years

Operation	Equipment Needed	Timing	Comments/Rationale
(Remove winter protection)	(Hand labor)	(Early April)	(When snow is gone and before bud break.)
Apply fertilizer	Fertilizer spreader	April	Before bud break, according to soil test recommendation.
(Apply herbicide)	(Sprayer)	(April)	(Before bud break; simazine (Princep) or oryzalin (Surflan) at reduced rates. Follow label directions carefully.)
Replant missing plants	Hand labor	May	Optional, but suggested since planting will live for 25-40 years.
(Remove blossoms)*	(Hand labor)	(June)	(Remove flowers during bloom on young plants to encourage more branching and stronger vegetative growth.)
(Mulch)	(Truck)	(May-Oct.)	(A small amount around the base of each plant, if desired. Use well-rotted sawdust or wood chips.)
Cultivate and weed	Cultivators	As needed	Shallow cultivation so the root system is not damaged.
Irrigation	—	As needed	Amount used depends on type of system, soil type, and environmental conditions. Never allow soil to dry out, but don't let the soil become saturated.
(Winter protection)	(Snow fence) (Straw mulch)	(Sept.-Oct.) (Nov.)	(Fence inside first row, if used.) (Loose straw mulch may be helpful in the event of little or no snowfall.)
Attend summer tours and winter meetings	—	When held	To learn and share experiences.

• ( ) Items in parenthesis are optional or may not be necessary depending upon your situation.
* If plants are well-established and branched, fruit can be allowed to develop and mature. Normally, fruiting will begin 3 to 4 years after planting.

PLANT SPACING TABLE—PLANTS PER ACRE (1 acre = 43,560 square feet)

Between Row Spacing (feet)	Within Row Spacing (feet) 3	3½	4	4½	5
5	2,904	2,489	2,178	1,936	1,742
5½	2,640	2,262	1,980	1,760	1,584
6	2,420	2,074	1,815	1,613	1,452
6½	2,234	1,915	1,675	1,489	1,340
7	2,074	1,778	1,556	1,383	1,245
7½	1,936	1,659	1,452	1,291	1,162
8	1,815	1,556	1,361	1,210	1,089
8½	1,708	1,464	1,281	1,139	1,025
9	1,613	1,383	1,210	1,076	968
9½	1,528	1,310	1,146	1,019	917
10	1,452	1,245	1,089	968	871

In selecting a spacing:

Consider—tillage tools you will use
—cultural systems planned
—will you have a grass strip
—plant costs
—land costs

Example: 3 feet by 6 feet = 2,420 plants per acre
4 feet by 7 feet = 1,556 plants per acre
864 plants per acre
864 at $2 each = savings of $1,728

—If you cross till, you cannot bury trickle tube or use a solid set system without moving it.
—A hedge row system will probably maximize production.
—As you go further north in the state, plant spacing can be slightly closer.
—For maximum production, plantings should be a minimum of 6 feet by 3 feet to a maximum of 8 feet by 4 feet.

1986 PRICE ESTIMATES: BLUEBERRY PRODUCTION

	Product	Most Common Container Size	Approximate Cost Per Container
Fertilizers	Ammonium sulfate, 20-0-0	50 lb	$6.00 - $ 6.50
	Ammonium nitrate, 33-0-0	50 lb	7.50 - 10.00
	Urea, 44-0-0	40 lb	8.00 - 8.50
	Superphosphate, 0-20-0	50 lb	8.00
	Triple superphosphate, 0-45-0	50 lb	8.50 - 9.00
	Potassium sulfate, 0-0-48	50 lb	8.00
	Sul-Po-Mag, 0-0-21-22	50 lb	5.25 - 7.50
	12-12-12	50 lb	7.00 - 7.50
Soil Amendments	Dispersul or Terrasul (88-100% sulfur)	50 lb	8.50 - 9.00
	Peat	cu yd	7.00 - 18.00
Herbicides	Roundup (site prep year)	1 gal	80.00
	Princep 80WP (simazine)	5 lb	15.00
	Surflan 4AS (oryzalin)	2½ gal	130.00
	Sinbar (Terbacil) only on established plantings—watch rates closely	5 lb	85.00
Mulches	Straw	bale	1.00
	Sawdust	cu yd	3.00
	Wood chips	cu yd	9.00
	Wood waste (bark, sawdust, wood chunks)	cu yd	2.25
Winter Protection	Snow fence + posts	50 ft	40.00
Bird Control	Plastic netting	14 or 17 ft width	0.12 - 0.15 per linear ft

Prices listed are quotes from various Minnesota suppliers. These prices are container prices, not per acre prices. Soil test results should be consulted for correct fertilizer and soil amendment recommendations. For correct herbicide recommendations, consult your county extension office. Always follow label directions. The above prices should be viewed as estimates. Your supplier may charge more or less for the above products. The prices do not include delivery.